

D

Е

F

Н

J

Κ

L

Ν

0

CONTENTS

MR FOR NISMO RS MODELS
PRECAUTION20
PRECAUTIONS
Precaution for Procedure without Cowl Top Cover20 Precautions for Removing Battery Terminal21 On Board Diagnostic (OBD) System of Engine and CVT21
General Precautions21
PREPARATION24
PREPARATION
SYSTEM DESCRIPTION26
COMPONENT PARTS26
ENGINE CONTROL SYSTEM26 ENGINE CONTROL SYSTEM : Component Parts Location
scription
Electric Throttle Control Actuator
High Pressure Fuel Pump
Fuel Tank Temperature Sensor35 Fuel Level Sensor35 Mass Air Flow Sensor (With Intake Air Tempera-
ture Sensor 1)36

Turbocharger36

Turbocharger Boost Sensor (With Intake Air Tem-
perature Sensor 2)37
Engine Coolant Temperature Sensor38
Crankshaft Position Sensor (POS)38
Camshaft Position Sensor (PHASE)39
Intake Valve Timing Control Solenoid Valve39
Exhaust Valve Timing Control Position Sensor39
Exhaust Valve Timing Control Solenoid Valve40
Air Fuel Ratio (A/F) Sensor 140
Heated Oxygen Sensor 240
Knock Sensor41
Engine Oil Pressure Sensor41
Engine Oil Temperature Sensor42
Cooling Fan42
EVAP Canister Purge Volume Control Solenoid
Valve42
EVAP Canister Vent Control Valve43
EVAP Control System Pressure Sensor43
Battery Current Sensor (With Battery Tempera-
ture Sensor)43
Malfunction Indicator lamp (MIL)44
Oil Pressure Warning Lamp44
Refrigerant Pressure Sensor44
Stop Lamp Switch & Brake Pedal Position Switch44
Clutch Pedal Position Switch45
ASCD Steering Switch45
Information Display45
STRUCTURE AND OPERATION46
Positive Crankcase Ventilation46
On Board Refueling Vapor Recovery (ORVR)47
On Board Relacing Vapor Recovery (ORVIX)47
SYSTEM48
ENGINE CONTROL SYSTEM48
ENGINE CONTROL SYSTEM : System Diagram48
ENGINE CONTROL SYSTEM : System Descrip-
tion48
DIRECT INJECTION GASOLINE SYSTEM49
DIRECT INJECTION GASOLINE SYSTEM:
System Diagram50

DIRECT INJECTION GASOLINE SYSTEM : System Description	. 50	EVAPORATIVE EMISSION SYSTEMEVAPORATIVE EMISSION SYSTEM : System	65
FUEL PRESSURE CONTROL	5 0	Diagram	65
FUEL PRESSURE CONTROL FUEL PRESSURE CONTROL : System Diagram	. 53 . 53	EVAPORATIVE EMISSION SYSTEM : System Description	65
FUEL PRESSURE CONTROL : System Description		AUTOMATIC SPEED CONTROL DEVICE (ASCD). AUTOMATIC SPEED CONTROL DEVICE (AS-	66
		CD) : System Diagram	67
ELECTRIC IGNITION SYSTEM	. 54	AUTOMATIC SPEED CONTROL DEVICE (AS-	
ELECTRIC IGNITION SYSTEM : System Diagram	55	CD) : System Description	67
ELECTRIC IGNITION SYSTEM : System De-	. 55	INTEGRATED CONTROL SYSTEM	67
scription	. 55	INTEGRATED CONTROL SYSTEM : System Di-	
·		agram	
INTAKE VALVE TIMING CONTROL	. 56	INTEGRATED CONTROL SYSTEM: System De-	-
INTAKE VALVE TIMING CONTROL : System Di-	50	scription	68
agramINTAKE VALVE TIMING CONTROL : System De-	. 56	CAN COMMUNICATION	60
scription	. 56	CAN COMMUNICATION : System Description	
EXHAUST VALVE TIMING CONTROLEXHAUST VALVE TIMING CONTROL : System	. 57	OPERATION	70
Diagram	57	AUTOMATIC SPEED CONTROL DEVICE (ASCD).	70
EXHAUST VALVE TIMING CONTROL : System		AUTOMATIC SPEED CONTROL DEVICE (AS-	
Description	. 57	CD) : Switch Name and Function	70
TURBOCHARGER BOOST CONTROL	58	ON BOARD DIAGNOSTIC (OBD) SYSTEM	72
TURBOCHARGER BOOST CONTROL : System	. 00	Diagnosis Description	72
Diagram	. 59	GST (Generic Scan Tool)	72
TURBOCHARGER BOOST CONTROL : System		DIAGNOSIS SYSTEM (ECM)	73
Description	. 59	DIAGNOSIS STOTEM (LOM)	/3
ENGINE PROTECTION CONTROL AT LOW EN-		DIAGNOSIS DESCRIPTION	73
GINE OIL PRESSURE	. 60	DIAGNOSIS DESCRIPTION : 1st Trip Detection	70
ENGINE PROTECTION CONTROL AT LOW EN-		Logic and Two Trip Detection Logic DIAGNOSIS DESCRIPTION: DTC and Freeze	/3
GINE OIL PRESSURE : System Diagram	. 60	Frame Data	73
ENGINE PROTECTION CONTROL AT LOW EN-		DIAGNOSIS DESCRIPTION : Counter System	
GINE OIL PRESSURE : System Description	. 60	DIAGNOSIS DESCRIPTION : Driving Pattern	
FUEL FILLER CAP WARNING SYSTEM	. 61	DIAGNOSIS DESCRIPTION : System Readiness	
FUEL FILLER CAP WARNING SYSTEM:		Test (SRT) Code	78
System Diagram	. 61	DIAGNOSIS DESCRIPTION : Permanent Diag-	
FUEL FILLER CAP WARNING SYSTEM: System		nostic Trouble Code (Permanent DTC)	
Description	. 61	DIAGNOSIS DESCRIPTION : Malfunction Indica-	
AIR CONDITIONING CUT CONTROL	. 62	tor Lamp (MIL) On Board Diagnosis Function	
AIR CONDITIONING CUT CONTROL: System		CONSULT Function	
Diagram	. 62		
AIR CONDITIONING CUT CONTROL : System		ECU DIAGNOSIS INFORMATION	94
Description	. 62	ECM	0.4
COOLING FAN CONTROL	. 63	Reference Value	
COOLING FAN CONTROL : System Diagram		Fail Safe	
COOLING FAN CONTROL : System Description		DTC Inspection Priority Chart	
STARTER MOTOR DRIVE CONTROL	64	DTC Index	. 113
STARTER MOTOR DRIVE CONTROLSTARTER MOTOR DRIVE CONTROL : System	. 04	Test Value and Test Limit	. 118
Diagram	. 64	WIRING DIAGRAM	400
STARTER MOTOR DRIVE CONTROL : System		WIKING DIAGRAW	. 126
Description	. 64	ENGINE CONTROL SYSTEM	.126
		Wiring Diagram	. 126

BASIC INSPECTION144	POWER SUPPLY AND GROUND CIRCUIT 183
	Diagnosis Procedure183
DIAGNOSIS AND REPAIR WORKFLOW144	U0100 DRIVETRAIN CAN COMMUNICATION
Work Flow144 Diagnostic Work Sheet147	(ECM) 407
Diagnostic Work Sheet147	DTC Description
BASIC INSPECTION149	Diagnosis Procedure187
Work Procedure149	•
	U0101 CAN COMM CIRCUIT189
ADDITIONAL SERVICE WHEN REPLACING	Description189
ECM153	DTC Logic189
Description153	Diagnosis Procedure189
Work Procedure153	U0122 VEHICLE DYNAMICS CONTROL
VIN REGISTRATION155	
Description	MODULE190 Description 190
Work Procedure	Description
Work recoddio	DTC Logic190 Diagnosis Procedure190
ACCELERATOR PEDAL RELEASED POSI-	
TION LEARNING156	U1001 CAN COMM CIRCUIT191
Description156	Description191
Work Procedure156	DTC Logic191
TUDOTTI E VALVE CI OCED DOCITION	Diagnosis Procedure191
THROTTLE VALVE CLOSED POSITION	DOOAA IVT OONTDOL
LEARNING	P0011 IVT CONTROL192
Description	DTC Logic192
Work Procedure157	Diagnosis Procedure
IDLE AIR VOLUME LEARNING158	Component Inspection194
Description158	P0014 EVT CONTROL195
Work Procedure158	DTC Logic195
	Diagnosis Procedure196
G SENSOR CALIBRATION160	Component Inspection197
Description160	
Work Procedure160	P0030, P0031, P0032 A/F SENSOR 1 HEAT-
MIXTURE RATIO SELF-LEARNING VALUE	ER
CLEAR161	DTC Logic199
Description	Diagnosis Procedure199
Work Procedure	Component Inspection200
Work recoddio	P0037, P0038 HO2S2 HEATER202
FUEL PRESSURE162	DTC Logic202
Work Procedure162	Diagnosis Procedure 202
HOW TO SET SET CODE	Component Inspection203
HOW TO SET SRT CODE164	
Description	P0045, P0047, P0048 TC BOOST CONTROL
SRT Set Driving Pattern	SOLENOID VALVE205
Work Flocedule107	DTC Logic205
HOW TO ERASE PERMANENT DTC170	Diagnosis Procedure205
Description170	Component Inspection206
Work Procedure (Group A)171	P0075 IVT CONTROL SOLENOID VALVE 207
Work Procedure (Group B)173	DTC Logic207
DTC/CIDCUIT DIACNOSIS	Diagnosis Procedure207
DTC/CIRCUIT DIAGNOSIS176	Component Inspection208
TROUBLE DIAGNOSIS - SPECIFICATION	
VALUE176	P0078 EVT CONTROL SOLENOID VALVE 210
Description	DTC Logic210
Component Function Check	Diagnosis Procedure210
Diagnosis Procedure	Component Inspection211
<u> </u>	

P0087 FRP CONTROL SYSTEM	213	P011C IAT SENSOR	247
DTC Logic		DTC Logic	
Diagnosis Procedure	214	Diagnosis Procedure	247
Component Inspection (High Pressure Fuel		Component Inspection (Intake Air Temperature	
Pump)	214	Sensor 1)	. 248
DOOG EDD CONTDOL SYSTEM	040	Component Inspection (Intake Air Temperature	
P0088 FRP CONTROL SYSTEM		Sensor 2)	. 248
DTC Logic Diagnosis Procedure		D0122 D0123 TD SENSOD	240
Component Inspection (High Pressure Fuel	210	P0122, P0123 TP SENSOR	
Pump)	217	Diagnosis Procedure	
• *		Component Inspection	
P0090 HIGH PRESSURE FUEL PUMP	218	Component mopositori	. 200
DTC Logic		P0125 ECT SENSOR	252
Diagnosis Procedure	218	DTC Logic	
Component Inspection (High Pressure Fuel		Diagnosis Procedure	
Pump)	221	Component Inspection	253
P0096 IAT SENSOR 2	223	P0127 IAT SENSOR	254
DTC Logic		DTC Logic	
Component Function Check		Diagnosis Procedure	
Diagnosis Procedure		Component Inspection	
Component Inspection			
		P0128 THERMOSTAT FUNCTION	
P0097, P0098 IAT SENSOR 2		DTC Logic	
DTC Logic		Diagnosis Procedure	
Diagnosis Procedure		Component Inspection	257
Component Inspection	227	P0130 A/F SENSOR 1	250
P0101 MAF SENSOR	229	DTC Logic	
DTC Logic		Component Function Check	
Diagnosis Procedure		Diagnosis Procedure	
Component Inspection			
·		P0131 A/F SENSOR 1	
P0102, P0103 MAF SENSOR		DTC Logic	
DTC Logic		Diagnosis Procedure	. 264
Diagnosis Procedure		P0132 A/F SENSOR 1	266
Component Inspection	236	DTC Logic	
P0111 IAT SENSOR 1	239	Diagnosis Procedure	
DTC Logic		Diagnosis i recours i i i i i i i i i i i i i i i i i i i	
Component Function Check		P0137 HO2S2	269
Diagnosis Procedure		DTC Logic	
Component Inspection		Component Function Check	
		Diagnosis Procedure	
P0112, P0113 IAT SENSOR 1		Component Inspection	272
DTC Logic		P0138 HO2S2	275
Diagnosis Procedure		DTC Logic	
Component Inspection	242	Component Function Check	
P0116 ECT SENSOR	243	Diagnosis Procedure	
DTC Logic		Component Inspection	
Component Function Check		·	
Diagnosis Procedure		P0139 HO2S2	
Component Inspection		DTC Logic	
D0447 D0440 FOT OFNOOD	- : -	Component Function Check	
P0117, P0118 ECT SENSOR		Diagnosis Procedure	
DTC Logic		Component Inspection	. 286
Diagnosis Procedure		P014C, P014D, P015A, P015B A/F SENSOR	
Component Inspection	∠4b	1	
			-

DTC Logic288	DTC Logic	328
Diagnosis Procedure290	Diagnosis Procedure	
· ·	Component Inspection	
P0171 FUEL INJECTION SYSTEM FUNC-	·	_
TION293	P0300, P0301, P0302, P0303, P0304 MIS-	204
DTC Logic293	FIRE	. 331
Diagnosis Procedure294	DTC Logic	331
DO470 FUEL IN IECTION OVETEM FUNC	Diagnosis Procedure	332
P0172 FUEL INJECTION SYSTEM FUNC-	D0207 D0200 VC	
TION297	P0327, P0328 KS	
DTC Logic297	DTC Logic	
Diagnosis Procedure298	Diagnosis Procedure	
P0181 FTT SENSOR301	Component Inspection	338
DTC Logic	P0335 CKP SENSOR (POS)	. 339
Component Function Check	DTC Logic	
Diagnosis Procedure303	Diagnosis Procedure	
Component Inspection	Component Inspection	
Component inspection	Component moposion	
P0182, P0183 FTT SENSOR305	P0340 CMP SENSOR (PHASE)	. 342
DTC Logic305	DTC Logic	342
Diagnosis Procedure305	Diagnosis Procedure	
Component Inspection306	Component Inspection	344
DOLOG DOLOG DOLOG DD OFWOOD	DO 400 TUDEE WAY OATAL VOT EUNOTION	
P0190, P0192, P0193 FRP SENSOR308	P0420 THREE WAY CATALYST FUNCTION	
DTC Logic	DTC Logic	
Diagnosis Procedure	Component Function Check	
Component Inspection310	Diagnosis Procedure	348
P0196 EOT SENSOR312	P0441 EVAP CONTROL SYSTEM	351
DTC Logic	DTC Logic	
Component Function Check	Component Function Check	
Diagnosis Procedure314	Diagnosis Procedure	
Component Inspection	Diagnosis i roccadic	
Component inspection	P0443 EVAP CANISTER PURGE VOLUME	
P0197, P0198 EOT SENSOR316	CONTROL SOLENOID VALVE	. 356
DTC Logic316	DTC Logic	356
Diagnosis Procedure316	Diagnosis Procedure	357
Component Inspection317	Component Inspection	
·	·	
P0201, P0202, P0203, P0204 FUEL INJEC-	P0444, P0445 EVAP CANISTER PURGE	
TOR318	VOLUME CONTROL SOLENOID VALVE	
DTC Logic318	DTC Logic	
Diagnosis Procedure318	Diagnosis Procedure	
P0222, P0223 TP SENSOR319	Component Inspection	362
•	P0447 EVAP CANISTER VENT CONTROL	
DTC Logic		204
Diagnosis Procedure	VALVE	
Component Inspection321	DTC Logic	
P0234 TC SYSTEM322	Diagnosis Procedure	
DTC Logic	Component Inspection	366
Component Function Check	P0448 EVAP CANISTER VENT CONTROL	
Diagnosis Procedure	VALVE	368
2.ag.100.01 1000aa10		
P0235 TC BOOST SENSOR325	DTC Logic	
DTC Logic325	Diagnosis Procedure	
Diagnosis Procedure325	Component Inspection	3/0
Component Inspection	P0451 EVAP CONTROL SYSTEM PRES-	
	SURE SENSOR	372
P0237, P0238 TC BOOST SENSOR328		
	DTC Logic	312

Diagnosis Procedure373	P050A, P050E COLD START CONTROL	402
Component Inspection375	Description	
DO 450 EVAD CONTROL OVOTEM BREO	DTC Logic	402
P0452 EVAP CONTROL SYSTEM PRES-	Diagnosis Procedure	
SURE SENSOR		
DTC Logic376	P0520 EOP SENSOR	
Diagnosis Procedure377	DTC Logic	
Component Inspection378	Diagnosis Procedure	
P0453 EVAP CONTROL SYSTEM PRES-	Component Inspection	406
SURE SENSOR	P0524 ENGINE OIL PRESSURE	408
DTC Logic	DTC Logic	
Diagnosis Procedure380	Diagnosis Procedure	
Component Inspection382	Component Inspection	
Component inspection	Component inspection	+10
P0456 EVAP CONTROL SYSTEM 383	P0603 ECM	411
DTC Logic383	DTC Logic	
Diagnosis Procedure384	Diagnosis Procedure	411
Component Inspection388	P0604 ECM	440
DOACO FUEL LEVEL CENCOD		
P0460 FUEL LEVEL SENSOR	DTC Logic	
DTC Logic	Diagnosis Procedure	412
Diagnosis Procedure389	P0605 ECM	413
P0461 FUEL LEVEL SENSOR 390	DTC Logic	413
DTC Logic390	Diagnosis Procedure	
Component Function Check390		
Diagnosis Procedure391	P0606 ECM	
DO 400 DO 400 ELIEL LEVEL OF NOOD	DTC Logic	
P0462, P0463 FUEL LEVEL SENSOR 392	Diagnosis Procedure	414
DTC Logic	P0607 ECM	415
Diagnosis Procedure392	DTC Logic	
P0500 VSS 393	Diagnosis Procedure	
	DOGG A FOLA	
EXCEPT FOR M/T MODELS	P060A ECM	
EXCEPT FOR M/T MODELS: Description393	DTC Logic	
EXCEPT FOR M/T MODELS : DTC Logic393 EXCEPT FOR M/T MODELS : Diagnosis Proce-	Diagnosis Procedure	416
dure393	P060B ECM	417
dule333	DTC Logic	
M/T MODELS394	Diagnosis Procedure	
M/T MODELS : Description394	-	
M/T MODELS : DTC Logic394	P0611 ECM PROTECTION	
M/T MODELS : Component Function Check395	Description	
M/T MODELS : Diagnosis Procedure396	DTC Logic	
P0501, P2159 VEHICLE SPEED SENSOR 397	Diagnosis Procedure	418
Description397	P062B ECM	419
DTC Logic	Description	
Diagnosis Procedure397	DTC Logic	
Diagnosis i Tocedure	Diagnosis Procedure	
P0506 ISC SYSTEM398		
Description398	P0643 SENSOR POWER SUPPLY	
DTC Logic398	DTC Logic	
Diagnosis Procedure398	Diagnosis Procedure	420
P0507 ISC SYSTEM400	P0850 PNP SWITCH	422
Description400	Description	
DTC Logic400	DTC Logic	
Diagnosis Procedure400	Component Function Check	423
	Diagnosis Procedure	423

P1078 EVT CONTROL POSITION SENSOR 426	DTC Logic456
DTC Logic426	Diagnosis Procedure457
Diagnosis Procedure426	Component Inspection458
Component Inspection428	
D4440 CLOSED LOOD CONTROL	
P1148 CLOSED LOOP CONTROL430	DTC Logic459
DTC Logic	
Diagnosis Procedure430	Component inspection461
P1197 OUT OF GAS431	
Description431	
DTC Logic431	
Diagnosis Procedure431	
	Component Inspection464
P119A, P119B FUEL RAIL PRESSURE SEN-	DAGES DAGES DATTEDY TEMPEDATURE
SOR433	
DTC Logic	
Diagnosis Procedure434	D'accessia Decembra
P119C FUEL RAIL PRESSURE SENSOR438	Diagnosis Procedure
DTC Logic438	
Diagnosis Procedure439	
Diagnosis i roccaure	DTC Logic468
P1212 TCS COMMUNICATION LINE442	Diagnosis Procedure468
Description442	Component Inspection470
DTC Logic442	
Diagnosis Procedure442	P1572 BRAKE PEDAL POSITION SWITCH 471
DAGAZ ENGINE OVER TEMPERATURE	DTC Logic471
P1217 ENGINE OVER TEMPERATURE 443	Diagnosis i roccaire
DTC Logic443	Component moposition (Brane redain content
Component Function Check	
Diagnosis Procedure444	Component Inspection (Stop Lamp Switch)475
P1225 TP SENSOR446	P1574 ASCD VEHICLE SPEED SENSOR 476
DTC Logic446	
Diagnosis Procedure446	DTC Logic 476
DAGGO TO GENICOD	Diagnosis Procedure 476
P1226 TP SENSOR447	,
DTC Logic447	
Diagnosis Procedure447	D 10 Logio
P1423, P1424 COLD START CONTROL 448	Diagnosis Procedure478
Description448	
DTC Logic448	1 1007,1 1000,1 1000 0 02110011 11111111111111
Diagnosis Procedure448	7 DTG LOGIC479
	Component Inspection 481
P1451 PRESSURE SENSOR450	
DTC Logic450	P159B G SENSOR483
Diagnosis Procedure450	_ : 0 _0g.0
Component Inspection (EVAP Control System	Diagnosis Procedure484
Pressure Sensor)451	Component Inspection486
Component Inspection (Turbocharger Boost Sen-	P1650 STARTER MOTOR RELAY 2 488
sor)451	
P1550 BATTERY CURRENT SENSOR453	Description
DTC Logic453	D 1 0 20910
Diagnosis Procedure453	
Component Inspection455	D/AT/ ATABET 11ATAB DEL AN/
·	Description491
P1551, P1552 BATTERY CURRENT SEN-	DTC Logic491
SOR456	Diagnosis Procedure492

P1652 STARTER MOTOR SYSTEM COM	M . 493	DTC Logic	. 525
Description		Component Function Check	. 525
DTC Logic		Diagnosis Procedure	. 526
Diagnosis Procedure		Component Inspection (Turbocharger Boost Con)-
•		trol Solenoid Valve)	. 528
P1805 BRAKE SWITCH		Component Inspection (Turbocharger Boost Sen) -
DTC Logic		sor)	. 528
Diagnosis Procedure		5U51 IN 150705	
Component Inspection (Stop Lamp Switch)	496	FUEL INJECTOR	
P2096, P2097 A/F SENSOR 1	407	Component Function Check	
· · · · · · · · · · · · · · · · · · ·		Diagnosis Procedure	
DTC Logic		Component Inspection (Fuel Injector)	
Diagnosis Procedure	497	Component Inspection (Fuel Injector Relay)	. 532
P2100, P2103 THROTTLE CONTROL MO) _	LOW PRESSURE FUEL PUMP	534
TOR RELAY		Component Function Check	
DTC Logic		Diagnosis Procedure	
Diagnosis Procedure		Component Inspection	
-			
P2101 ELECTRIC THROTTLE CONTROL		HIGH PRESSURE FUEL PUMP	
FUNCTION		Component Function Check	
DTC Logic		Diagnosis Procedure	. 537
Diagnosis Procedure		Component Inspection (High Pressure Fuel	
Component Inspection	505	Pump)	
P2118 THROTTLE CONTROL MOTOR	FOC	Component Inspection (High Pressure Fuel Pump	
DTC Logic		Relay)	. 541
Diagnosis Procedure		IGNITION SIGNAL	542
Component Inspection		Component Function Check	
Component inspection	507	Diagnosis Procedure	
P2119 ELECTRIC THROTTLE CONTROL		Component Inspection (Ignition Coil with Power	. 542
ACTUATOR	508	Transistor)	544
DTC Logic		Component Inspection (Condenser)	
Diagnosis Procedure		Component mopositori (Condendor)	. 0 .0
•		ELECTRICAL LOAD SIGNAL	546
P2122, P2123 APP SENSOR		Description	. 546
DTC Logic		Component Function Check	. 546
Diagnosis Procedure		Diagnosis Procedure	. 546
Component Inspection	511	0001 NO FAN	
D2427 D2420 ADD SENSOD	E40	COOLING FAN	
P2127, P2128 APP SENSOR		Component Function Check	
DTC Logic		Diagnosis Procedure	
Diagnosis Procedure		Component Inspection (Cooling Fan Motor)	
Component Inspection	515	Component Inspection (Cooling Fan Relay)	550
P2135 TP SENSOR	516	ON BOARD REFUELING VAPOR RECOV-	
DTC Logic	516	ERY (ORVR)	551
Diagnosis Procedure		Component Function Check	
Component Inspection		Diagnosis Procedure	
•		Component Inspection (Refueling EVAP vapor cu	
P2138 APP SENSOR		valve)	
DTC Logic		Component Inspection (Drain filter)	
Diagnosis Procedure		Component mopositor (Brain inter)	. 000
Component Inspection	521	REFRIGERANT PRESSURE SENSOR	
P2162 VEHICLE SPEED SENSOR	522	Component Function Check	. 556
Description		Diagnosis Procedure	. 556
DTC Logic		DRAKE DEDAL BOOKTION OWNTON	
Diagnosis Procedure		BRAKE PEDAL POSITION SWITCH	
Diagnosis i locedule	5∠3	Component Function Check	
P2263 TC SYSTEM	525	Diagnosis Procedure	. 558

Component Inspection (Brake Pedal Position Switch)5	Mass Air Flow Sensor579 MR EXCEPT FOR NISMO RS MODELS
CLUTCH PEDAL POSITION SWITCH5	660 PRECAUTION580 ■
Component Function Check5	60
Diagnosis Procedure5	
Component Inspection5	
	(SRS) "AIR BAG" and "SEAT BELT PRE-TEN-
INFORMATION DISPLAY (ASCD)5	662 SIONER"580
Component Function Check5	Precaution for Procedure without Cowl Top Cover. 580
Diagnosis Procedure5	Precautions For Xenon Headlamp Service580
MALEUNOTION INDICATOR LAMP	Draggistians for Domesian Dotton: Torminal 504
MALFUNCTION INDICATOR LAMP5	On Board Diagnostic (ORD) System of Engine
Component Function Check5	and CVT
Diagnosis Procedure5	General Precautions582
SYMPTOM DIAGNOSIS5	
ENGINE CONTROL SYSTEM5	PREPARATION 585
Symptom Table5	Special Service Tools585
ASCD TEMPORARY RELEASE CANNOT BE	Commercial Service Tools586
PERFORMED BY THE CLUTCH PEDAL5 Diagnosis Procedure5	SYSTEM DESCRIPTION 588
INFORMATION DISPLAY IS MALFUNCTION-	COMPONENT PARTS588
ING5	
Diagnosis Procedure5	
NORMAL OPERATING CONDITION	Component Parts Location588
NORMAL OPERATING CONDITION5	ENGINE CONTROL STOTEM. COMBONEILDE
Description5	scription592
PERIODIC MAINTENANCE5	FO.4
FERIODIC MAINTENANCE	Accelerator Pedal Position Sensor594
IDLE SPEED5	Electric Throttle Control Actuator594
Inspection5	Land Carlo C
110p00t011	Fuel Injector596
IGNITION TIMING5	High Pressure Fuel Pump596
Inspection5	
·	Low Pressure Fuel Pump597
EVAPORATIVE EMISSION SYSTEM5	Mass Air Flow Sensor (With Intake Air Tempera-
Inspection5	ture Sensor 1)597
EVAD LEAK CHECK	Turbookargar
EVAP LEAK CHECK5	Turbocharger Boost Sensor (With Intake Air Tem-
Inspection5	perature Sensor 2)598
POSITIVE CRANKCASE VENTILATION5	1
Inspection5	For the Oralle of Tours and the Oralle of
	Engine Coolant Temperature Sensor 2600
REMOVAL AND INSTALLATION5	
	Crankshaft Position Sensor (POS)601
ECM5	Camshaft Position Sensor (PHASE)601
Removal and Installation5	Intake Valve Timing Control Solenoid Valve601
	Intake Valve Timing Intermediate Lock Control
SERVICE DATA AND SPECIFICATIONS	Solenoid Valve601
(SDS)5	Exhaust Valve Timing Control Position Sensor602
	Exhaust Valve Timing Control Solenoid Valve602
SERVICE DATA AND SPECIFICATIONS	Intake Manifold Runner Control Valve602
(SDS)5	EGR Volume Control Valve602
Idle Speed5	
Ignition Timing5	
Calculated Load Value5	770
	G Sensor603

Air Fuel Ratio (A/F) Sensor 1603	INTAKE VALVE TIMING CONTROL62	<u></u>
Heated Oxygen Sensor 2604		
Knock Sensor605		27
Engine Oil Pressure Sensor605		
Engine Oil Pressure Control Solenoid Valve605		28
Engine Oil Temperature Sensor605		30
Cooling Fan606	EXHAUST VALVE TIMING CONTROL : System	30
EVAP Canister Purge Volume Control Solenoid	Diagram	3በ
Valve	EVIJALIOT VALVE TIMINIO CONTROLLO COLO	00
EVAP Cantal System Pressure Sames	Description	31
EVAP Control System Pressure Sensor607 Battery Current Sensor (With Battery Tempera-		
ture Sensor)607	INTAKE MANIFOLD RUNNER CONTROL 63	31
Malfunction Indicator lamp (MIL)608	INTAKE MAIN SED KONNEK SONTKSE : Sys	
Oil Pressure Warning Lamp608		32
Refrigerant Pressure Sensor608		32
Manifold Absolute Pressure Sensor608		-
Stop Lamp Switch & Brake Pedal Position Switch.609	•	32
Clutch Interlock Switch609		
Clutch Pedal Position Switch609		32
ASCD Steering Switch609		
Information Display609	ENGINE PROTECTION CONTROL AT LOW EN-	
STRUCTURE AND ORERATION	GINE OIL PRESSURE	33
STRUCTURE AND OPERATION 610		റാ
Positive Crankcase Ventilation	ENGINE PROTECTION CONTROL AT LOW EN-	33
On Board Refueling Vapor Recovery (ORVR)611	GINE OIL PRESSURE : System Description 63	22
SYSTEM 612	GIVE GIET REGOORE : Gystein beschption of	55
	AIR CONDITIONING CUT CONTROL63	33
ENGINE CONTROL SYSTEM612	AIR CONDITIONING COT CONTROL : Cystem	
ENGINE CONTROL SYSTEM: System Diagram.612	= 1.5 g. c	34
ENGINE CONTROL SYSTEM : System Descrip-	AIR CONDITIONING CUT CONTROL : System	
tion612 ENGINE CONTROL SYSTEM: Integrated Engine	Description63	34
Control613	COOLING FAN CONTROL63	35
ENGINE CONTROL SYSTEM : Fail Safe614		
ENGINE CONTINUE CHOILM . Fair Gaic	COOLING FAN CONTROL: System Description. 63	
DIRECT INJECTION GASOLINE SYSTEM618	·	
DIRECT INJECTION GASOLINE SYSTEM:	THERMAL MANAGEMENT CONTROL	36
System Diagram619		~~
DIRECT INJECTION GASOLINE SYSTEM: Sys-	Description63	36
tem Description619	STARTER MOTOR DRIVE CONTROL 63	37
FUEL PRESSURE CONTROL622	STARTER MOTOR DRIVE CONTROL: System	
FUEL PRESSURE CONTROL: System Diagram	Diagram63	38
622		
FUEL PRESSURE CONTROL: System Descrip-	Description63	38
tion622	EVAPORATIVE EMISSION SYSTEM6	20
ENGINE OIL PRESSURE CONTROL SYSTEM623		30
ENGINE OIL PRESSURE CONTROL SYSTEM623 ENGINE OIL PRESSURE CONTROL SYSTEM :	Diagram60	วด
System Description624		55
Oystern Description024	Description	39
ELECTRIC IGNITION SYSTEM624	·	. •
ELECTRIC IGNITION SYSTEM:	ALTERNATOR POWER GENERATION VOLT-	
System Diagram625	AGE VARIABLE CONTROL SYSTEM64	40
ELECTRIC IGNITION SYSTEM : System De-	ALTERNATOR POWER GENERATION VOLT-	
scription625	AGE VARIABLE CONTROL SYSTEM : System	40
EGR SYSTEM626	Description64	ΉU
EGR SYSTEM : System Description626		40

FUEL FILLER CAP WARNING SYSTEM:	DIAGNOSIS AND REPAIR WORKFLOW 728
System Diagram641	Work Flow728
FUEL FILLER CAP WARNING SYSTEM: System	Diagnostic Work Sheet731
Description641	CERVICE AFTER REDI ACING OR REMOV
AUTOMATIC SPEED CONTROL DEVICE (ASCD). 642	SERVICE AFTER REPLACING OR REMOV-
AUTOMATIC SPEED CONTROL DEVICE (ASCD): 642 AUTOMATIC SPEED CONTROL DEVICE (ASC	ING ENGINE PARTS733
·	Description733
CD): System Diagram642	ADDITIONAL SERVICE WHEN REPLACING
AUTOMATIC SPEED CONTROL DEVICE (AS-	
CD) : System Description642	ECM734
INTEGRATED CONTROL SYSTEM642	Description734
INTEGRATED CONTROL SYSTEM : System Di-	Work Procedure734
agram	VIN REGISTRATION737
INTEGRATED CONTROL SYSTEM: System De-	
scription	Description
301ption043	Work Procedure737
CAN COMMUNICATION644	ACCELERATOR PEDAL RELEASED POSI-
CAN COMMUNICATION: System Description 644	TION LEARNING738
OPERATION645	Description
AUTOMATIC OPER CONTROL DEVICE (ACCR) ave	Work Procedure738
AUTOMATIC SPEED CONTROL DEVICE (ASCD). 645	THROTTLE VALVE CLOSED POSITION
AUTOMATIC SPEED CONTROL DEVICE (AS-	LEARNING739
CD): Switch Name and Function645	Description739
ON BOARD DIAGNOSTIC (OBD) SYSTEM 647	Work Procedure739
Diagnosis Description647	Work Procedure739
Diagnosis Description647	WASTEGATE VALVE CLOSED POSITION
DIAGNOSIS SYSTEM (ECM)648	LEARNING740
()	Description740
DIAGNOSIS DESCRIPTION648	Work Procedure740
DIAGNOSIS DESCRIPTION: 1st Trip Detection	740
Logic and Two Trip Detection Logic648	VALVE TIMING OFFSET DATA CLEAR 741
DIAGNOSIS DESCRIPTION: DTC and Freeze	Description741
Frame Data648	Work Procedure741
DIAGNOSIS DESCRIPTION: Counter System 649	
DIAGNOSIS DESCRIPTION : Driving Pattern 652	VALVE TIMING OFFSET DATA WRITING 742
DIAGNOSIS DESCRIPTION: System Readiness	Description742
Test (SRT) Code653	Work Procedure742
DIAGNOSIS DESCRIPTION : Permanent Diag-	
nostic Trouble Code (Permanent DTC)654	IDLE AIR VOLUME LEARNING743
DIAGNOSIS DESCRIPTION : Malfunction Indica-	Description743
tor Lamp (MIL)655	Work Procedure743
On Board Diagnosis Function655	AID FUEL DATIO INITIAL LEADNING
CONSULT Function	AIR FUEL RATIO INITIAL LEARNING745
001100E11 dilottoi1	Description745
ECU DIAGNOSIS INFORMATION 668	Work Procedure745
	MIXTURE RATIO SELF-LEARNING VALUE
ECM668	CLEAR747
Reference Value668	
Fail Safe688	Description747 Work Procedure747
DTC Inspection Priority Chart692	Work Procedure147
DTC Index694	G SENSOR CALIBRATION748
Test Value and Test Limit700	Description748
WIDING DIAGDASS	Work Procedure748
WIRING DIAGRAM708	
ENGINE CONTROL SYSTEM708	CUMULATIVE BATTERY DISCHARGE CUR-
	RENT CLEAR749
Wiring Diagram708	Description749
BASIC INSPECTION728	Work Procedure749
	•

BASIC INSPECTION	750	DTC Logic	793
Work Procedure		Diagnosis Procedure	
Work i rooddaro		Component Inspection	
ACCELERATOR PEDAL	754		
Work Procedure	754	P0046 WASTEGATE CONTROL MOTOR	
FUEL PRESSURE		DTC Logic	
FUEL PRESSURE		Diagnosis Procedure	
Work Procedure	756	Component Inspection (Electric Wastegate Cor	
HOW TO SET SRT CODE	758	trol Actuator)	797
Description		P0075 IVT CONTROL SOLENOID VALVE	700
SRT Set Driving Pattern		DTC Logic	
Work Procedure		Diagnosis Procedure	
		Component Inspection	
HOW TO ERASE PERMANENT DTC $$	764		
Description		P0078 EVT CONTROL SOLENOID VALVE	801
Work Procedure (Group A)		DTC Logic	801
Work Procedure (Group B)	767	Diagnosis Procedure	801
DTC/CIDCUIT DIA CNOSIS	770	Component Inspection	802
DTC/CIRCUIT DIAGNOSIS		DOOG EDD CONTDOL OVOTEM	
TROUBLE DIAGNOSIS - SPECIFICATION	ON	P0087 FRP CONTROL SYSTEM	
VALUE		DTC Logic	
Description		Diagnosis Procedure	805
Component Function Check		Component Inspection (High Pressure Fuel	
Diagnosis Procedure		Pump)	806
Diagnosis i roccairo		P0088 FRP CONTROL SYSTEM	808
POWER SUPPLY AND GROUND CIRC	UIT 777	DTC Logic	
Diagnosis Procedure	777	Diagnosis Procedure	
		Component Inspection (High Pressure Fuel	
U0101 CAN COMM CIRCUIT		Pump)	809
Description		• •	
DTC Logic		P0090 HIGH PRESSURE FUEL PUMP	811
Diagnosis Procedure	781	DTC Logic	811
U0122 VEHICLE DYNAMICS CONTROI		Diagnosis Procedure	811
MODULE		Component Inspection (High Pressure Fuel	
Description		Pump)	812
DTC Logic		P0096 IAT SENSOR 2	04.4
Diagnosis Procedure			
Diagnosis i roccaure		DTC Logic Component Function Check	
U1000 CAN COMM CIRCUIT	783	Diagnosis Procedure	
Description	783	Component Inspection	
DTC Logic	783	Component inspection	013
Diagnosis Procedure	783	P0097, P0098 IAT SENSOR 2	816
DOOAA IVE OONTDOI		DTC Logic	
P0011 IVT CONTROL		Diagnosis Procedure	
DTC Logic		Component Inspection	
Diagnosis Procedure			_
Component Inspection	786	P00B3, P00B4 ENGINE COOLANT TEMPE	
P0014 EVT CONTROL	787	ATURE SENSOR 2	
DTC Logic		DTC Logic	
Diagnosis Procedure		Diagnosis Procedure	
Component Inspection		Component Inspection (Engine Coolant Temper	
·		ture Sensor 2)	820
P0030, P0031, P0032 A/F SENSOR HEA	ATER. 790	P00C1, P00C2 TURBOCHARGER BYPASS	.
DTC Logic		CONTROL VALVE	
Diagnosis Procedure	790		
Component Inspection		DTC Logic	
PNN37 PNN38 HM2S2 HEATER	<u></u>	Diagnosis Procedure	821
PIIIIKA PIIIIKX HIJYSY HEATER	703		

Component Inspection (Turbocharger Bypass	P0125 ECT SENSOR	852
Control Valve)822	2 DTC Logic	852
DO404 MAE OFNOOD	Diagnosis Procedure	852
P0101 MAF SENSOR823	Component Inspection	
DTC Logic823	3	
Diagnosis Procedure823		
Component Inspection825	O	
P0102, P0103 MAF SENSOR828	Diagnosis Procedure	
		855
DTC Logic828 Diagnosis Procedure828		050
Component Inspection830		
P0106 TC BOOST SENSOR833	Component Function Check	
DTC Logic833	Diadriosis Procedure	857
Diagnosis Procedure833		860
Component Inspection834		
·	Diagnosis Procedure	
P010A MANIFOLD ABSOLUTE PRESSURE	Diagnosis i recours illinimini	
SENSOR836	P0132 A/F SENSOR 1	863
DTC Logic836		
Diagnosis Procedure836	Diagnosis Procedure	864
Component Inspection837	7	
	P0137 HO2S2	
P0111 IAT SENSOR 1839	3	
DTC Logic839		
Component Function Check840		
Diagnosis Procedure840	·	869
Component Inspection840	P0138 HO2S2	072
P0112, P0113 IAT SENSOR 1841		
DTC Logic841	<u> </u>	
Diagnosis Procedure841		
Component Inspection842		
Component inspection842	2 Component inspection	0//
P0116 ENGINE COOLANT TEMPERATURE	P0139 HO2S2	879
SENSOR 1843	B DTC Logic	879
DTC Logic843	<u> </u>	
Component Function Check844	•	
Diagnosis Procedure844		
Component Inspection844	 1	
	P014C, P014D, P015A, P015B A/F SENSO	R
P0117, P0118 ENGINE COOLANT TEMPER-	1	
ATURE SENSOR 1845	5 DTC Description	885
DTC Logic845	Diagnosis Procedure	887
Diagnosis Procedure845	DOLTA FUEL IN IECTION OVOTEM FUNO	
Component Inspection (Engine Coolant Tempera-	P0171 FUEL INJECTION SYSTEM FUNC-	
ture Sensor 1)846	TION	
, and the second se	DTC Logic	
P011C IAT SENSOR847	<u> </u>	891
DTC Logic847		
Diagnosis Procedure847		004
Component Inspection (Intake Air Temperature	TION	
Sensor 1)848		
Component Inspection (Intake Air Temperature	Diagnosis Procedure	895
Sensor 2)848	³ P0181 FTT SENSOR	808
D0122 D0123 TD SENSOD		
P0122, P0123 TP SENSOR849		
DTC Logic849		
Diagnosis Procedure 849		
Component Inspection850) component mobermon	50 1

P0182, P0183 FTT SENSOR	. 902	P0340 CMP SENSOR (PHASE)	937
DTC Logic		DTC Logic	
Diagnosis Procedure		Diagnosis Procedure	
Component Inspection		Component Inspection	
P0190, P0192, P0193 FRP SENSOR	. 904	P0365 EXHAUST VALVE TIMING CONTROL	_
DTC Logic	904	POSITION SENSOR	940
Diagnosis Procedure		DTC Description	940
Component Inspection	906	Diagnosis Procedure	
D0/00 F0T 0F1/00D		Component Inspection	943
P0196 EOT SENSOR			
DTC Logic		P0401, P0402 EGR SYSTEM	
Component Function Check		DTC Logic	
Diagnosis Procedure		Diagnosis Procedure	944
Component Inspection	909	P0404 EGR VOLUME CONTROL VALVE	946
P0197, P0198 EOT SENSOR	911	DTC Logic	
DTC Logic		Diagnosis Procedure	
Diagnosis Procedure		Component Inspection (EGR Volume Control	3-0
Component Inspection		Valve)	946
P0201, P0202, P0203, P0204 FUEL INJEC-		P0407, P0408 EGR PRESSURE SENSOR	
TOR	913	DTC Logic	
DTC Logic		Diagnosis Procedure	
Diagnosis Procedure		Component Inspection (EGR pressure sensor)	
P0222, P0223 TP SENSOR		P040B EGR TEMPERATURE SENSOR	
DTC Logic		DTC Logic	
Diagnosis Procedure		Diagnosis Procedure	
Component Inspection		Component Inspection (EGR Temperature Sen-	901
Component inspection	910	sor)	952
P0234 TC SYSTEM	. 917	301)	332
DTC Logic	917	P040C, P040D EGR GAS TEMPERATURE	
Component Function Check		SENSOR	954
Diagnosis Procedure		DTC Logic	954
		Diagnosis Procedure	
P0235 TC BOOST SENSOR		Component Inspection (EGR Temperature Sen-	
DTC Logic		sor)	956
Diagnosis Procedure		·	
Component Inspection	921	P0420 THREE WAY CATALYST FUNCTION	
P0237, P0238 TC BOOST SENSOR	923	DTC Logic	
DTC Logic		Component Function Check	
Diagnosis Procedure		Diagnosis Procedure	959
Component Inspection		P0441 EVAP CONTROL SYSTEM	962
Component mopositori		DTC Logic	
P0300, P0301, P0302, P0303, P0304 MIS-		Component Function Check	
FIRE	. 926	Diagnosis Procedure	
DTC Logic	926	Diagnosis i roccadro	50-
Diagnosis Procedure	927	P0443 EVAP CANISTER PURGE VOLUME	
D0007 D0000 KO		CONTROL SOLENOID VALVE	968
P0327, P0328 KS		DTC Logic	968
DTC Logic		Diagnosis Procedure	
Diagnosis Procedure		Component Inspection	971
Component Inspection	933	DOAAA DOAAE EVAD CANICTED BUDGE	
P0335 CKP SENSOR (POS)	. 934	P0444, P0445 EVAP CANISTER PURGE	
DTC Logic		VOLUME CONTROL SOLENOID VALVE	
Diagnosis Procedure		DTC Logic	
Component Inspection		Diagnosis Procedure	
1		Component Inspection	975

P0447 EVAP CANISTER VENT CONTROL	P0461 FUEL LEVEL SENSOR	1010
VALVE9	76 DTC Logic	1010
DTC Logic9		
Diagnosis Procedure9	76 Diagnosis Procedure	1011
Component Inspection9	77 P0462, P0463 FUEL LEVEL SENSOR	4040
P0448 EVAP CANISTER VENT CONTROL	DTC Logic	
VALVE9	3	
		1012
DTC Logic		1013
Diagnosis Procedure99 Component Inspection99		1013
Component inspection9	Diagnosis Procedure	1013
P044A, P044E EGR VOLUME CONTROL	Component Inspection (EGR pressure senso	r)1015
VALVE POSITION SENSOR9	84 - BOAGE BOAGG FOR BREGOURE OFNICE	
DTC Logic9	₈₄ PU46F, PU486 EGR PRESSURE SENSUR	
Diagnosis Procedure9		
Component Inspection (EGR Volume Control	Diagnosis Procedure	
Valve)9	Component Inspection	1017
P044B EXHAUST GAS RECIRCULATION	P0500 VSS	1018
SYSTEM9	87 EXCEPT FOR M/T MODELS	1018
DTC Logic9		
Diagnosis Procedure9		
Component Inspection (EGR Volume Control	EXCEPT FOR M/T MODELS : Diagnosis Pro	
Valve)9		
P044C, P044D EGR VOLUME CONTROL	M/T MODELS	4040
VALVE POSITION SENSOR9		
DTC Logic		
Diagnosis Procedure99 Component Inspection (EGR Volume Control	M/T MODELS : Diagnosis Procedure	
Valve)9	_	1021
vaive)	P0501, P2159 VEHICLE SPEED SENSOR	R1022
P0451 EVAP CONTROL SYSTEM PRES-	Description	
SURE SENSOR9		
DTC Logic99	Diagnosis Procedure	1022
Diagnosis Procedure9	94 P0506 ISC SYSTEM	4022
Component Inspection99	45	
DOAFO EVAD CONTDOL CVCTEM DDEC	Description	
P0452 EVAP CONTROL SYSTEM PRES-	DTC Logic 96 Diagnosis Procedure	
SURE SENSOR9	-	1023
DTC Logic99		1025
Diagnosis Procedure9	LIASCHIMIAN	
Component Inspection9	DTC Logic	1025
P0453 EVAP CONTROL SYSTEM PRES-	Diagnosis Procedure	
SURE SENSOR9	99 DOEGA BOEGE BOEGE COLD START COL	
DTC Logic9	PUSUA, PUSUB, PUSUE COLD START CO	
Diagnosis Procedure10	∩∩ INOL	
Component Inspection10	n2 Description	
·	DTC Logic	
P0456 EVAP CONTROL SYSTEM10		1028
DTC Logic10		1029
Diagnosis Procedure10	04 DTC Logic	
Component Inspection10	Diagnosis Procedure	
P0460 FUEL LEVEL SENSOR10		
DTC Logic10	00	
Diagnosis Procedure10	ng PU324 ENGINE OIL PRE33URE	
	DTC Logic	
	Diagnosis Procedure	1033

P052A, P052B INTAKE VALVE TIMING CON-	P062F CONTROL MODULE	1056
TROL1035	DTC Logic	1056
DTC Logic1035	Diagnosis Procedure	1056
Diagnosis Procedure1035		
Component Inspection (Intake Valve Timing Con-	P0643 SENSOR POWER SUPPLY	
trol Solenoid Valve)1037	Description	
Component Inspection (Intake Valve Timing Inter-	DTC Logic	
mediate Lock Control Solenoid Valve)1038	Diagnosis Procedure	1058
Component Inspection (Crankshaft Position sen-	P06DA, P06DB ENGINE OIL PRESSURE	
sor)1038	CONTROL SOLENOID VALVE	4000
Component Inspection (Camshaft position sen-		
sor)1039	DTC Logic Diagnosis Procedure	
DOE 44 DOE 45 EVILALIOT O A O TEMPED A	Component Inspection (Engine Oil Pressure C	
P0544, P0545 EXHAUST GAS TEMPERA-	trol Solenoid Valve)	
TURE SENSOR1041	tioi Soleriola valve)	1001
DTC Logic1041	P0850 PNP SWITCH	1062
Diagnosis Procedure1041	Description	
P0546 EXHAUST GAS TEMPERATURE	DTC Logic	
SENSOR1044	Component Function Check	
	Diagnosis Procedure	
DTC Logic1044 Diagnosis Procedure1045	-	
Diagnosis Procedure1045	P100C VALVE TIMING OFFSET DATA	
P0603 ECM1047	Description	
DTC Logic1047	DTC Logic	
Diagnosis Procedure1047	Diagnosis Procedure	1066
-	P1148 CLOSED LOOP CONTROL	1067
P0604 ECM1048	DTC Logic	
DTC Logic1048	DTO Logic	
Diagnosis Procedure1048	P1197 OUT OF GAS	1068
P0605 ECM1049	Description	1068
DTC Logic	DTC Logic	1068
Diagnosis Procedure1049	Diagnosis Procedure	1068
Diagnosis i Tocedure	DAAGA DAAGD FIJEL DAIL DDECCUDE CO	
P0606 ECM1050	P119A, P119B FUEL RAIL PRESSURE SE	
DTC Logic1050	SOR	
Diagnosis Procedure1050	DTC Logic	
D0007 F0M	Diagnosis Procedure	1071
P0607 ECM1051	P119C FUEL RAIL PRESSURE SENSOR	1074
DTC Logic	DTC Logic	
Diagnosis Procedure1051	Diagnosis Procedure	
P060A ECM1052	•	
DTC Logic1052	P1212 TCS COMMUNICATION LINE	
Diagnosis Procedure1052	Description	
-	DTC Logic	
P060B ECM1053	Diagnosis Procedure	1077
DTC Logic1053	P1217 ENGINE OVER TEMPERATURE	1070
Diagnosis Procedure1053	DTC Logic	
P0611 ECM PROTECTION1054	Component Function Check	
Description	Diagnosis Procedure	
DTC Logic	Diagnosis i 1000daro	
Diagnosis Procedure1054	P1225 TP SENSOR	1081
Diagnosis i 1000duit1004	DTC Logic	1081
P062B ECM1055	Diagnosis Procedure	1081
Description1055	D4226 TD SENSOR	4600
DTC Logic1055	P1226 TP SENSOR	
Diagnosis Procedure1055	DTC Logic Diagnosis Procedure	
	DIAUTUSIS FIUCEUUTE	มบหว

P1423, P1424 COLD START CONTROL1083	P159B G SENSOR1	113
Description1083	DTC Logic1	113
DTC Logic1083	Diagnosis Procedure1	113
Diagnosis Procedure1083	Component Inspection1	115
P1451 PRESSURE SENSOR1085	P159C, P159D G SENSOR1	117
DTC Logic1085	DTC Logic1	
Diagnosis Procedure1085	Diagnosis Procedure1	
Component Inspection (EVAP Control System	Component Inspection1	
Pressure Sensor)1086		
Component Inspection (Turbocharger Boost Sen-	P1805 BRAKE SWITCH1	121
sor)1086	DTC Logic1	121
501)1000	Diagnosis Procedure1	
P1550 BATTERY CURRENT SENSOR1088	Component Inspection (Stop Lamp Switch)1	
DTC Logic1088		
Diagnosis Procedure1088	P2004 INTAKE MANIFOLD RUNNER CON-	
Component Inspection1089	TROL VALVE1	123
Component mopeodori	DTC Logic1	
P1551, P1552 BATTERY CURRENT SEN-	Diagnosis Procedure1	
SOR1091	Component Inspection (Intake Manifold Runner	-
DTC Logic1091	Control Valve)1	124
Diagnosis Procedure1091		
Component Inspection1092	P2014, P2016, P2017, P2018 INTAKE MANI-	
Ouriporterit inspection1032	FOLD RUNNER CONTROL VALVE POSI-	
P1553 BATTERY CURRENT SENSOR1094	TION SENSOR1	126
DTC Logic1094	DTC Logic1	
Diagnosis Procedure1094	Diagnosis Procedure1	
Component Inspection1095	Diagnosis Procedure	120
Component inspection1035	P2081 EXHAUST GAS TEMPERATURE	
P1554 BATTERY CURRENT SENSOR1097	SENSOR1	120
DTC Logic1097		
Component Function Check1097	DTC Logic	
Diagnosis Procedure1098	Diagnosis Procedure1	130
Component Inspection1099	P2096, P2097 A/F SENSOR 1	122
Component inspection1099	DTC Logic	
P1556, P1557 BATTERY TEMPERATURE	Diagnosis Procedure1	
SENSOR1100	Diagnosis Procedure	132
DTC Logic1100	P2100, P2103 THROTTLE CONTROL MO-	
•	TOR RELAY1	126
Diagnosis Procedure		
Component Inspection1101	DTC Logic1	
P1564 ASCD STEERING SWITCH1102	Diagnosis Procedure1	136
DTC Logic1102	P2101 ELECTRIC THROTTLE CONTROL	
		420
Diagnosis Procedure	FUNCTION	
Component Inspection1104	DTC Logic1	
P1572 ASCD BRAKE SWITCH1105	Diagnosis Procedure1	
DTC Logic1105	Component Inspection1	140
Diagnosis Procedure1106	P2118 THROTTLE CONTROL MOTOR1	1.11
Component Inspection (Brake Pedal Position	DTC Logic	
Switch)	Diagnosis Procedure	
Component Inspection (Stop Lamp Switch)1109	Component Inspection1	142
P1574 ASCD VEHICLE SPEED SENSOR1110	P2119 ELECTRIC THROTTLE CONTROL	
Description1110	ACTUATOR1	143
DTC Logic1110	DTC Logic1	
Diagnosis Procedure1110	Diagnosis Procedure1	
-	3g	
P158A G SENSOR1112	P2122, P2123 APP SENSOR1	145
DTC Logic1112	DTC Logic1	
Diagnosis Procedure1112	Diagnosis Procedure1	

Component Inspection1146	Description117
DOMOT DOMOG ADD CENCOD	DTC Logic117
P2127, P2128 APP SENSOR1148	Diagnosis Procedure117
DTC Logic1148	DOGAG MUU TUWAY OONTDOL WALVE MO
Diagnosis Procedure1148	P26A3 MULTI-WAY CONTROL VALVE MO-
Component Inspection1149	TOR1176
D2125 TD SENSOD	DTC Logic1176
P2135 TP SENSOR1150	Diagnosis Procedure117
DTC Logic1150	Component Inspection (Multi-way Control Valve) 1179
Diagnosis Procedure1150	
Component Inspection1151	P26A5 MULTI-WAY CONTROL VALVE POSI-
P2138 APP SENSOR1153	TION SENSOR118
	DTC Logic118
DTC Logic	Diagnosis Procedure118
Diagnosis Procedure1153	Component Inspection (Multi-way Control Valve) 118
Component Inspection1155	
P2162 VEHICLE SPEED SENSOR1156	P26A6 P26A7 MULTI-WAY CONTROL
	VALVE POSITION SENSOR118
Description	DTC Logic118
DTC Logic	Diagnosis Procedure118
Diagnosis Procedure1156	Component Inspection (Multi-way Control Valve) 118
P2263 TC SYSTEM1158	
	P26AB MULTI-WAY CONTROL VALVE118
DTC Logic	DTC Logic118
Component Function Check	Diagnosis Procedure118
Diagnosis Procedure1159	Component Inspection118
Component Inspection (Turbocharger Bypass	
Control Valve)1162	BATTERY CURRENT SENSOR118
Component Inspection (Turbocharger Boost Sen-	Component Function Check118
sor)1162	Diagnosis Procedure118
P2413 EGR SYSTEM1163	Component Inspection119
DTC Logic	BRAKE PEDAL POSITION SWITCH119
Diagnosis Procedure1163	Component Function Check119
P2457 EGR COOLER1165	Diagnosis Procedure119
DTC Logic	Component Inspection (Brake Pedal Position
	Switch)119
Diagnosis Procedure1165	
P2562, P2566 WASTEGATE CONTROL	CLUTCH PEDAL POSITION SWITCH119
VALVE POSITION SENSOR1167	Component Function Check119
DTC Logic	Diagnosis Procedure119
	Component Inspection119
Diagnosis Procedure	00011110 5411
Component Inspection (Electric Wastegate Con-	COOLING FAN119
trol Actuator)1168	Component Function Check119
P2563 WASTEGATE CONTROL VALVE PO-	Diagnosis Procedure119
SITION SENSOR1170	Component Inspection (Cooling Fan Motor)119
	Component Inspection (Cooling Fan Relay)119
DTC Logic	
Diagnosis Procedure1170	ELECTRICAL LOAD SIGNAL119
Component Inspection (Electric Wastegate Con-	Description119
trol Actuator)1172	Component Function Check119
DOEGA DOEGE WASTEGATE CONTROL	Diagnosis Procedure119
P2564, P2565 WASTEGATE CONTROL	EVAD CANICTED DUDGE VOLUME CON
VALVE POSITION SENSOR1173	EVAP CANISTER PURGE VOLUME CON-
DTC Logic1173	TROL SOLENOID VALVE120
Diagnosis Procedure1173	Component Function Check120
Component Inspection (Electric Wastegate Con-	Diagnosis Procedure120
trol Actuator)1174	Component Inspection120
DOCAD FOM INTERNAL TIMES	
P2610 ECM INTERNAL TIMER1176	FUEL INJECTOR120

Component Function Check1203	Component Function Check1237
Diagnosis Procedure1203	Diagnosis Procedure1237
Component Inspection (Fuel Injector)1206	SENSOR POWER SUPPLY 2 CIRCUIT1239
Component Inspection (Fuel Injector Relay)1206	Description
G SENSOR1208	Diagnosis Procedure1239
Component Function Check1208	Diagnosis i Tocedure1259
Diagnosis Procedure1208	SYMPTOM DIAGNOSIS1241
Component Inspection1209	
	ENGINE CONTROL SYSTEM1241
HIGH PRESSURE FUEL PUMP1211	Symptom Table1241
Component Function Check1211	ASCD MAIN SWITCH DOES NOT TURN ON/
Diagnosis Procedure1211	OFF1246
Component Inspection (High Pressure Fuel	Diagnosis Procedure1246
Pump)1214	Diagnosis Flocedule1240
Component Inspection (High Pressure Fuel Pump	ASCD TEMPORARY RELEASE CANNOT BE
Relay)1215	PERFORMED BY THE CLUTCH PEDAL1247
HO2S21216	Diagnosis Procedure1247
Component Function Check1216	NODIAL ODEDATING CONDITION
Diagnosis Procedure1216	NORMAL OPERATING CONDITION1248
Component Inspection1218	Description1248
·	PERIODIC MAINTENANCE1249
HO2S2 HEATER1220	
Component Function Check1220	IDLE SPEED1249
Diagnosis Procedure1220	Inspection1249
Component Inspection1221	ICNITION TIMING
ON BOARD REFUELING VAPOR RECOV-	IGNITION TIMING1250
ERY (ORVR)1223	Inspection1250
Component Function Check1223	EVAPORATIVE EMISSION SYSTEM1251
Diagnosis Procedure1223	Inspection1251
Component Inspection (Refueling EVAP vapor cut	·
valve)1225	EVAP LEAK CHECK1252
Component Inspection (Drain filter)1227	Inspection1252
IGNITION SIGNAL1228	POSITIVE CRANKCASE VENTILATION1254
Component Function Check1228	Inspection1254
Diagnosis Procedure1228	·
Component Inspection (Ignition Coil with Power	REMOVAL AND INSTALLATION1255
Transistor)1230	ECM1255
Component Inspection (Condenser)1231	Removal and Installation1255
, ,	Nemoval and installation1255
INFORMATION DISPLAY (ASCD)1232	G SENSOR1256
Component Function Check1232	Exploded View1256
Diagnosis Procedure1232	Removal and Installation1256
LOW PRESSURE FUEL PUMP1233	Adjustment1256
Component Function Check1233	SERVICE DATA AND SPECIFICATIONS
Diagnosis Procedure1233	
Component Inspection (Low Pressure Fuel Pump)	(SDS)1257
1234	SERVICE DATA AND SPECIFICATIONS
MAI FUNCTION INDICATOR LAND	(SDS)1257
MALFUNCTION INDICATOR LAMP1236	Idle Speed1257
Component Function Check	Ignition Timing1257
Diagnosis Procedure1236	Calculated Load Value1257
REFRIGERANT PRESSURE SENSOR1237	Mass Air Flow Sensor1257

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

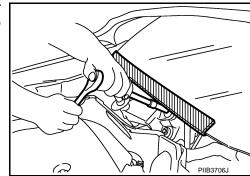
Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the
 ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with
 a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing
 serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution for Procedure without Cowl Top Cover

INFOID:0000000011461351

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



INFOID:0000000011461352

Precautions for Removing Battery Terminal

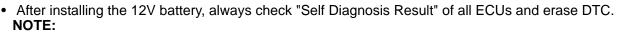
 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.
 NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



The removal of 12V battery may cause a DTC detection error.

On Board Diagnostic (OBD) System of Engine and CVT

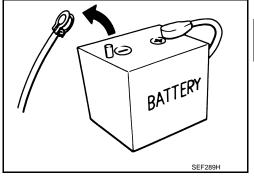
The ECM has an on board diagnostic system. It will light up the malfunction indicator lamp (MIL) to warn the driver of a malfunction causing emission deterioration.

CAUTION:

- Be sure to turn the ignition switch OFF and disconnect the negative battery cable before any repair
 or inspection work. The open/short circuit of related switches, sensors, solenoid valves, etc. will
 cause the MIL to light up.
- Be sure to connect and lock the connectors securely after work. A loose (unlocked) connector will
 cause the MIL to light up due to the open circuit. (Be sure the connector is free from water, grease,
 dirt, bent terminals, etc.)
- Certain systems and components, especially those related to OBD, may use a new style slide-locking type harness connector. For description and how to disconnect, refer to <u>PG-5</u>, "<u>Harness Connector</u>".
- Be sure to route and secure the harnesses properly after work. The interference of the harness with a bracket, etc. may cause the MIL to light up due to the short circuit.
- Be sure to connect rubber tubes properly after work. A misconnected or disconnected rubber tube
 may cause the MIL to light up due to the malfunction of the EVAP system or fuel injection system,
 etc.
- Be sure to erase the unnecessary malfunction information (repairs completed) from the ECM and TCM (Transmission control module) before returning the vehicle to the customer.

General Precautions

- Always use a 12 volt battery as power source.
- Do not attempt to disconnect battery cables while engine is running.
- Before connecting or disconnecting the ECM harness connector, turn ignition switch OFF and disconnect negative battery cable. Failure to do so may damage the ECM because battery voltage is applied to ECM even if ignition switch is turned OFF.
- Before removing parts, turn ignition switch OFF and then disconnect battery ground cable.



D

Е

Α

EC

INFOID:0000000011734222

G

-|

J

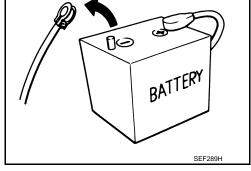
Κ

M

INFOID:0000000011734223

Ν

0



< PRECAUTION >

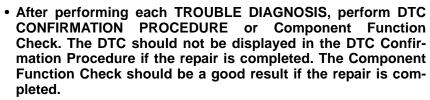
- · Do not disassemble ECM.
- If a battery cable is disconnected, the memory will return to the ECM value.

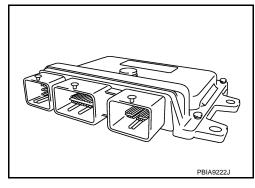
The ECM will now start to self-control at its initial value. Engine operation can vary slightly when the terminal is disconnected. However, this is not an indication of a malfunction. Do not replace parts because of a slight variation.

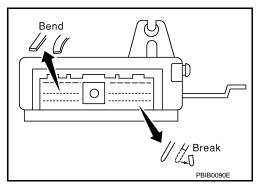
- If the battery is disconnected, the following emission-related diagnostic information will be lost within 24 hours.
- Diagnostic trouble codes
- 1st trip diagnostic trouble codes
- Freeze frame data
- 1st trip freeze frame data
- System readiness test (SRT) codes
- Test values
- When connecting or disconnecting pin connectors into or from ECM, take care not to damage pin terminals (bend or break).

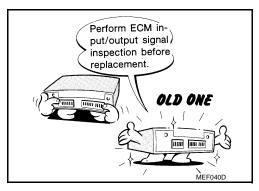
Make sure that there are not any bends or breaks on ECM pin terminal, when connecting pin connectors.

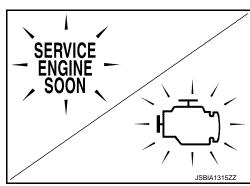
- Securely connect ECM harness connectors.
 - A poor connection can cause an extremely high (surge) voltage to develop in coil and condenser, thus resulting in damage to ICs.
- Keep engine control system harness at least 10 cm (4 in) away from adjacent harness, to prevent engine control system malfunctions due to receiving external noise, degraded operation of ICs, etc.
- Keep engine control system parts and harness dry.
- Before replacing ECM, perform ECM Terminals and Reference Value inspection and make sure ECM functions properly. Refer to EC-94, "Reference Value".
- · Handle mass air flow sensor carefully to avoid damage.
- Do not clean mass air flow sensor with any type of detergent.
- Do not disassemble electric throttle control actuator.
- Even a slight leak in the air intake system can cause serious incidents.
- Do not shock or jar the camshaft position sensor (PHASE), crankshaft position sensor (POS).





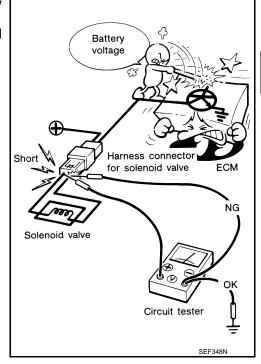




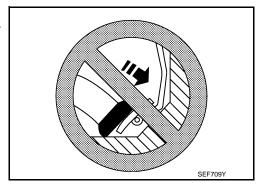


[MR FOR NISMO RS MODELS]

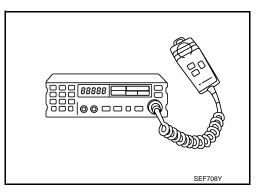
 When measuring ECM signals with a circuit tester, never allow the two tester probes to contact.
 Accidental contact of probes will cause a short circuit and damage the ECM power transistor.



- Do not operate fuel pump when there is no fuel in lines.
- Tighten fuel hose clamps to the specified torque.
- · Do not depress accelerator pedal when starting.
- Immediately after starting, do not rev up engine unnecessarily.
- Do not rev up engine just prior to shutdown.



- When installing C.B. ham radio or a mobile phone, be sure to observe the following as it may adversely affect electronic control systems depending on installation location.
- Keep the antenna as far as possible from the electronic control units.
- Keep the antenna feeder line more than 20 cm (8 in) away from the harness of electronic controls.
 Do not let them run parallel for a long distance.
- Adjust the antenna and feeder line so that the standing-wave ratio can be kept smaller.
- Be sure to ground the radio to vehicle body.



Α

EC

С

D

Е

G

F

Н

I

J

Κ

M

Ν

0

PREPARATION

PREPARATION

Special Service Tools

INFOID:0000000011461353

NOTE:

The actual shapes of TechMate tools may differ from those of special service tools illustrated here.

Tool number (TechMate No.) Tool name		Description
(J-44321) Fuel pressure gauge kit	LEC642	Checks fuel pressure
(J-44321-6) Fuel pressure adapter	LBIA0376E	Connects fuel pressure gauge to quick connector type fuel lines.
KV10120000 Fuel tube adapter	JSBIA0410ZZ	Measures fuel pressure

Commercial Service Tools

INFOID:0000000011461354

Tool name (TechMate No.)		Description
Leak detector i.e.: (J-41416)	S-NT703	Locates the EVAP leak
EVAP service port adapter i.e.: (J-41413-OBD)	S-N1704	Applies positive pressure through EVAP service port

PREPARATION

< PREPARATION >

[MR FOR NISMO RS MODELS]

	[INIK FOR INISINIO RS INIODELS]
	Description
	Checks fuel tank vacuum relief valve opening pressure
S-NT815	Removes and installs engine coolant temperature sensor
19 mm (0.75 in) More than More than (1.26 in)	
Mating surface shave cylinder	Reconditions the exhaust system threads before installing a new oxygen sensor. Use with antiseize lubricant shown below. a: 18 mm diameter with pitch 1.5 mm for Zirconia Oxygen Sensor b: 12 mm diameter with pitch 1.25 mm for Titania Oxygen Sensor
S-NI779	Lubricates oxygen sensor thread cleaning tool when reconditioning exhaust system threads.
	19 mm (0.75 in) 32 mm (1 26 in) S-NT705 Mating surface shave cylinder Flutes AEM488

Revision: 2014 October EC-25 2015 JUKE

M

Ν

0

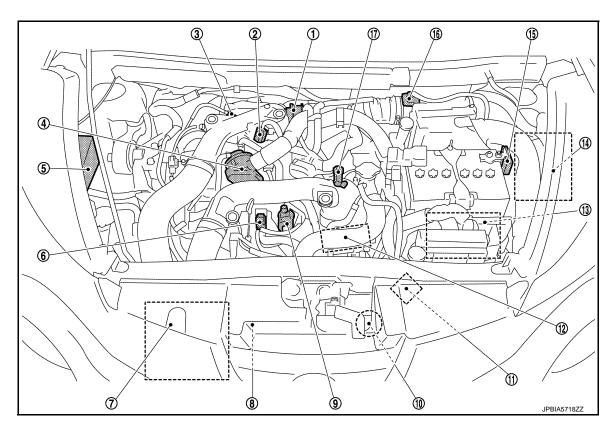
SYSTEM DESCRIPTION

COMPONENT PARTS ENGINE CONTROL SYSTEM

ENGINE CONTROL SYSTEM: Component Parts Location

INFOID:0000000011461355

ENGINE ROOM COMPARTMENT



- Boost control actuator
- Turbocharger boost control solenoid 3. valve
- 4. Recirculation valve
- 5. Relay box
 - · Fuel injector relay
 - Fuel pump relay

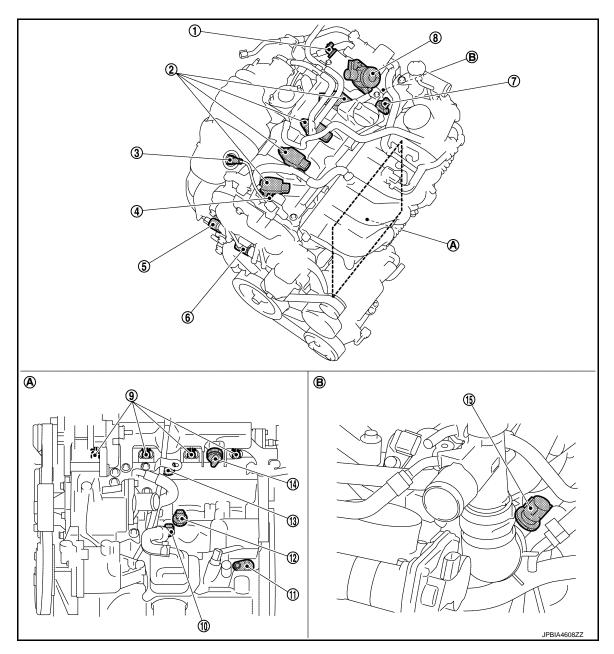
Inter cooler

13. ECM

- Refrigerant pressure sensor Refer to <u>HAC-6</u>, "Component Parts <u>Location"</u>.
- Cooling fan motor
- 11. Cooling fan control module
- 14. IPDM E/R
- 16. Mass air flow sensor (with intake air temperature sensor 1)
- Refer to PCS-4, "Component Parts Location".
- 17. Turbocharger boost sensor (with intake air temperature sensor 2)

- A/F sensor 1
- EVAP canister purge volume control solenoid valve
- 9. EVAP service port
- Electric throttle control actuator (with built in throttle position sensor and throttle control motor)
- 15. Battery current sensor (with battery temperature sensor)

ENGINE COMPARTMENT



- Exhaust valve timing control position sensor
- 4. PCV valve
- 7. Camshaft position sensor (PHASE)
- 10. Engine oil temperature sensor
- 13. Knock sensor
- A. Cylinder block left side

EXHAUST COMPARTMENT

2WD

- 2. Ignition coil (with power transistor)
- Exhaust valve timing control solenoid valve
- 8. High pressure fuel pump
- 11. Crankshaft position sensor (POS)
- 14 Fuel rail pressure sensor
- B. Engine rear end

- 3. A/F sensor 1
- Intake valve timing control solenoid valve
- 9. Fuel injector
- 12. Engine oil pressure sensor
- 15. Engine coolant temperature sensor

Α

EC

C

Е

D

F

G

Н

|

0

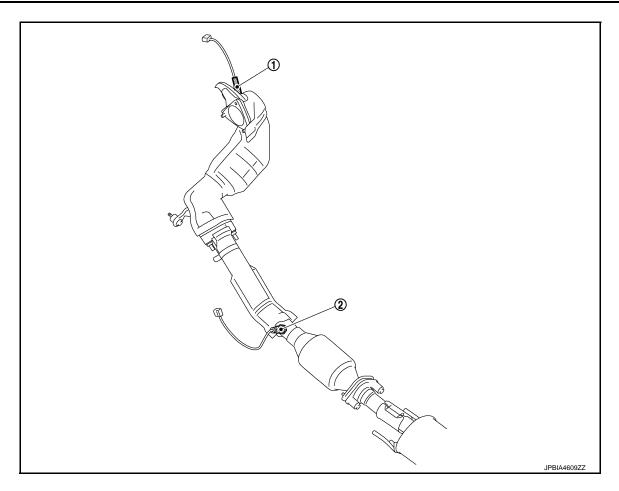
Κ

.

M

Ν

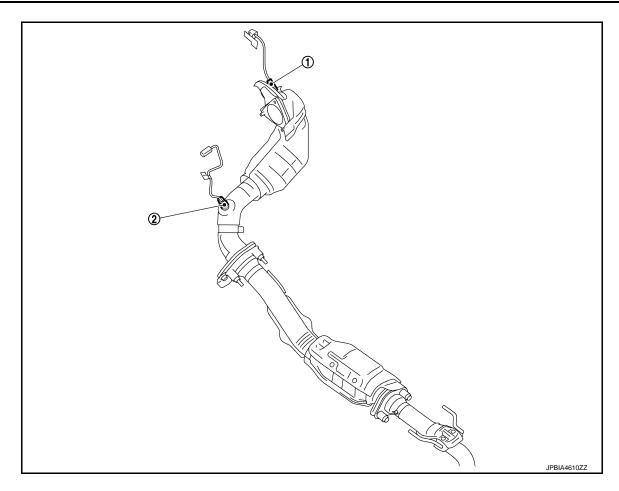
0



1. A/F sensor 1

2. Heated oxygen sensor 2

AWD



1. A/F sensor 1

2. Heated oxygen sensor 2

BODY COMPARTMENT

Α

EC

C

D

Е

F

G

Н

J

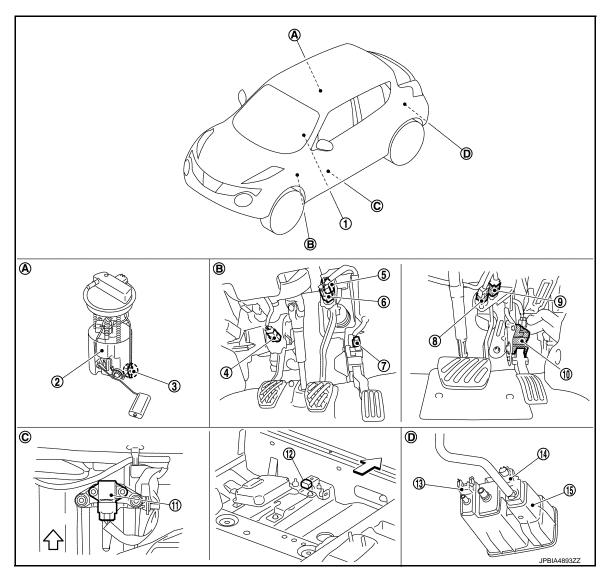
Κ

-

M

Ν

0



- 1. ASCD steering switch
- Clutch pedal position switch (with M/T models)
- Accelerator pedal position sensor (with M/T models)
- 10. Accelerator pedal position sensor (with CVT models)
- 13. EVAP control system pressure sensor 14.
- A. Under of right side second seat
- D. Fuel tank rear

- Fuel level sensor unit, fuel filter and fuel pump assembly
- 5. Brake pedal position switch (with M/T models)
- 8. Brake pedal position switch (with CVT models)
- 11. G sensor (with 2WD models)
- 14. EVAP canister vent control valve
- B. Periphery of pedals

- 3. Fuel tank temperature sensor
- 6. Stop lamp switch (with M/T models)
- 9. Stop lamp switch (with CVT models)
- G sensor (with AWD models)
- 15. EVAP canister
- C. Under of left side front seat

ENGINE CONTROL SYSTEM : Component Description

INFOID:0000000011461356

Component	Reference
ECM	EC-32, "ECM"
Accelerator pedal position sensor	EC-32, "Accelerator Pedal Position Sensor"

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

Component	Reference	
Electric throttle control actuator		
Throttle control motor	EC-32, "Electric Throttle Control Actuator"	
Throttle position sensor		
Ignition coil with power transistor	EC-33. "Ignition Coil With Power Transistor"	
Fuel injector	EC-34, "Fuel Injector"	
High pressure fuel pump	EC-34, "High Pressure Fuel Pump"	
Fuel rail pressure sensor	EC-35, "Fuel Rail Pressure Sensor"	
Low pressure fuel pump	EC-35, "Low Pressure Fuel Pump"	
Fuel tank temperature sensor	EC-35, "Fuel Tank Temperature Sensor"	
Fuel level sensor	EC-35, "Fuel Level Sensor"	
Mass air flow sensor	EC-36, "Mass Air Flow Sensor (With Intake Air Temperature Sen	
Intake air temperature sensor 1	sor 1)"	
Turbocharger		
Boost control actuator	EC-36, "Turbocharger"	
Turbocharger boost control solenoid valve		
Turbocharger boost sensor	EC-37, "Turbocharger Boost Sensor (With Intake Air Temperature	
Intake air temperature sensor 2	Sensor 2)"	
Engine coolant temperature sensor	EC-38, "Engine Coolant Temperature Sensor"	
Crankshaft position sensor	EC-38, "Crankshaft Position Sensor (POS)"	
Camshaft position sensor	EC-39, "Camshaft Position Sensor (PHASE)"	
Intake valve timing control solenoid valve	EC-39, "Intake Valve Timing Control Solenoid Valve"	
Exhaust valve timing control position sensor	EC-39, "Exhaust Valve Timing Control Position Sensor"	
Exhaust valve timing control solenoid valve	EC-40, "Exhaust Valve Timing Control Solenoid Valve"	
Air fuel ratio (A/F) sensor 1	EC-40, "Air Fuel Ratio (A/F) Sensor 1"	
Heated oxygen sensor 2	EC-40, "Heated Oxygen Sensor 2"	
Knock sensor	EC-41, "Knock Sensor"	
Engine oil pressure sensor	EC-41, "Engine Oil Pressure Sensor"	
Engine oil temperature sensor	EC-42, "Engine Oil Temperature Sensor"	
Cooling fan	EC-42, "Cooling Fan"	
EVAP canister purge volume control solenoid valve	EC-42, "EVAP Canister Purge Volume Control Solenoid Valve"	
EVAP canister vent control valve	EC-43, "EVAP Canister Vent Control Valve"	
EVAP control system pressure sensor	EC-43, "EVAP Control System Pressure Sensor"	
Battery current sensor	EC-43, "Battery Current Sensor (With Battery Temperature Sen-	
Battery temperature sensor	Sor)"	
Malfunction indicator lamp (MIL)	EC-44, "Malfunction Indicator lamp (MIL)"	
Oil pressure warning lamp	EC-44, "Oil Pressure Warning Lamp"	
Refrigerant pressure sensor	EC-44, "Refrigerant Pressure Sensor"	
Stop lamp switch	-	
Brake pedal position switch	EC-44, "Stop Lamp Switch & Brake Pedal Position Switch"	
Clutch pedal position switch	EC-45, "Clutch Pedal Position Switch"	
ASCD steering switch	EC-45, "ASCD Steering Switch"	
Information display	EC-45, "Information Display"	

Revision: 2014 October EC-31 2015 JUKE

·

С

G

Н

J

K

L

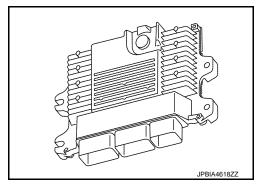
IVI

N

0

ECM INFOID:0000000011461357

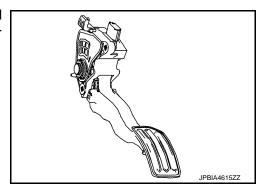
The ECM consists of a microcomputer and connectors for signal input and output and for power supply. The ECM controls the engine.



INFOID:0000000011461358

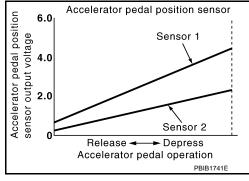
Accelerator Pedal Position Sensor

The accelerator pedal position sensor is installed on the upper end of the accelerator pedal assembly. The sensor detects the accelerator position and sends a signal to the ECM.



Accelerator pedal position sensor has two sensors. These sensors are a kind of potentiometers which transform the accelerator pedal position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the accelerator pedal and feed the voltage signals to the ECM. The ECM judges the current opening angle of the accelerator pedal from these signals and controls the throttle control motor based on these signals.

Idle position of the accelerator pedal is determined by the ECM receiving the signal from the accelerator pedal position sensor. The ECM uses this signal for the engine operation such as fuel cut.

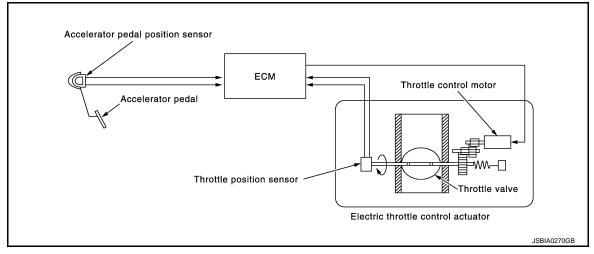


INFOID:0000000011461359

Electric Throttle Control Actuator

OUTLINE

Electric throttle control actuator consists of throttle body, throttle valve, throttle control motor and throttle position sensor.



THROTTLE CONTROL MOTOR RELAY

Power supply for the throttle control motor is provided to the ECM via throttle control motor relay. The throttle control motor relay is ON/OFF controlled by the ECM. When the ignition switch is turned ON, the ECM sends an ON signal to throttle control motor relay and battery voltage is provided to the ECM. When the ignition switch is turned OFF, the ECM sends an OFF signal to throttle control motor relay and battery voltage is not provided to the ECM.

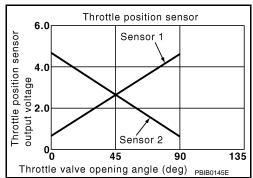
THROTTLE CONTROL MOTOR

The throttle control motor is operated by the ECM and it opens and closes the throttle valve.

The current opening angle of the throttle valve is detected by the throttle position sensor and it provides feed-back to the ECM to control the throttle control motor to make the throttle valve opening angle properly in response to driving condition.

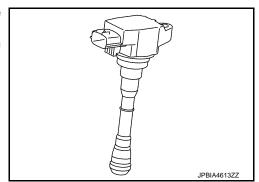
THROTTLE POSITION SENSOR

The throttle position sensor responds to the throttle valve movement. The throttle position sensor has two sensors. These sensors are a kind of potentiometers which transform the throttle valve position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the throttle valve and feed the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.



Ignition Coil With Power Transistor

The ignition signal from the ECM is sent to and amplified by the power transistor. The power transistor turns ON and OFF the ignition coil primary circuit. This ON/OFF operation induces the proper high voltage in the coil secondary circuit.



EC

Α

C

D

Е

Н

Н

J

K

L

M

Ν

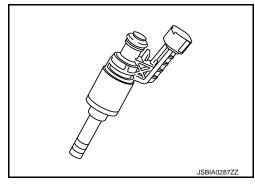
INFOID:0000000011461360

0

Ρ

Fuel Injector

For the fuel injector, a high pressure fuel injector is used and this enables a high-pressure fuel injection at a high voltage within a short time. The ECM is equipped with an injector driver unit and actuates the fuel injector at a high voltage (approximately 65 V at the maximum).



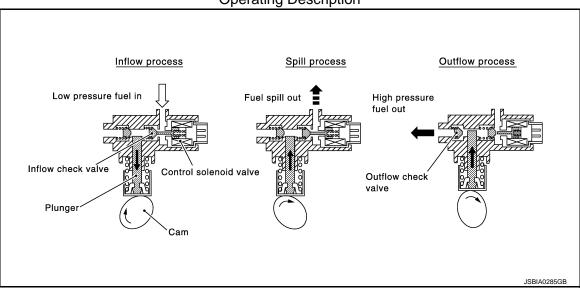
High Pressure Fuel Pump

INFOID:0000000011461362

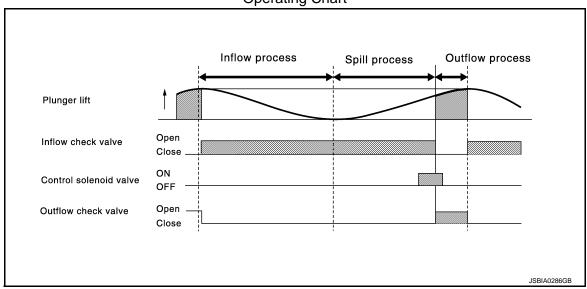
The high pressure fuel pump is activated by the exhaust camshaft.

ECM controls the high pressure fuel pump control solenoid valve built into the high pressure fuel pump and adjusts the amount of discharge by changing the suction timing of the low pressure fuel.

Operating Description



Operating Chart

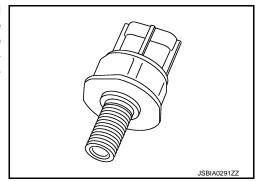


[MR FOR NISMO RS MODELS]

INFOID:0000000011461363

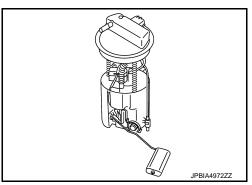
Fuel Rail Pressure Sensor

The fuel rail pressure (FRP) sensor is placed to the fuel rail and measures fuel pressure in the fuel rail. The sensor transmits voltage signal to the ECM. As the pressure increases, the voltage rises. The ECM controls the fuel pressure in the fuel rail by operating high pressure fuel pump. The ECM uses the signal from fuel rail pressure sensor as a feedback signal.



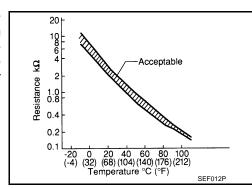
Low Pressure Fuel Pump

The low pressure fuel pump is integrated with a fuel pressure regulator and a fuel filter. This pump is build into the fuel tank.



Fuel Tank Temperature Sensor

The fuel tank temperature sensor is used to detect the fuel temperature inside the fuel tank. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the fuel temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Fuel Level Sensor

Fluid temperature [°C (°F)]	Voltage* [V]	Resistance $[k\Omega]$
20 (68)	3.5	2.3 - 2.7
50 (122)	2.2	0.79 - 0.90

^{*:} These data are reference values and are measured between ECM terminals.

The fuel level sensor is mounted in the fuel level sensor unit.

The sensor detects a fuel level in the fuel tank and transmits a signal to the combination meter. The combination meter sends the fuel level sensor signal to the ECM via the CAN communication line.

It consists of two parts, one is mechanical float and the other is variable resistor. Fuel level sensor output voltage changes depending on the movement of the fuel mechanical float.

EC

Α

D

INFOID:0000000011461364

INFOID:0000000011461365

N

Mass Air Flow Sensor (With Intake Air Temperature Sensor 1)

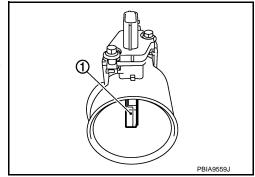
INFOID:0000000011461367

INFOID:0000000011461368

MASS AIR FLOW SENSOR

The mass air flow sensor (1) is placed in the stream of intake air. It measures the intake flow rate by measuring a part of the entire intake flow. The mass air flow sensor controls the temperature of the hot wire to a certain amount. The heat generated by the hot wire is reduced as the intake air flows around it. The more air, the greater the heat loss.

Therefore, the electric current supplied to hot wire is changed to maintain the temperature of the hot wire as air flow increases. The ECM detects the air flow by means of this current change.



INTAKE AIR TEMPERATURE SENSOR 1

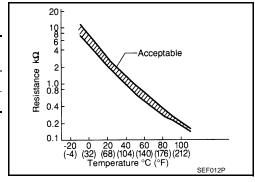
The intake air temperature sensor 1 is built-into mass air flow sensor. The sensor detects intake air temperature and transmits a signal to the ECM.

The temperature sensing unit uses a thermistor which is sensitive to the change in temperature. Electrical resistance of the thermistor decreases in response to the temperature rise.

<Reference data>

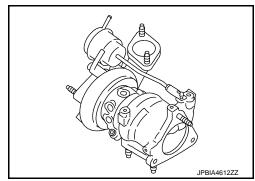
Intake air temperature [°C (°F)]	Voltage* (V)	Resistance (kΩ)
25 (77)	3.3	1.800 - 2.200
80 (176)	1.2	0.283 - 0.359

^{*:} These data are reference values and are measured between ECM terminals.



Turbocharger

Turbocharger boost is controlled by adjusting the pressure to the diaphragm of the boost control actuator.



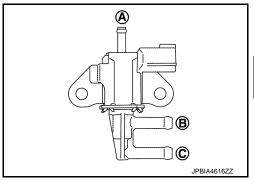
TURBOCHARGER BOOST CONTROL SOLENOID VALVE

Turbocharger boost control solenoid valve is ON/OFF duty controlled by ECM.

[MR FOR NISMO RS MODELS]

And it adjusts the pressure in the diaphragm of the boost control actuator. The longer the turbocharger boost control solenoid valve is ON, the higher the boost is increased.

- A. From boost pipe
- B. To boost control actuator
- C. To Air cleaner

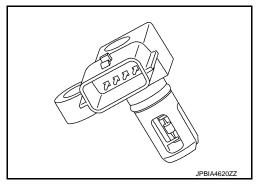


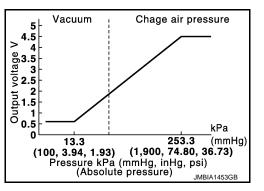
Turbocharger Boost Sensor (With Intake Air Temperature Sensor 2)

INFOID:0000000011461369

TURBOCHARGER BOOST SENSOR

The turbocharger boost sensor detects the pressure of the outlet side of the intercooler. When increasing the pressure, the output voltage of the sensor to the ECM increases.





INTAKE AIR TEMPERATURE SENSOR 2

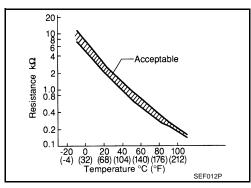
The intake air temperature sensor 2 is built-into turbocharger boost sensor. The sensor detects intake air temperature and transmits a signal to the ECM.

The temperature sensing unit uses a thermistor which is sensitive to the change in temperature. Electrical resistance of the thermistor decreases in response to the temperature rise.

<Reference data>

Intake air temperature [°C (°F)]	Voltage [*] (V)	Resistance (kΩ)
25 (77)	3.3	1.800 - 2.200
80 (176)	1.2	0.283 - 0.359

^{*:} These data are reference values and are measured between ECM terminals.



Α

EC

Е

D

F

G

Н

J

Κ

M

Ν

0

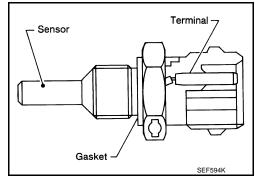
Ρ

Revision: 2014 October EC-37 2015 JUKE

Engine Coolant Temperature Sensor

INFOID:0000000011461370

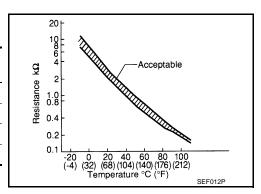
The engine coolant temperature sensor is used to detect the engine coolant temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine coolant temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine coolant temperature [°C (°F)]	Voltage [*] (V)	Resistance (kΩ)
-10 (14)	4.4	7.0 - 11.4
20 (68)	3.5	2.37 - 2.63
50 (122)	2.2	0.68 - 1.00
90 (194)	0.9	0.236 - 0.260

^{*:} These data are reference values and are measured between ECM terminals.



INFOID:0000000011461371

Crankshaft Position Sensor (POS)

The crankshaft position sensor (POS) is located on the oil pan facing the gear teeth (cogs) of the signal plate. It detects the fluctuation of the engine revolution.

The sensor consists of a permanent magnet and Hall IC.

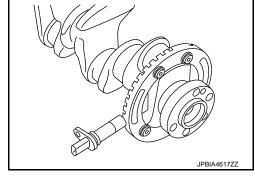
When the engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

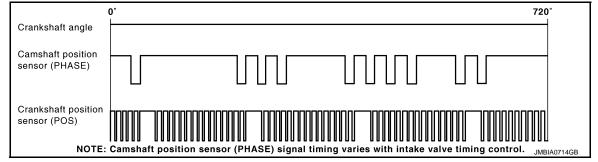
The changing gap causes the magnetic field near the sensor to change.

Due to the changing magnetic field, the voltage from the sensor changes.

The ECM receives the voltage signal and detects the fluctuation of the engine revolution.

ECM receives the signals as shown in the figure.





INFOID:0000000011461372

Camshaft Position Sensor (PHASE)

The camshaft position sensor (PHASE) senses the retraction of intake camshaft to identify a particular cylinder. The camshaft position sensor (PHASE) senses the piston position.

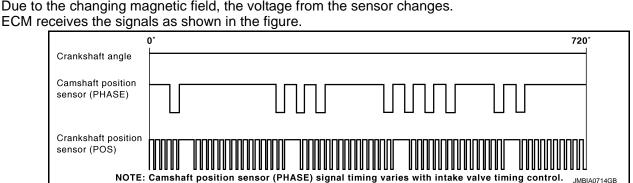
When the crankshaft position sensor (POS) system becomes inoperative, the camshaft position sensor (PHASE) provides various controls of engine parts instead, utilizing timing of cylinder identification signals.

The sensor consists of a permanent magnet and Hall IC.

When engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

The changing gap causes the magnetic field near the sensor to change.

Due to the changing magnetic field, the voltage from the sensor changes.



Intake Valve Timing Control Solenoid Valve

Intake valve timing control solenoid valve is activated by ON/OFF pulse duty (ratio) signals from the ECM.

The intake valve timing control solenoid valve changes the oil amount and direction of flow through intake valve timing control unit or stops oil flow.

The longer pulse width advances valve angle.

The shorter pulse width retards valve angle.

When ON and OFF pulse widths become equal, the solenoid valve stops oil pressure flow to fix the intake valve angle at the control position.

Exhaust Valve Timing Control Position Sensor

Exhaust valve timing control position sensor detects the protrusion of the signal plate installed to the exhaust camshaft front end.

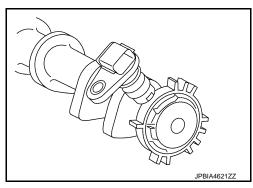
This sensor signal is used for sensing a position of the exhaust camshaft.

The sensor consists of a permanent magnet and Hall IC.

When engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

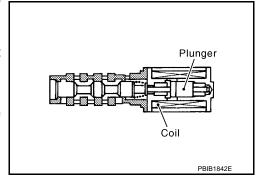
The changing gap causes the magnetic field near the sensor to

Due to the changing magnetic field, the voltage from the sensor changes.

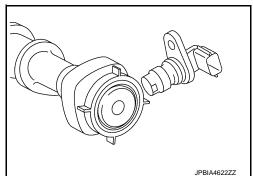


D

INFOID:0000000011461373



INFOID:0000000011461374



EC

Α

M

N

Exhaust Valve Timing Control Solenoid Valve

INFOID:0000000011461375

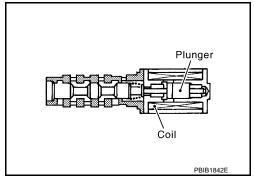
Exhaust valve timing control solenoid valve is activated by ON/OFF pulse duty (ratio) signals from the ECM.

The exhaust valve timing control solenoid valve changes the oil amount and direction of flow through exhaust valve timing control unit or stops oil flow.

The longer pulse width retards valve angle.

The shorter pulse width advances valve angle.

When ON and OFF pulse widths become equal, the solenoid valve stops oil pressure flow to fix the exhaust valve angle at the control position.



INFOID:0000000011461376

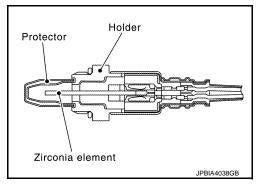
Air Fuel Ratio (A/F) Sensor 1

DESCRIPTION

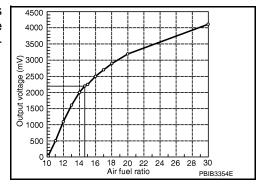
The sensor element of the A/F sensor 1 is composed an electrode layer, which transports ions. It has a heater in the element.

The sensor is capable of precise measurement $\lambda = 1$, but also in the lean and rich range. Together with its control electronics, the sensor outputs a clear, continuous signal throughout a wide λ range.

The exhaust gas components diffuse through the diffusion layer at the sensor cell. An electrode layer is applied voltage, and this current relative oxygen density in lean. Also this current relative hydrocarbon density in rich.



Therefore, the A/F sensor 1 is able to indicate air fuel ratio by this electrode layer of current. In addition, a heater is integrated in the sensor to ensure the required operating temperature of approximately 760° C (1,400°F).



A/F SENSOR 1 HEATER

A/F sensor 1 heater is integrated in the sensor.

The ECM performs ON/OFF duty control of the A/F sensor 1 heater corresponding to the engine operating condition to keep the temperature of A/F sensor 1 element within the specified range.

Heated Oxygen Sensor 2

INFOID:0000000011461377

DESCRIPTION

COMPONENT PARTS

< SYSTEM DESCRIPTION >

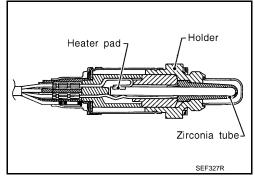
[MR FOR NISMO RS MODELS]

The heated oxygen sensor 2, after three way catalyst (manifold), monitors the oxygen level in the exhaust gas.

Even if switching characteristics of the air fuel ratio (A/F) sensor 1 are shifted, the air fuel ratio is controlled to stoichiometric, by the signal from the heated oxygen sensor 2.

This sensor is made of ceramic zirconia. The zirconia generates voltage from approximately 1 V in richer conditions to 0 V in leaner conditions.

Under normal conditions the heated oxygen sensor 2 is not used for engine control operation.



HEATED OXYGEN SENSOR 2 HEATER

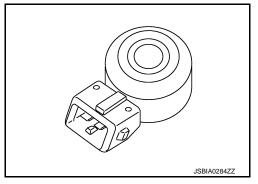
Heated oxygen sensor 2 heater is integrated in the sensor.

The ECM performs ON/OFF control of the heated oxygen sensor 2 heater corresponding to the engine speed, amount of intake air and engine coolant temperature.

Engine speed	Heated oxygen sensor 2 heater
Above 3,600 rpm	OFF
Below 3,600 rpm after the following conditions are met. Engine: After warming up Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load	ON

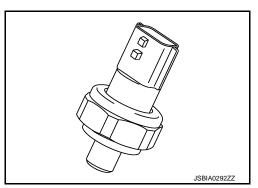
Knock Sensor

The knock sensor is attached to the cylinder block. It senses engine knocking using a piezoelectric element. A knocking vibration from the cylinder block is sensed as vibrational pressure. This pressure is converted into a voltage signal and sent to the ECM.



Engine Oil Pressure Sensor

The engine oil pressure (EOP) sensor is detects engine oil pressure and transmits a voltage signal to the ECM.



Α

EC

D

Е

F

K

INFOID:0000000011461379

M

Ν

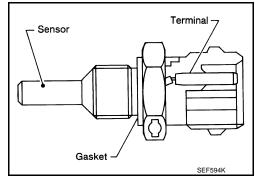
0

Ρ

Engine Oil Temperature Sensor

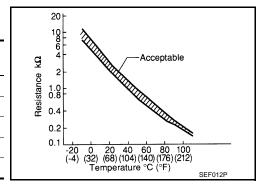
INFOID:0000000011461380

The engine oil temperature sensor is used to detect the engine oil temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine oil temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine oil temperature [°C (°F)]	Voltage [*] (V)	Resistance (kΩ)
-10 (14)	4.4	7.0 - 11.4
20 (68)	3.5	2.37 - 2.63
50 (122)	2.2	0.68 - 1.00
90 (194)	0.9	0.236 - 0.260
110 (230)	0.6	0.143 - 0.153



^{*:} These data are reference values and are measured between ECM terminals.

Cooling Fan

INFOID:0000000011461381

COOLING FAN CONTROL MODULE

Cooling fan control module receives ON/OFF pulse duty signal from IPDM E/R. Corresponding to this ON/OFF pulse duty signal, cooling fan control module sends cooling fan motor operating voltage to cooling fan motor. The revolution speed of cooling fan motor is controlled by duty cycle of the voltage.

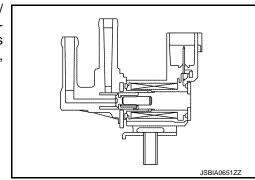
COOLING FAN MOTOR

Cooling fan motor receives cooling fan motor operating voltage from cooling fan control module. The revolution speed of cooling fan motor is controlled by duty cycle of the voltage.

EVAP Canister Purge Volume Control Solenoid Valve

INFOID:0000000011461382

The EVAP canister purge volume control solenoid valve uses a ON/ OFF duty to control the flow rate of fuel vapor from the EVAP canister. The EVAP canister purge volume control solenoid valve is moved by ON/OFF pulses from the ECM. The longer the ON pulse, the greater the amount of fuel vapor that will flow through the valve.



EVAP Canister Vent Control Valve

INFOID:0000000011461383

Α

EC

D

The EVAP canister vent control valve is located on the EVAP canister and is used to seal the canister vent.

This solenoid valve responds to signals from the ECM. When the ECM sends an ON signal, the coil in the solenoid valve is energized. A plunger will then move to seal the canister vent. The ability to seal the vent is necessary for the on board diagnosis of other evaporative emission control system components.

This solenoid valve is used only for diagnosis, and usually remains opened.

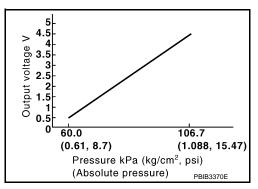
When the vent is closed, under normal purge conditions, the evaporative emission control system is depressurized and allows "EVAP Control System" diagnosis.

Spring Valve Coil O-ring Plunger Canister side PBIB1263E

INFOID:0000000011461384

EVAP Control System Pressure Sensor

The EVAP control system pressure sensor detects pressure in the purge line. The sensor output voltage to the ECM increases as pressure increases.



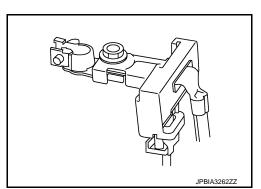
Battery Current Sensor (With Battery Temperature Sensor)

INFOID:0000000011461385

OUTLINE

The power generation voltage variable control enables fuel consumption to be decreased by reducing the engine load which is caused by the power generation of the generator.

Based on sensor signals, ECM judges whether or not the power generation voltage variable control is performed. When performing the power generation voltage variable control, ECM calculates the target power generation voltage based on the sensor signal. And ECM sends the calculated value as the power generation command value to IPDM E/R. For the details of the power generation voltage variable control, refer to CHG-8, "POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM: System Description".



CAUTION:

Never connect the electrical component or the ground wire directly to the battery terminal. The connection causes the malfunction of the power generation voltage variable control, and then the battery discharge may occur.

BATTERY CURRENT SENSOR

The battery current sensor is installed to the battery negative cable. The sensor measures the charging/discharging current of the battery.

BATTERY TEMPERATURE SENSOR

Р

< SYSTEM DESCRIPTION >

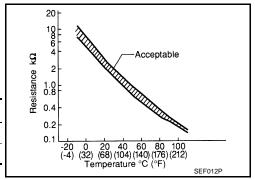
Battery temperature sensor is integrated in battery current sensor. The sensor measures temperature around the battery.

The electrical resistance of the thermistor decreases as temperature increases.

<Reference data>

Temperature [°C (°F)]	Voltage [*] (V)	Resistance (k Ω)
25 (77)	3.333	1.9 - 2.1
90 (194)	0.969	0.222 - 0.258

^{*:} These data are reference values and are measured between battery temperature sensor signal terminal and sensor ground.



INFOID:0000000011461386

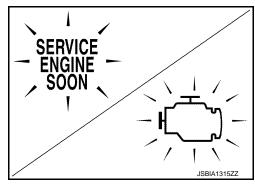
Malfunction Indicator lamp (MIL)

The Malfunction Indicator lamp (MIL) is located on the combination meter.

The MIL will illuminate when the ignition switch is turned ON without the engine running. This is a bulb check.

When the engine is started, the MIL should turn OFF. If the MIL remains illuminated, the on board diagnostic system has detected an engine system malfunction.

For details, refer to <u>EC-80</u>, "<u>DIAGNOSIS DESCRIPTION</u>: <u>Malfunction Indicator Lamp (MIL)</u>".

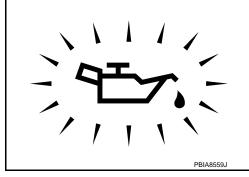


INFOID:0000000011461387

Oil Pressure Warning Lamp

Oil pressure warning lamp is located on the combination meter. It indicates the low pressure of the engine oil and the malfunction of the engine oil pressure system.

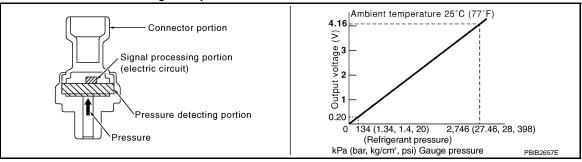
Combination meter turns the oil pressure warning lamp ON/OFF according to the oil pressure warning lamp signal received from ECM via CAN communication.



INFOID:0000000011461388

Refrigerant Pressure Sensor

The refrigerant pressure sensor is installed at the condenser of the air conditioner system. The sensor uses an electrostatic volume pressure transducer to convert refrigerant pressure to voltage. The voltage signal is sent to ECM, and ECM controls cooling fan system.



Stop Lamp Switch & Brake Pedal Position Switch

INFOID:0000000011461389

Stop lamp switch and brake pedal position switch are installed to brake pedal bracket. ECM detects the state of the brake pedal by those two types of input (ON/OFF signal).

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

Brake pedal	Brake pedal position switch	Stop lamp switch
Released	ON	OFF
Depressed	OFF	ON

EC

D

Α

Clutch Pedal Position Switch

INFOID:0000000011461390

When the clutch pedal is depressed, the clutch pedal position switch turns OFF and the clutch pedal position switch signal is sent to the ECM. The ECM judges the clutch pedal conditions via the signal (ON or OFF).

ASCD Steering Switch

INFOID:0000000011461391

ASCD steering switch has variant values of electrical resistance for each button. ECM reads voltage variation of switch, and determines which button is operated.

Е

Information Display

INFOID:0000000011461392

The operation mode of the ASCD is indicated on the information display in the combination meter. ECM transmits the status signal to the combination meter via CAN communication according to ASCD operation.

F

Н

K

L

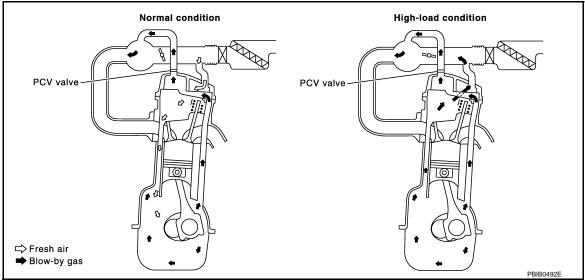
Ν

Р

STRUCTURE AND OPERATION

Positive Crankcase Ventilation

INFOID:0000000011461393



This system returns blow-by gas to the intake manifold.

The positive crankcase ventilation (PCV) valve is provided to conduct crankcase blow-by gas to the intake manifold.

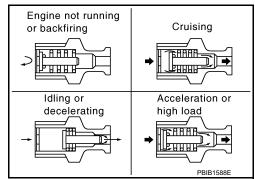
During partial throttle operation of the engine, the intake manifold sucks the blow-by gas through the PCV valve.

Normally, the capacity of the valve is sufficient to handle any blow-by and a small amount of ventilating air.

The ventilating air is then drawn from the air inlet tubes into the crankcase. In this process the air passes through the hose connecting air inlet tubes to rocker cover.

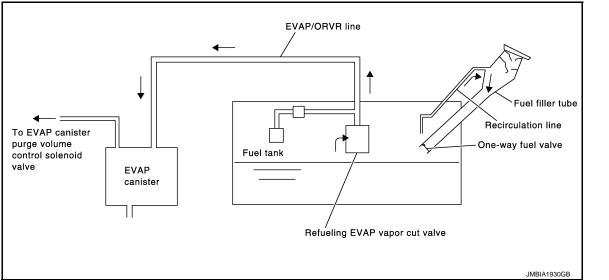
Under full-throttle condition, the manifold vacuum is insufficient to draw the blow-by flow through the valve. The flow goes through the hose connection in the reverse direction.

On vehicles with an excessively high blow-by, the valve does not meet the requirement. This is because some of the flow will go through the hose connection to the air inlet tubes under all conditions.



INFOID:0000000011461394

On Board Refueling Vapor Recovery (ORVR)



From the beginning of refueling, the air and vapor inside the fuel tank go through refueling EVAP vapor cut valve and EVAP/ORVR line to the EVAP canister. The vapor is absorbed by the EVAP canister and the air is released to the atmosphere.

When the refueling has reached the full level of the fuel tank, the refueling EVAP vapor cut valve is closed and refueling is stopped because of auto shut-off. The vapor which was absorbed by the EVAP canister is purged during driving.

WARNING:

When conducting inspections below, be sure to observe the following:

- Put a "CAUTION: FLAMMABLE" sign in workshop.
- Do not smoke while servicing fuel system. Keep open flames and sparks away from work area.
- Be sure to furnish the workshop with a CO2 fire extinguisher.

CAUTION:

- Before removing fuel line parts, carry out the following procedures:
- Put drained fuel in an explosion-proof container and put lid on securely.
- Release fuel pressure from fuel line. Refer to EC-574, "Inspection".
- Disconnect battery ground cable.
- · Always replace O-ring when the fuel gauge retainer is removed.
- Do not kink or twist hose and tube when they are installed.
- Do not tighten hose and clamps excessively to avoid damaging hoses.
- After installation, run engine and check for fuel leaks at connection.
- Do not attempt to top off the fuel tank after the fuel pump nozzle shuts off automatically. Continued refueling may cause fuel overflow, resulting in fuel spray and possibly a fire.

EC

Α

D

Г

Н

J

K

L

M

Ν

0

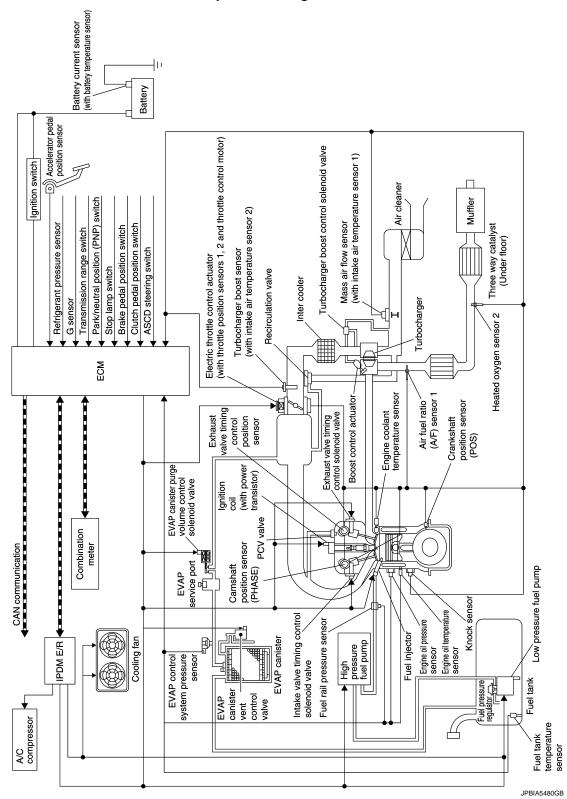
Р

SYSTEM

ENGINE CONTROL SYSTEM

ENGINE CONTROL SYSTEM: System Diagram

INFOID:0000000011461395



ENGINE CONTROL SYSTEM: System Description

INFOID:0000000011461396

ECM controls the engine by various functions.

SYSTEM

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

Function	Reference	A
Direct injection gasoline system	EC-50. "DIRECT INJECTION GASOLINE SYSTEM: System Description"	
Fuel pressure control	EC-53. "FUEL PRESSURE CONTROL : System Description"	EC
Electric ignition control	EC-55. "ELECTRIC IGNITION SYSTEM : System Description"	
Intake valve timing control	EC-56, "INTAKE VALVE TIMING CONTROL: System Description"	
Exhaust valve timing control	EC-57, "EXHAUST VALVE TIMING CONTROL : System Description"	
Turbocharger boost control	EC-59, "TURBOCHARGER BOOST CONTROL : System Description"	
Engine protection control (Low engine oil pressure)	EC-60. "ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE: System Description"	
Fuel filler cap warning system	EC-61, "FUEL FILLER CAP WARNING SYSTEM : System Description"	E
Air conditioning cut control	EC-62, "AIR CONDITIONING CUT CONTROL : System Description"	F
Cooling fan control	EC-64, "COOLING FAN CONTROL : System Description"	
Starter motor drive control	EC-64, "STARTER MOTOR DRIVE CONTROL : System Description"	(
Evaporative emission system	EC-65, "EVAPORATIVE EMISSION SYSTEM : System Description"	
ASCD (Automatic speed control device)	EC-67, "AUTOMATIC SPEED CONTROL DEVICE (ASCD) : System Description"	-
Integrated control system	EC-68. "INTEGRATED CONTROL SYSTEM : System Description"	I
CAN communication	EC-69, "CAN COMMUNICATION : System Description"	

DIRECT INJECTION GASOLINE SYSTEM

Κ

L

M

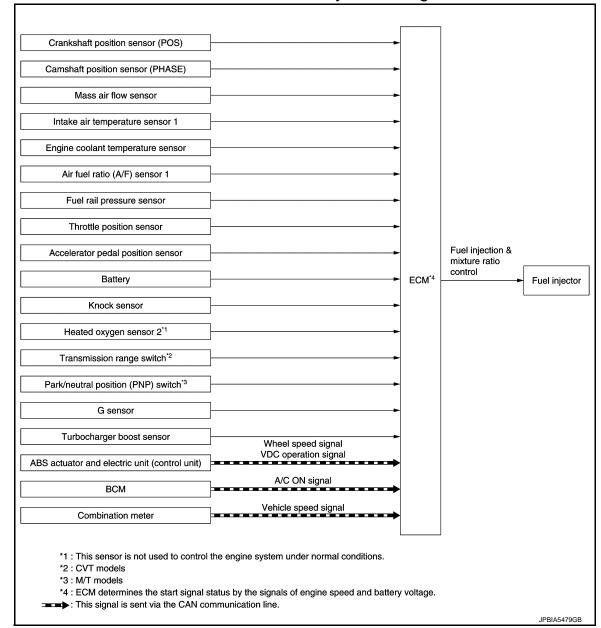
Ν

0

Р

DIRECT INJECTION GASOLINE SYSTEM: System Diagram

INFOID:0000000011461397



DIRECT INJECTION GASOLINE SYSTEM : System Description

INFOID:0000000011461398

INPUT/OUTPUT SIGNAL CHART

K

Р

Sensor		Input signal to ECM	ECM func- tion	Actuator	Α
Crankshaft position sensor (POS)	Engine speed*4	Į.			
Camshaft position sensor (PHASE)	Camshaft posit	ion			EC
Mass air flow sensor	Amount of intal	ke air			
Intake air temperature sensor 1	Intake air temp	erature			С
Engine coolant temperature sensor	Engine coolant	temperature			
Air fuel ratio (A/F) sensor 1	Density of oxyg	en in exhaust gas			
Fuel rail pressure sensor	Fuel rail pressu	ire			D
Throttle position sensor	Throttle position	n			
Accelerator pedal position sensor	Accelerator ped	dal position	Fuel injection		г
Battery	Battery voltage	Battery voltage ^{*4}		Fuel injector	Е
Knock sensor	Engine knockin	g condition	tio control		
Heated oxygen sensor 2*1	Density of oxyg	gen in exhaust gas			F
Transmission range switch*2	Coorposition				
Park/neutral position (PNP) switch*3	Gear position				G
G sensor	Inclination angl	е			
Turbocharger boost sensor	Turbocharger b	oost			
ABS actuator and electric unit (control unit)	CAN commu- nication	Wheel speed signal VDC/TCS operation command			Н
BCM	CAN commu- nication	A/C ON signal			I
Combination meter	CAN commu- nication	Vehicle speed signal			

^{*1:} This sensor is not used to control the engine system under normal conditions.

SYSTEM DESCRIPTION

The adoption of the direct fuel injection method enables more accurate adjustment of fuel injection quantity by injecting atomized high-pressure fuel directly into the cylinder. This method allows high-powered engine, low fuel consumption, and emissions-reduction.

The amount of fuel injected from the fuel injector is determined by the ECM. The ECM controls the length of time the valve remains open (injection pulse duration). The amount of fuel injected is a program value in the ECM memory. The program value is preset by engine operating conditions. These conditions are determined by input signals (for engine speed, intake air, fuel rail pressure and boost) from the crankshaft position sensor, camshaft position sensor, mass air flow sensor, fuel rail pressure sensor and the turbocharger boost sensor.

VARIOUS FUEL INJECTION INCREASE/DECREASE COMPENSATION

In addition, the amount of fuel injected is compensated to improve engine performance under various operating conditions as listed below.

<Fuel increase>

- During warm-up
- When starting the engine
- During acceleration
- Hot-engine operation
- When selector lever position is changed from N to D (CVT models)
- High-load, high-speed operation

<Fuel decrease>

- During deceleration
- During high engine speed operation

EC-51 Revision: 2014 October 2015 JUKE

^{*2:} CVT models

^{*3:} M/T models

^{*4:} ECM determines the start signal status by the signals of engine speed and battery voltage.

FUEL INJECTION CONTROL

Stratified-charge Combustion

Stratified-charge combustion is a combustion method which enables extremely lean combustion by injecting fuel in the latter half of a compression process, collecting combustible air-fuel around the spark plug, and forming fuel-free airspace around the mixture.

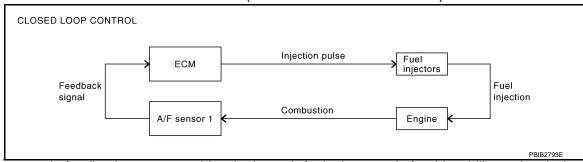
Right after a start with the engine cold, the catalyst warm-up is accelerated by stratified-charge combustion.

Homogeneous Combustion

Homogeneous combustion is a combustion method that fuel is injected during intake process so that combustion occurs in the entire combustion chamber, as is common with conventional methods.

As for a start except for starts with the engine cold, homogeneous combustion occurs.

MIXTURE RATIO FEEDBACK CONTROL (CLOSED LOOP CONTROL)



The mixture ratio feedback system provides the best air-fuel mixture ratio for driveability and emission control. The three way catalyst (manifold) can better reduce CO, HC and NOx emissions. This system uses A/F sensor 1 in the exhaust manifold to monitor whether the engine operation is rich or lean. The ECM adjusts the injection pulse width according to the sensor voltage signal. For more information about A/F sensor 1, refer to EC-40, "Air Fuel Ratio (A/F) Sensor 1". This maintains the mixture ratio within the range of stoichiometric (ideal air-fuel mixture).

This stage is referred to as the closed loop control condition.

Heated oxygen sensor 2 is located downstream of the three way catalyst (manifold). Even if the switching characteristics of A/F sensor 1 shift, the air-fuel ratio is controlled to stoichiometric by the signal from heated oxygen sensor 2.

- Open Loop Control
 - The open loop system condition refers to when the ECM detects any of the following conditions. Feedback control stops in order to maintain stabilized fuel combustion.
- Deceleration and acceleration
- High-load, high-speed operation
- Malfunction of A/F sensor 1 or its circuit
- Insufficient activation of A/F sensor 1 at low engine coolant temperature
- High engine coolant temperature
- During warm-up
- After shifting from N to D (CVT models)
- When starting the engine

MIXTURE RATIO SELF-LEARNING CONTROL

The mixture ratio feedback control system monitors the mixture ratio signal transmitted from A/F sensor 1. This feedback signal is then sent to the ECM. The ECM controls the basic mixture ratio as close to the theoretical mixture ratio as possible. However, the basic mixture ratio is not necessarily controlled as originally designed. Both manufacturing differences (i.e., mass air flow sensor hot wire) and characteristic changes during operation (i.e., fuel injector clogging) directly affect mixture ratio.

Accordingly, the difference between the basic and theoretical mixture ratios is monitored in this system. This is then computed in terms of "injection pulse duration" to automatically compensate for the difference between the two ratios.

"Fuel trim" refers to the feedback compensation value compared against the basic injection duration. Fuel trim includes "short-term fuel trim" and "long-term fuel trim".

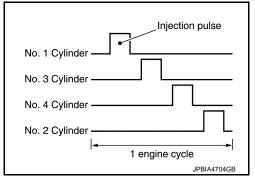
"Short term fuel trim" is the short-term fuel compensation used to maintain the mixture ratio at its theoretical value. The signal from A/F sensor 1 indicates whether the mixture ratio is RICH or LEAN compared to the theoretical value. The signal then triggers a reduction in fuel volume if the mixture ratio is rich, and an increase in fuel volume if it is lean.

"Long-term fuel trim" is overall fuel compensation carried out over time to compensate for continual deviation of the "short-term fuel trim" from the central value. Continual deviation will occur due to individual engine differences, wear over time and changes in the usage environment.

FUEL INJECTION TIMING

Sequential Direct Injection Gasoline System

Fuel is injected into each cylinder during each engine cycle according to the ignition order.



STRATIFIED-CHARGE START CONTROL

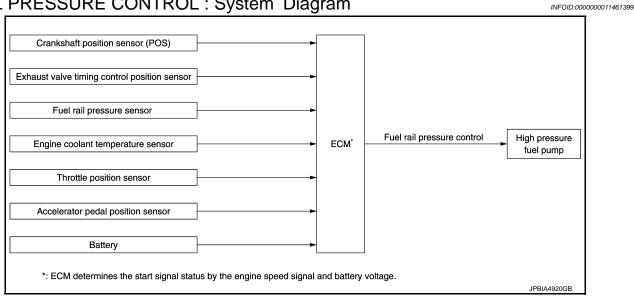
The use of the stratified-charge combustion method enables emissions-reduction when starting the engine with engine coolant temperature between 5°C (41°F) and 40°C (104°F).

FUEL SHUT-OFF

Fuel to each cylinder is shut-off during deceleration, operation of the engine at excessively high speed or operation of the vehicle at excessively high speed.

FUEL PRESSURE CONTROL

FUEL PRESSURE CONTROL: System Diagram



FUEL PRESSURE CONTROL: System Description

INPUT/OUTPUT SIGNAL CHART

EC

D

Е

Н

N

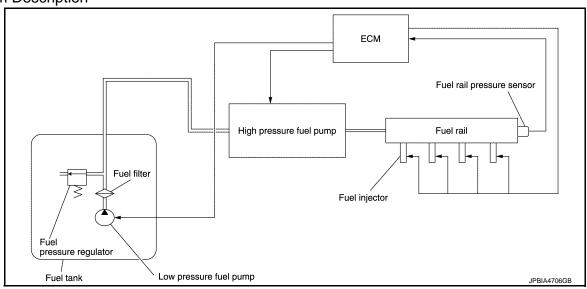
INFOID:0000000011461400

Р

Sensor	Input signal to ECM	ECM function	Actuator	
Crankshaft position sensor (POS)	Engine speed*			
Exhaust valve timing control position sensor	Camshaft position			
Fuel rail pressure sensor	Fuel rail pressure		High pressure fuel pump	
Engine coolant temperature sensor	Engine coolant temperature	Fuel rail pres- sure control		
Throttle position sensor	Throttle position			
Accelerator pedal position sensor	Accelerator pedal position			
Battery	Battery voltage*			

^{*:} ECM determines the start signal status by the engine speed signal and battery voltage.

System Description



Low fuel pressure control

- The low fuel pressure pump is controlled by ECM. The pumped fuel passes through the fuel filter and is sent to the high pressure fuel pump.
- Low fuel pressure is adjusted by the fuel pressure regulator.

High fuel pressure control

The high pressure fuel pump raises the pressure of the fuel sent from the low pressure fuel pump. Actuated by the exhaust camshaft, the high pressure fuel pump activates the high pressure fuel pump solenoid based on a signal received from ECM, and adjusts the amount of discharge by changing the timing of closing the inlet check valve to control fuel rail pressure.

ELECTRIC IGNITION SYSTEM

JPBIA4921GB

INFOID:0000000011461402

Ν

ELECTRIC IGNITION SYSTEM: System Diagram INFOID:0000000011461401 Α Crankshaft position sensor (POS) Camshaft position sensor (PHASE) EC Mass air flow sensor Engine coolant temperature sensor Throttle position sensor Accelerator pedal position sensor D Ignition timing control Ignition coil Turbocharger boost sensor ECM*3 (with power transistor) Intake air temperature sensor 2 Transmission range switch*1 Park/neutral position (PNP) switch*2 Battery Knock sensor Vehicle speed signal

ELECTRIC IGNITION SYSTEM: System Description

: This signal is sent through CAN communication line.

*3: ECM determines the start signal status by the signals of engine speed and battery voltage.

INPUT/OUTPUT SIGNAL CHART

*1 : CVT models *2: M/T models

Combination meter

Sensor	Input Signal to ECM		ECM func- tion	Actuator
Crankshaft position sensor (POS)	Engine speed*	Engine speed*3		
Camshaft position sensor (PHASE)		Piston position		
Mass air flow sensor	Amount of inta	Amount of intake air		
Engine coolant temperature sensor	Engine coolan	t temperature		
Throttle position sensor	Throttle position	Throttle position		Ignition coil (with power transistor)
Accelerator pedal position sensor	Accelerator pedal position			
Turbocharger boost sensor	Turbocharger boost		Ignition tim-	
Intake air temperature sensor 2			ing control	
Transmission range switch*1	Coorposition			
Park/neutral position (PNP) switch*2	- Gear position	Gear position		
Battery	Battery voltage*			
Knock sensor	Engine knocking condition			
Combination meter	CAN commu- nication	Vehicle speed signal		

^{*1:} CVT models

SYSTEM DESCRIPTION

Firing order: 1 - 3 - 4 - 2

^{*2:} M/T models

^{*3:} ECM determines the start signal status by the signals of engine speed and battery voltage.

< SYSTEM DESCRIPTION >

The ignition timing is controlled by the ECM to maintain the best air-fuel ratio for every running condition of the engine. The ignition timing data is stored in the ECM.

The ECM receives information such as the injection pulse width and camshaft position sensor (PHASE) signal. Computing this information, ignition signals are transmitted to the power transistor.

During the following conditions, the ignition timing is revised by the ECM according to the other data stored in the ECM.

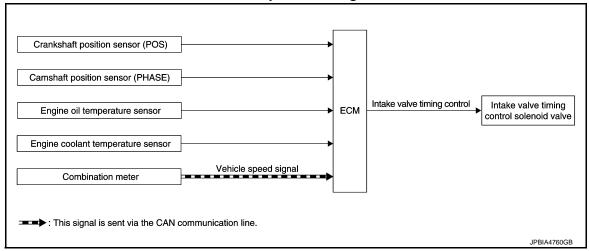
- At starting
- During warm-up
- At idle
- At low battery voltage
- During acceleration

The knock sensor retard system is designed only for emergencies. The basic ignition timing is programmed within the anti-knocking zone, if recommended fuel is used under dry conditions. The retard system does not operate under normal driving conditions. If engine knocking occurs, the knock sensor monitors the condition. The signal is transmitted to the ECM. The ECM retards the ignition timing to eliminate the knocking condition.

INTAKE VALVE TIMING CONTROL

INTAKE VALVE TIMING CONTROL: System Diagram

INFOID:0000000011461403



INTAKE VALVE TIMING CONTROL: System Description

INFOID:0000000011461404

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM		ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed and piston position		Intake valve tim- ing control	Intake valve timing control solenoid valve
Camshaft position sensor (PHASE)				
Engine oil temperature sensor	Engine oil temperature			
Engine coolant temperature sensor	Engine coolant temperature			
Combination meter	CAN commu- nication	Vehicle speed		

Α

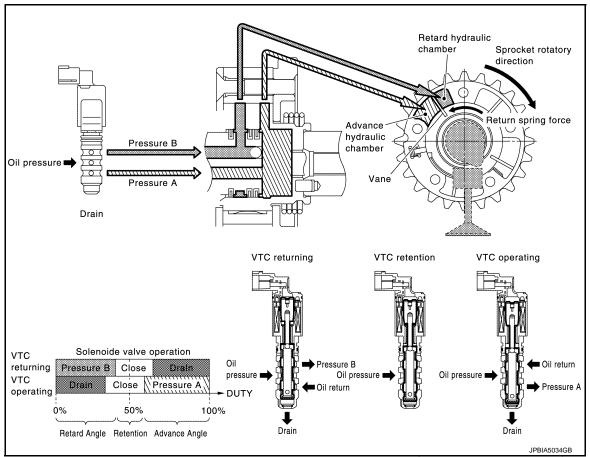
EC

D

K

Ν

SYSTEM DESCRIPTION

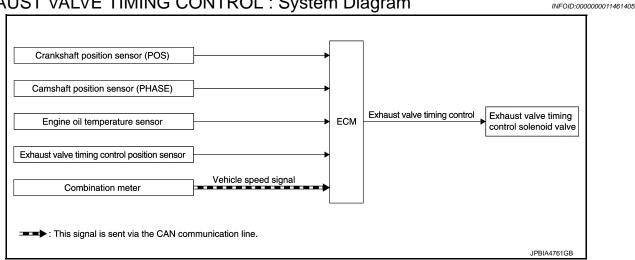


This mechanism hydraulically controls cam phases continuously with the fixed operating angle of the intakevalve.

The ECM receives signals such as crankshaft position, camshaft position, engine speed, and engine coolanttemperature. Then, the ECM sends ON/OFF pulse duty signals to the intake valve timing (IVT) control solenoid valve depending on driving status. This makes it possible to control the shut/open timing of the intake valve to increase engine torque in low/mid speed range and output in high-speed range.

EXHAUST VALVE TIMING CONTROL

EXHAUST VALVE TIMING CONTROL: System Diagram



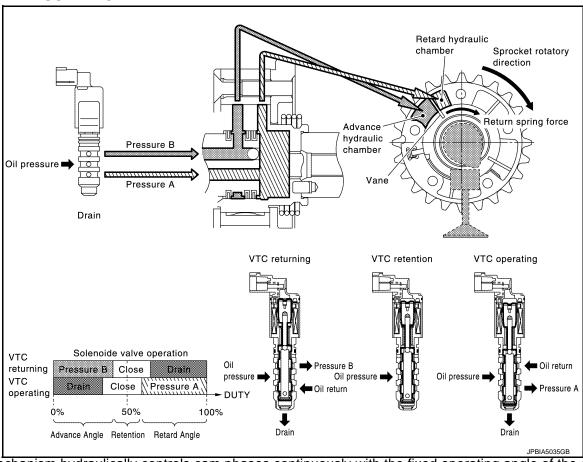
EXHAUST VALVE TIMING CONTROL: System Description

INFOID:0000000011461406

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM		ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed and piston position			
Camshaft position sensor (PHASE)				
Engine oil temperature sensor	Engine oil temperature		Exhaust valve timing control	Exhaust valve timing control solenoid valve
Exhaust valve timing control position sensor	Exhaust valve timing signal			
Combination meter	CAN commu- nication	Vehicle speed signal		

SYSTEM DESCRIPTION

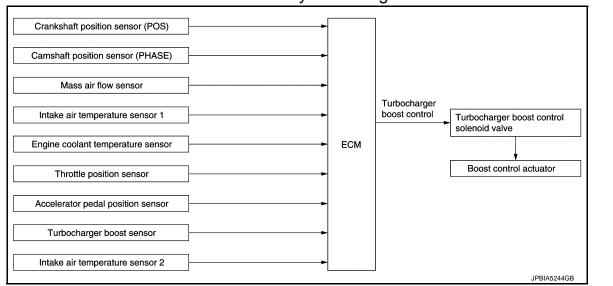


This mechanism hydraulically controls cam phases continuously with the fixed operating angle of the exhaust valve.

The ECM receives signals such as crankshaft position, camshaft position, engine speed, and engine oil temperature. Then, the ECM sends ON/OFF pulse duty signals to the exhaust valve timing (EVT) control solenoid valve depending on driving status. This makes it possible to control the shut/open timing of the exhaust valve to increase engine torque and output in a range of high engine speed.

TURBOCHARGER BOOST CONTROL

TURBOCHARGER BOOST CONTROL: System Diagram



TURBOCHARGER BOOST CONTROL: System Description

INFOID:0000000011461408

INFOID:0000000011461407

Α

EC

D

M

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator	
Crankshaft position sensor (POS)	Engine and d			
Camshaft position sensor (PHASE)	Engine speed			
Mass air flow sensor	Amount of intake air			
Intake air temperature sensor 1	Intake air temperature	Turbocharger boost control	Turbocharger boost control solenoid valve ↓ Boost control actuator	
Engine coolant temperature sensor	Engine coolant temperature			
Throttle position sensor	Throttle position			
Accelerator pedal position sensor	Accelerator pedal position			
Turbocharger boost sensor	Turbocharger boost			
Intake air temperature sensor 2	Intake air temperature			

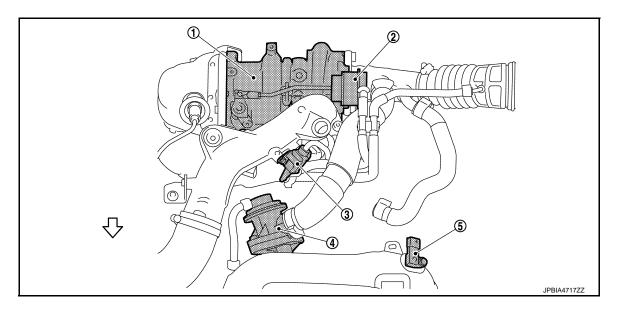
SYSTEM DESCRIPTION

Depending on driving conditions, the ECM performs ON/OFF duty control of the turbocharger boost control solenoid valve and controls the boost by adjusting the pressure to the diaphragm of the boost control actuator. When driving conditions demand an increase in boost, the ECM prolongs the ON time of the turbocharger boost control solenoid valve and moves the boost control valve towards the closing direction by reducing the pressure in the diaphragm of the boost control actuator. The emission gas to the turbine wheel is then increased. When driving conditions demand a decrease in boost, the ECM shortens the ON time of the turbocharger boost control solenoid valve and moves the boost control valve towards the opening position by increasing the pressure in the diaphragm of the boost control actuator. The emission bypassing to the turbine wheel is then increased. Thus, by performing the most optimal boost control, the ECM improves engine output and response.

NOTE:

The boost varies depending on the vehicle and driving conditions.

BOOST CONTROL ACTUATOR LINE DRAWING



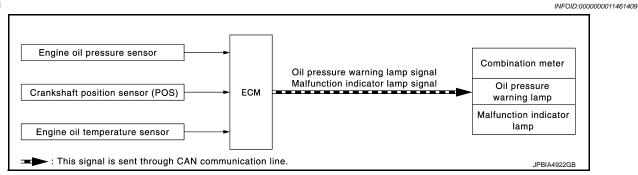
Turbocharger

- Boost control actuator
- Turbocharger boost control solenoid valve

- 4. Recirculation valve
- Turbocharger boost sensor (with intake air temperature sensor 2)

⟨□: Vehicle front

ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE : System Diagram INFOID:000000011461405



ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE : System Description

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator
Engine oil pressure sensor	Engine pressure	Engine protection control	
Crankshaft position sensor (POS)	Engine speed	Oil pressure warning lamp signal	
Engine oil temperature sensor	Engine oil temperature	FUel cut control	

SYSTEM DESCRIPTION

- The engine protection control at low engine oil pressure warns the driver of a decrease in engine oil pressure by the oil pressure warning lamp a before the engine becomes damaged.
- When detecting a decrease in engine oil pressure at an engine speed less than 1,000 rpm, ECM transmits
 an oil pressure warning lamp signal to the combination meter. The combination meter turns ON the oil pressure warning lamp, according to the signal.

Α

EC

D

Е

M

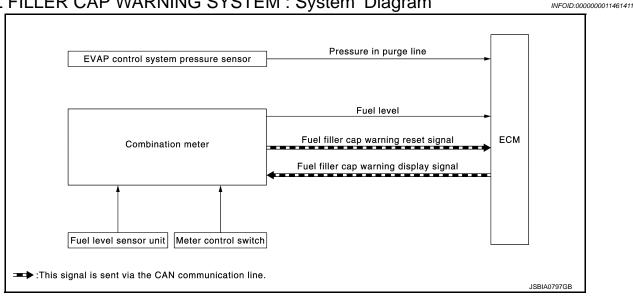
INFOID:0000000011461412

Decrease in engine oil	Engine speed	Combination meter	
pressure	Engine speed	Oil pressure warning lamp	
Detection	Less than 1,000 rpm	ON*	
Detection	1,000 rpm or more	ON	

*: When detecting a normal engine oil pressure, ECM turns OFF the oil pressure warning lamp.

FUEL FILLER CAP WARNING SYSTEM

FUEL FILLER CAP WARNING SYSTEM: System Diagram



FUEL FILLER CAP WARNING SYSTEM: System Description

INPUT/OUTPUT SIGNAL CHART

r	1	p	u	τ

Unit/Sensor	Input signal to ECM	ECM function
EVAP control system pressure sensor	Pressure in purge line	
Combination mater	Fuel level	Fuel filler cap warning control
Combination meter	Fuel filler cap warning reset signal*	

^{*:} This signal is sent to the ECM via the CAN communication line.

Output

Unit	Output signal	Actuator
ECM	Fuel filler cap warning display signal*	Combination meter

^{*:} This signal is sent to the combination meter via the CAN communication line.

SYSTEM DESCRIPTION

The fuel filler cap warning system alerts the driver to the prevention of the fuel filler being left uncapped and malfunction occurrences after refueling, by turning ON the fuel filler cap warning display on the combination

ECM judges a refueled state, based on a fuel level signal transmitted from the combination meter.

When a very small leak is detected through the EVAP leak diagnosis performed after judging the refueled state, ECM transmits a fuel filler cap warning display signal (request for display ON) to the combination meter via CAN communication.

When receiving the signal, the combination meter turns ON the fuel filler cap warning display.

Check fuel filler cap installation condition when the fuel filler cap warning display turns ON.

Reset Operation

The fuel filler cap warning lamp tunes OFF, according to any condition listed below:

- Reset operation is performed by operating the meter control switch on the combination meter. Refer to MWI-19, "Switch Name and Function".
- When the reset operation is performed, the combination meter transmits a fuel filler cap warning reset signal to ECM via CAN communication. ECM transmits a fuel filler cap warning display signal (request for display OFF) to the combination meter via CAN communication. When receiving the signal, the combination meter turns OFF the fuel filler cap warning display.
- EVAP leak diagnosis result is normal.
- · Fuel refilled.
- DTC erased by using CONSULT.

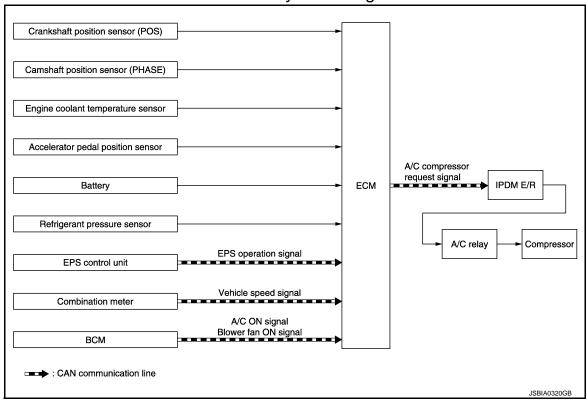
NOTE:

MIL turns ON if a malfunction is detected in leak diagnosis results again at the trip after the fuel filler cap warning display turns ON/OFF.

AIR CONDITIONING CUT CONTROL

AIR CONDITIONING CUT CONTROL: System Diagram

INFOID:0000000011461413



AIR CONDITIONING CUT CONTROL: System Description

INFOID:0000000011461414

INPUT/OUTPUT SIGNAL CHART

[MR FOR NISMO RS MODELS]

Α

D

Е

F

Ν

Р

Sensor	In	put Signal to ECM	ECM function	Actuator	
Crankshaft position sensor (POS)	*				_
Camshaft position sensor (PHASE)	Engine speed*				
Engine coolant temperature sensor	Engine coolan	Engine coolant temperature			
Accelerator pedal position sensor	Accelerator pedal position				
Battery	Battery voltage*			IPDM E/R ↓ Air conditioner relay	
Refrigerant pressure sensor	Refrigerant pressure		Air conditioner		
EPS control unit	CAN commu- nication	EPS operation signal	cut control	↓ Compressor	
Combination meter	CAN commu- nication	Vehicle speed signal			
BCM	CAN commu- nication	A/C ON signal			

^{*:} ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION

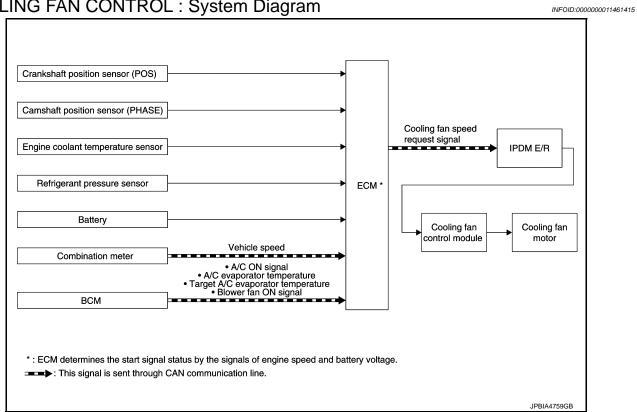
This system improves engine operation when the air conditioner is used.

Under the following conditions, the air conditioner is turned off.

- When the accelerator pedal is fully depressed.
- · When cranking the engine.
- At high engine speeds.
- When the engine coolant temperature becomes excessively high.
- When operating power steering during low engine speed or low vehicle speed.
- When engine speed is excessively low.
- When refrigerant pressure is excessively low or high.

COOLING FAN CONTROL

COOLING FAN CONTROL: System Diagram



COOLING FAN CONTROL: System Description

INFOID:0000000011461416

INPUT/OUTPUT SIGNAL CHART

Sensor	Inpu	t signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS)		Engine speed*		
Camshaft position sensor (PHASE)	Engine speed			
Engine coolant temperature sensor	Engine coolant	temperature	†	
Refrigerant pressure sensor	Refrigerant pre	essure	†	
Battery	Battery voltage	Battery voltage*		IPDM E/R
Combination meter	CAN commu- nication	Vehicle speed signal	Cooling fan control	Cooling fan control mod- ule
		A/C ON signal	_	↓ Cooling fan motor
ВСМ	CAN commu-	A/C evaporator temper- ature*		
	nication	Target A/C evaporator temperature*		
		Blower fan ON signal*		

^{*:} The ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION

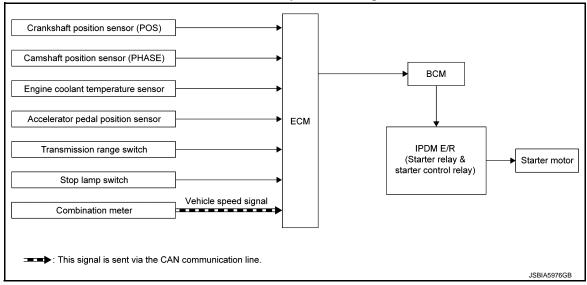
ECM controls cooling fan speed corresponding to vehicle speed, engine coolant temperature, A/C ON signal and refrigerant pressure.

Cooling fan control signal is sent to IPDM E/R from ECM by CAN communication line. Then, IPDM E/R sends ON/OFF pulse duty signal to cooling fan control module. Corresponding to this ON/OFF pulse duty signal, cooling fan control module gives cooling fan motor operating voltage to cooling fan motors. Cooling fan speed is controlled by duty cycle of cooling fan motor operating voltage sent from cooling fan control module.

STARTER MOTOR DRIVE CONTROL

STARTER MOTOR DRIVE CONTROL: System Diagram

INFOID:0000000011461417



STARTER MOTOR DRIVE CONTROL: System Description

INFOID:0000000011461418

INPUT/OUTPUT SIGNAL CHART

Α

D

Е

F

Н

N

Sensor	Input signal to ECM		ECM function	Actuator	
Crankshaft position sensor (POS)	Engine speed				
Camshaft position sensor (PHASE)	Piston positi	Piston position		BCM IPDM E/R (Starter relay & starter relay)	
Engine coolant temperature sensor	Engine coolant temperature		Starter motor drive control		
Accelerator pedal position sensor	Accelerator pedal position				
Transmission range switch	Gear position				
Stop lamp switch	Brake pedal position			or control relay)	
Combination meter	CAN commu- nication	Vehicle speed signal	1		

SYSTEM DESCRIPTION

When rapid deceleration occurs during engine runs or idle speed decreases due to heavy load conditions, ECM detects a decrease in idle speed and restarts the engine to secure reliability in handleability by transmitting a cranking request signal to IPDM E/R for activating the starter motor under the following conditions:

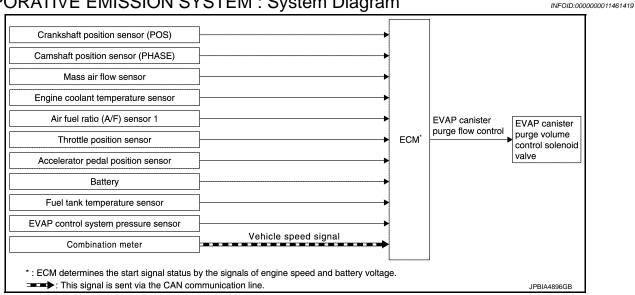
- Selector lever: P or any position other than N
- Idle switch: ON (Accelerator pedal not depressed)
- Brake switch: ON (Brake pedal depressed)

Models with the Intelligent Key System transmit a control signal to IPDM E/R by way of BCM via CAN communication.

IPDM E/R detects an operating state of the starter motor relay and the starter motor control relay and transmits a feed back signal to ECM via CAN Communication.

EVAPORATIVE EMISSION SYSTEM

EVAPORATIVE EMISSION SYSTEM: System Diagram



EVAPORATIVE EMISSION SYSTEM: System Description

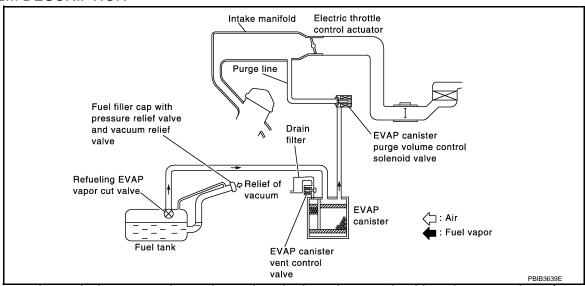
INFOID:0000000011461420

INPUT/OUTPUT SIGNAL CHART

Sensor		Input signal to ECM		Actuator
Crankshaft position sensor (POS)	Engine	speed*		
Camshaft position sensor (PHASE)	Piston	position		
Mass air flow sensor	Amount o	of intake air		
Engine coolant temperature sensor	Engine co	polant temperature		
Air fuel ratio (A/F) sensor 1	,	Density of oxygen in exhaust gas (Mixture ratio feedback signal)		EVAP canister purge vol-
Throttle position sensor	Throttle p	Throttle position		
Accelerator pedal position sensor	Accelerat	or pedal position	purge flow control	ume control solenoid valve
Battery	Battery vo	oltage*		
Fuel tank temperature sensor	Fuel temp	perature in fuel tank		
EVAP control system pressure sensor	Pressure	in purge line		
Combination meter	CAN commu- nication	Vehicle speed		

^{*:} ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION



The evaporative emission system is used to reduce hydrocarbons emitted into the atmosphere from the fuel system. This reduction of hydrocarbons is accomplished by activated charcoals in the EVAP canister.

The fuel vapor in the sealed fuel tank is led into the EVAP canister which contains activated carbon and the vapor is stored there when the engine is not operating or when refueling to the fuel tank.

The vapor in the EVAP canister is purged by the air through the purge line to the intake manifold when the engine is operating. EVAP canister purge volume control solenoid valve is controlled by ECM. When the engine operates, the flow rate of vapor controlled by EVAP canister purge volume control solenoid valve is proportionally regulated as the air flow increases.

EVAP canister purge volume control solenoid valve also shuts off the vapor purge line during decelerating.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

AUTOMATIC SPEED CONTROL DEVICE (ASCD): System Diagram INFOID:0000000011461421 Brake pedal position switch Stop lamp switch Clutch pedal position switch*1 ASCD vehicle ASCD steering switch speed control **ECM** Electric throttle control actuator Transmission range switch*2 Park/neutral position (PNP) switch*1 Vehicle speed signal Combination meter Outqut shaft revolution signal TCM^{*2}

AUTOMATIC SPEED CONTROL DEVICE (ASCD): System Description

INFOID:0000000011461422

Α

EC

D

Н

M

Ν

Р

INPUT/OUTPUT SIGNAL CHART

*1 : M/T models *2 : CVT models

: This signal is sent via the CAN communication line.

Sensor	Ir	nput signal to ECM	ECM function	Actuator
Brake pedal position switch	Dualia a a dal a			
Stop lamp switch	Brake pedal o	Deration		
Clutch pedal position switch*1	Clutch pedal operation			
ASCD steering switch	ASCD steering switch operation			
Transmission range switch*2			ASCD vehicle speed control	Electric throttle control actuator
Park/neutral position (PNP) switch*1	Gear position		Control	actuator
Combination meter	CAN commu- nication	Vehicle speed signal		
TCM ^{*2}	CAN commu- nication	Output shaft revolution signal		

^{*1:} M/T models

BASIC ASCD SYSTEM

Refer to Owner's Manual for ASCD operating instructions.

Automatic Speed Control Device (ASCD) allows a driver to keep vehicle at predetermined constant speed without depressing accelerator pedal. Driver can set vehicle speed in advance between approximately 40 km/h (25 MPH) and 144 km/h (90 MPH).

ECM controls throttle angle of electric throttle control actuator to regulate engine speed.

Operation status of ASCD is indicated by CRUISE indicator and SET indicator in combination meter. If any malfunction occurs in ASCD system, it automatically deactivates control.

Refer to <u>EC-70</u>, "<u>AUTOMATIC SPEED CONTROL DEVICE (ASCD)</u>: <u>Switch Name and Function"</u> for ASCD operating instructions.

NOTE:

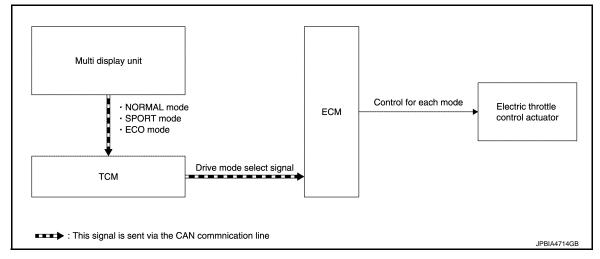
Always drive vehicle in safe manner according to traffic conditions and obey all traffic laws. INTEGRATED CONTROL SYSTEM

^{*2:} CVT models

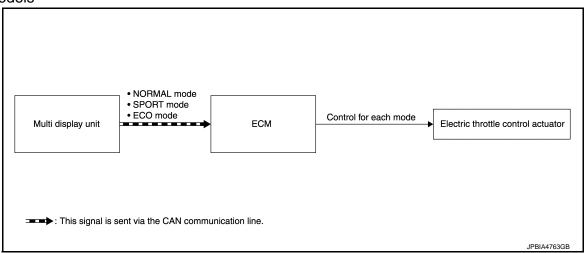
INTEGRATED CONTROL SYSTEM: System Diagram

INFOID:0000000011461423

CVT models



M/T models



INTEGRATED CONTROL SYSTEM: System Description

INFOID:0000000011461424

CVT models

System Description

TCM transmits a drive mode select signal to ECM via CAN communication, according to a NORMAL mode signal, SPORT mode signal, or ECO mode signal received from the multi display unit via CAN communication. ECM controls torque and throttle opening angle characteristics appropriate for each mode, based on a received drive mode select signal.

NOTE:

- Because of the multi display unit operation, the display may indicate that the mode is switching. However, the mode may not actually switch due to CAN communication error.
- When a CAN communication error occurs between ECM and TCM, the mode switches to NORMAL mode.

M/T models

System Description

ECM controls torque and throttle opening angle characteristics appropriate for each mode, based on a NOR-MAL mode signal, SPORT mode signal, or ECO mode signal received from the multi display unit via CAN communication.

NOTE:

• Because of the multi display unit operation, the display may indicate that the mode is switching. However, the mode may not actually switch due to CAN communication error.

SYSTEM

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

 When a CAN communication error occurs between ECM and the multi display unit, the mode switches to NORMAL mode.

Control By Mode

Mode	Control
NORMAL mode	Offers a better balance of fuel economy and traveling performance.
SPORT mode	Allows throttle opening angle change and torque control for obtaining reality and acceleration performance appropriate to a winding run.
ECO mode	Allows throttle opening angle change and torque control for assisting better fuel efficiency.

CAN COMMUNICATION

CAN COMMUNICATION: System Description

INFOID:0000000011461425

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Refer to LAN-30, "CAN COMMUNICATION SYSTEM: CAN Communication Signal Chart", about CAN communication for detail.

EC

Α

D

Е

F

G

Н

L

M

Ν

0

Р

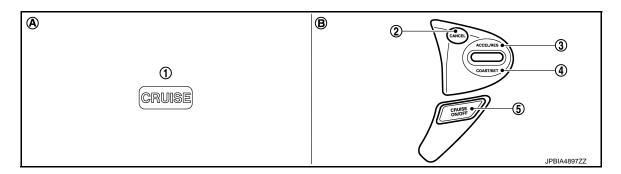
OPERATION

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

AUTOMATIC SPEED CONTROL DEVICE (ASCD): Switch Name and Function

INFOID:0000000011461426

SWITCHES AND INDICATORS



- 1. CRUISE indicator
- 2. CANCEL switch
- ACCEL/RES switch

- 4. COAST/SET switch
- ASCD MAIN switch
- A. On the combination meter
- B. On the steering wheel

SET SPEED RANGE

ASCD system can be set the following vehicle speed.

Minimum speed (Approx.)	Maximum speed (Approx.)
40 km/h (25 MPH)	144 km/h (90 MPH)

SWITCH OPERATION

Item	Function
CANCEL switch	Cancels the cruise control driving.
ACCEL/RES switch	Resumes the set speed. Increases speed incrementally during cruise control driving.
COAST/SET switch	Sets desired cruise speed.Decreases speed incrementally during cruise control driving.
ASCD MAIN switch	Master switch to activate the ASCD system.

SET OPERATION

Press MAIN switch. (The CRUISE indicator in combination meter illuminates.)

When vehicle speed reaches a desired speed between approximately 40 km/h (25 MPH) and 144 km/h (90 MPH), press COAST/SET switch.

ACCELERATE OPERATION

If the ACCEL/RES switch is pressed during the cruise control driving, increase the vehicle speed until the switch is released or vehicle speed reaches maximum speed controlled by the system. And then ASCD will keep the new set speed.

CANCEL OPERATION

- When any of following conditions exist, the cruise operation is canceled.
- CANCEL switch is pressed
- ASCD MAIN switch is pressed (Set speed is cleared)
- More than 2 switches at ASCD steering switch are pressed at the same time (Set speed is cleared)
- Brake pedal is depressed
- Clutch pedal is depressed or gear position is changed to neutral position. (M/T models)
- Selector lever is changed to N, P or R position (CVT models)
- Vehicle speed decreased to 13 km/h (8 MPH) lower than the set speed
- TCS system is operated

OPERATION

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

- When the ECM detects any of the following conditions, the ECM cancels the cruise operation and informs the driver by blinking CRUISE indicator lamp.
- Engine coolant temperature is slightly higher than the normal operating temperature, CRUISE indicator lamp is blinked slowly.

NOTE:

Engine coolant temperature decreases to the normal operating temperature, CRUISE indicator lamp stop blinking and the cruise operation is able to work.

- Malfunction for some self-diagnoses regarding ASCD control: CRUISE indicator will blink quickly.
- When ASCD MAIN switch is turned to OFF during the cruise control driving, all of ASCD operations is canceled and vehicle speed memory is erased.

COAST OPERATION

When the COAST/SET switch is pressed during the cruise control driving, decrease vehicle set speed until the switch is released. And then ASCD will keep the new set speed.

RESUME OPERATION

- When the ACCEL/RES switch is pressed after the cancel operation other than pressing ASCD MAIN switch is performed, vehicle speed is return to last set speed. To resume vehicle set speed, vehicle condition must meet following conditions.
- Brake pedal is released
- Clutch pedal is released (M/T models)
- Selector lever is in other than P and N positions (CVT models)
- Vehicle speed is greater than 40 km/h (25 MPH) and less than 144 km/h (90 MPH)

EC

Α

Е

D

F

Н

K

L

Ν

Р

ON BOARD DIAGNOSTIC (OBD) SYSTEM

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

ON BOARD DIAGNOSTIC (OBD) SYSTEM

Diagnosis Description

INFOID:0000000011461427

This system is an on board diagnostic system that records exhaust emission-related diagnostic information and detects a sensors/actuator-related malfunction. A malfunction is indicated by the malfunction indicator lamp (MIL) and stored in control module memory as a DTC. The diagnostic information can be obtained with the diagnostic tool (GST: Generic Scan Tool).

GST (Generic Scan Tool)

INFOID:0000000011461428

When GST is connected with a data link connector equipped on the vehicle side, it will communicate with the control module equipped in the vehicle and then enable various kinds of diagnostic tests. Refer to GI-52. "Description".

NOTE:

Service \$0A is not applied for regions where it is not mandated.

[MR FOR NISMO RS MODELS]

DIAGNOSIS SYSTEM (ECM) DIAGNOSIS DESCRIPTION

DIAGNOSIS DESCRIPTION: 1st Trip Detection Logic and Two Trip Detection Logic

INFOID:0000000011461429

When a malfunction is detected for the first time, 1st trip DTC and 1st trip Freeze Frame data are stored in the ECM memory. The MIL will not illuminate at this stage. <1st trip>

If the same malfunction is detected again during the next drive, the DTC and Freeze Frame data are stored in the ECM memory, and the MIL illuminates. The MIL illuminates at the same time when the DTC is stored. <2nd trip> The "trip" in the "Two Trip Detection Logic" means a driving mode in which self-diagnosis is performed during vehicle operation. Specific on board diagnostic items will cause the ECM to illuminate or blink the MIL, and store DTC and Freeze Frame data, even in the 1st trip, as shown below.

×: Applicable —: Not applicable

		M	IL		D	TC	1st trip DTC	
Items	1st trip		2nd trip		1st trip	2nd trip	1st trip	2nd trip
	Blinking	Illuminat- ed	Blinking	Illuminat- ed	displaying	displaying	displaying	display- ing
Misfire (Possible three way catalyst damage) — DTC: P0300 – P0304 is being detected	×	_	_	_	_	_	×	_
Misfire (Possible three way catalyst damage) — DTC: P0300 – P0304 is being detected	_	_	×	_	_	×	_	_
One trip detection diagnoses (Refer to EC-113, "DTC Index".)	_	×	_	_	×	_	_	_
Except above	_	_	_	×	_	×	×	_

DIAGNOSIS DESCRIPTION: DTC and Freeze Frame Data

INFOID:0000000011461430

DTC AND 1ST TRIP DTC

The 1st trip DTC (whose number is the same as the DTC number) is displayed for the latest self-diagnostic result obtained. If the ECM memory was cleared previously, and the 1st trip DTC did not recur, the 1st trip DTC will not be displayed.

If a malfunction is detected during the 1st trip, the 1st trip DTC is saved in the ECM memory. The MIL will not light up (two trip detection logic). If the same malfunction is not detected in the 2nd trip (meeting the required driving pattern), the 1st trip DTC is cleared from the ECM memory. If the same malfunction is detected in the 2nd trip, both the 1st trip DTC and DTC are saved in the ECM memory and the MIL lights up. In other words, the DTC is stored in the ECM memory and the MIL lights up when the same malfunction occurs in two consecutive trips. If a 1st trip DTC is stored and a non-diagnostic operation is performed between the 1st and 2nd trips, only the 1st trip DTC will continue to be stored. For malfunctions that blink or light up the MIL during the 1st trip, the DTC and 1st trip DTC are stored in the ECM memory.

For malfunctions in which 1st trip DTCs are displayed, refer to EC-113, "DTC Index". These items are required by legal regulations to continuously monitor the system/component. In addition, the items monitored non-continuously are also displayed on CONSULT.

1st trip DTC is specified in Service \$07 of SAE J1979/ISO 15031-5. 1st trip DTC detection occurs without illuminating the MIL and therefore does not warn the driver of a malfunction.

When a 1st trip DTC is detected, check, print out or write down and erase (1st trip) DTC and Freeze Frame data as specified in Work Flow procedure Step 2, refer to EC-144, "Work Flow". Then perform DTC Confirmation Procedure or Component Function Check to try to duplicate the malfunction. If the malfunction is duplicated, the item requires repair.

FREEZE FRAME DATA AND 1ST TRIP FREEZE FRAME DATA

The ECM records the driving conditions such as fuel system status, calculated load value, engine coolant temperature, short term fuel trim, long term fuel trim, engine speed, vehicle speed, absolute throttle position, base fuel schedule and intake air temperature at the moment a malfunction is detected.

Data which are stored in the ECM memory, along with the 1st trip DTC, are called 1st trip freeze frame data. The data, stored together with the DTC data, are called freeze frame data and displayed on CONSULT or GST. The 1st trip freeze frame data can only be displayed on the CONSULT screen.

EC

Α

Е

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

Only one set of freeze frame data (either 1st trip freeze frame data or freeze frame data) can be stored in the ECM. 1st trip freeze frame data is stored in the ECM memory along with the 1st trip DTC. There is no priority for 1st trip freeze frame data and it is updated each time a different 1st trip DTC is detected. However, once freeze frame data (2nd trip detection/MIL on) is stored in the ECM memory, 1st trip freeze frame data is no longer stored. Remember, only one set of freeze frame data can be stored in the ECM. The ECM has the following priorities to update the data.

Priority		Items							
1	Freeze frame data	Misfire — DTC: P0300 – P0304 Fuel Injection System Function — DTC: P0171							
2		Except the above items							
3	1st trip freeze frame data								

For example, the EGR malfunction (Priority: 2) was detected and the freeze frame data was saved in the 2nd trip. After that when the misfire (Priority: 1) is detected in another trip, the freeze frame data will be updated from the EGR malfunction to the misfire. The 1st trip freeze frame data is updated each time a different malfunction is detected. There is no priority for 1st trip freeze frame data. However, once freeze frame data is stored in the ECM memory, 1st trip freeze data is no longer stored (because only one freeze frame data or 1st trip freeze frame data can be stored in the ECM). If freeze frame data is stored in the ECM memory and freeze frame data with the same priority occurs later, the first (original) freeze frame data remains unchanged in the ECM memory.

Both 1st trip freeze frame data and freeze frame data (along with the DTCs) are cleared when the ECM memory is erased.

DIAGNOSIS DESCRIPTION: Counter System

INFOID:0000000011461431

RELATIONSHIP BETWEEN MIL, 1ST TRIP DTC, DTC, AND DETECTABLE ITEMS

- When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data are stored in the ECM memory.
- When the same malfunction is detected in two consecutive trips, the DTC and the freeze frame data are stored in the ECM memory, and the MIL will come on.
- The MIL will turn OFF after the vehicle is driven 3 times (driving pattern B) with no malfunction. The drive is counted only when the recorded driving pattern is met (as stored in the ECM). If another malfunction occurs while counting, the counter will reset.
- The DTC and the freeze frame data will be stored until the vehicle is driven 40 times (driving pattern A) without the same malfunction recurring (except for Misfire and Fuel Injection System). For Misfire and Fuel Injection System, the DTC and freeze frame data will be stored until the vehicle is driven 80 times (driving pattern C) without the same malfunction recurring. The "TIME" in "SELF-DIAGNOSTIC RESULTS" mode of CONSULT will count the number of times the vehicle is driven.
- The 1st trip DTC is not displayed when the self-diagnosis results in OK for the 2nd trip.

COUNTER SYSTEM CHART

Items	Fuel Injection System	Misfire	Other
MIL (turns OFF)	3 (pattern B)	3 (pattern B)	3 (pattern B)
DTC, Freeze Frame Data (no display)	80 (pattern C)	80 (pattern C)	40 (pattern A)
1st Trip DTC (clear)	1 (pattern C), *1	1 (pattern C), *1	1 (pattern B)
1st Trip Freeze Frame Data (clear)	*1, *2	*1, *2	1 (pattern B)

For details about patterns B and C under "Fuel Injection System" and "Misfire", see "EXPLANATION FOR DRIVING PATTERNS FOR "MISFIRE <EXHAUST QUALITY DETERIORATION>", "FUEL INJECTION SYSTEM".

For details about patterns A and B under Other, see "EXPLANATION FOR DRIVING PATTERNS FOR "MISFIRE <EXHAUST QUALITY DETERIORATION>", "FUEL INJECTION SYSTEM".

- *1: Clear timing is at the moment OK is detected.
- *2: Clear timing is when the same malfunction is detected in the 2nd trip.

Relationship Between MIL, DTC, 1st Trip DTC and Driving Patterns for "Misfire <Exhaust Quality Deterioration>", "Fuel Injection System"

Α

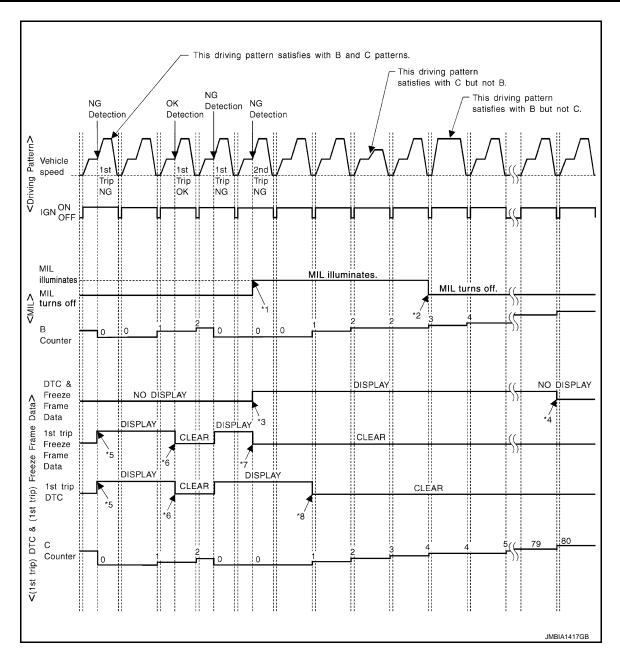
EC

D

M

Ν

Р



- *1: When the same malfunction is detected in two consecutive trips, MIL will light up.
- *4: The DTC and the freeze frame data will not be displayed any longer after vehicle is driven 80 times (pattern C) without the same malfunction. (The DTC and the freeze frame data still remain in ECM.)
- *7: When the same malfunction is detected in the 2nd trip, the 1st trip freeze frame data will be cleared.

- *2: MIL will turn OFF after vehicle is driv- *3: When the same malfunction is deen 3 times (pattern B) without any malfunctions.
- *5: When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data will be stored in ECM.
- *8: 1st trip DTC will be cleared when vehicle is driven once (pattern C) without the same malfunction after DTC is stored in ECM.
- tected in two consecutive trips, the DTC and the freeze frame data will be stored in ECM.
- *6: The 1st trip DTC and the 1st trip freeze frame data will be cleared at the moment OK is detected.

Explanation for Driving Patterns for "Misfire < Exhaust Quality Deterioration>", "Fuel Injection System"

Driving Pattern B

Refer to EC-77, "DIAGNOSIS DESCRIPTION: Driving Pattern".

Driving Pattern C

Refer to EC-77, "DIAGNOSIS DESCRIPTION: Driving Pattern".

Example:

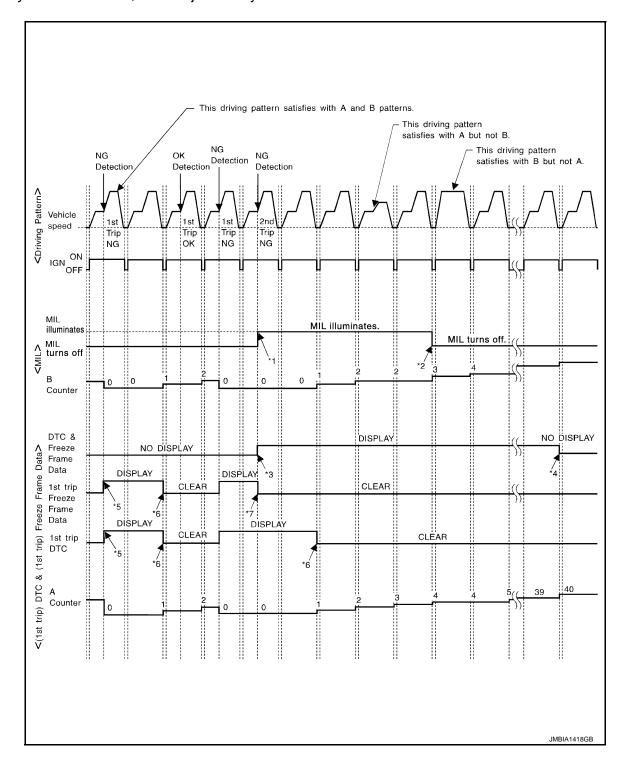
If the stored freeze frame data is as per the following:

Engine speed: 850 rpm, Calculated load value: 30%, Engine coolant temperature: 80°C (176°F)

To be satisfied with driving pattern C, the vehicle should run under the following conditions:

Engine speed: 475 - 1,225 rpm, Calculated load value: 27 - 33%, Engine coolant temperature: more than 70° C (158° F)

Relationship Between MIL, DTC, 1st Trip DTC and Driving Patterns Except For "Misfire <Exhaust Quality Deterioration>", "Fuel Injection System"



< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

*1: When the same malfunction is detected in two consecutive trips, MIL will light up.

*4: The DTC and the freeze frame data

will not be displayed any longer after

vehicle is driven 40 times (pattern A)

(The DTC and the freeze frame data

en 3 times (pattern B) without any malfunctions. *5: When a malfunction is detected for the first time, the 1st trip DTC and the

stored in ECM.

- *2: MIL will turn OFF after vehicle is driv- *3: When the same malfunction is detected in two consecutive trips, the DTC and the freeze frame data will be stored in ECM.
 - *6: 1st trip DTC will be cleared after vehicle is driven once (pattern B) without

the same malfunction.

EC

Α

D

*7: When the same malfunction is detected in the 2nd trip, the 1st trip freeze frame data will be cleared.

without the same malfunction.

still remain in ECM.)

Explanation for Driving Patterns Except for "Misfire < Exhaust Quality Deterioration>", "Fuel Injection System"

1st trip freeze frame data will be

Driving Pattern A

Refer to EC-77, "DIAGNOSIS DESCRIPTION: Driving Pattern".

Driving Pattern B

Refer to EC-77, "DIAGNOSIS DESCRIPTION: Driving Pattern".

DIAGNOSIS DESCRIPTION: Driving Pattern

INFOID:0000000011461432

CAUTION:

Always drive at a safe speed.

DRIVING PATTERN A

Driving pattern A means a trip satisfying the following conditions.

- Engine speed reaches 400 rpm or more.
- Engine coolant temperature rises by 20°C (36°F) or more after starting the engine.
- Engine coolant temperature reaches 70°C (158°F) or more.
- The ignition switch is turned from ON to OFF.

- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern A.

DRIVING PATTERN B

Driving pattern B means a trip satisfying the following conditions.

- Engine speed reaches 400 rpm or more.
- Engine coolant temperature reaches 70°C (158°F) or more.
- Vehicle speed of 70 120 km/h (44 75 MPH) is maintained for 60 seconds or more under the control of closed loop.
- Vehicle speed of 30 60 km/h (19 37 MPH) is maintained for 10 seconds or more under the control of closed loop.
- Under the closed loop control condition, the following state reaches 12 seconds or more in total: Vehicle speed of 4 km/h (2 MPH) or less with idling condition.
- The state of driving at 10 km/h (7 MPH) or more reaches 10 minutes or more in total.
- A lapse of 22 minutes or more after engine start.

NOTE:

- Drive the vehicle at a constant velocity.
- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern B.

DRIVING PATTERN C

Driving pattern C means operating vehicle as per the following:

The following conditions should be satisfied at the same time:

Engine speed: (Engine speed in the freeze frame data) ±375 rpm

EC-77 Revision: 2014 October 2015 JUKE

Е

F

Н

L

Ν

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

Calculated load value: (Calculated load value in the freeze frame data) x (1±0.1) [%] Engine coolant temperature condition:

- When the freeze frame data shows lower than 70°C (158°F), engine coolant temperature should be lower than 70°C (158°F).
- When the freeze frame data shows higher than or equal to 70°C (158°F), engine coolant temperature should be higher than or equal to 70°C (158°F).

NOTE:

- When the same malfunction is detected regardless of the above vehicle conditions, reset the counter of driving pattern C.
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern C.
- The 1st trip DTC will be cleared when C counter is counted once without the same malfunction after DTC is stored in ECM.

DRIVING PATTERN D

Driving pattern D means a trip satisfying the following conditions.

- The state of driving at 40 km/h (25 MPH) reaches 300 seconds or more in total.
- Idle speed lasts 30 seconds or more.
- A lapse of 600 seconds or more after engine start.

NOTE:

- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern D.
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern D.

DIAGNOSIS DESCRIPTION: System Readiness Test (SRT) Code

INFOID:0000000011461433

System Readiness Test (SRT) code is specified in Service \$01 of SAE J1979/ISO 15031-5.

As part of an enhanced emissions test for Inspection & Maintenance (I/M), certain states require the status of SRT be used to indicate whether the ECM has completed self-diagnosis of major emission systems and components. Completion must be verified in order for the emissions inspection to proceed.

If a vehicle is rejected for a State emissions inspection due to one or more SRT items indicating "INCMP", use the information in this Service Manual to set the SRT to "CMPLT".

In most cases the ECM will automatically complete its self-diagnosis cycle during normal usage, and the SRT status will indicate "CMPLT" for each application system. Once set as "CMPLT", the SRT status remains "CMPLT" until the self-diagnosis memory is erased.

Occasionally, certain portions of the self-diagnostic test may not be completed as a result of the customer's normal driving pattern; the SRT will indicate "INCMP" for these items.

NOTE:

The SRT will also indicate "INCMP" if the self-diagnosis memory is erased for any reason or if the ECM memory power supply is interrupted for several hours.

If, during the state emissions inspection, the SRT indicates "CMPLT" for all test items, the inspector will continue with the emissions test. However, if the SRT indicates "INCMP" for one or more of the SRT items the vehicle is returned to the customer untested.

NOTE:

If permanent DTC is stored or MIL illuminates during the state emissions inspection, the vehicle is also returned to the customeruntested even though the SRT indicates "CMPLT" for all test items. therefore, it is important to check SRT ("CMPLT"), DTC (No DTCs) and permanent DTC (No permanent DTC) before the inspection.

SRT SET TIMING

SRT is set as "CMPLT" after self-diagnosis has been performed one or more times. Completion of SRT is done regardless of whether the result is OK or NG. The set timing is different between OK and NG results and is shown in the table below.

		Example								
Self-diagno	osis result	Diagnosis	← ON → (on cycle $OFF \leftarrow ON ightarrow OF$	FF ← ON →				
All OK	Case 1	P0400	OK (1)	—(1)	OK (2)	— (2)				
		P0402	OK (1)	— (1)	— (1)	OK (2)				
		P1402	OK (1)	OK (2)	— (2)	— (2)				
		SRT of EGR	"CMPLT"	"CMPLT"	"CMPLT"	"CMPLT"				
	Case 2	P0400	OK (1)	—(1)	— (1)	— (1)				
		P0402	— (0)	— (0)	OK (1)	— (1)				
		P1402	OK (1)	OK (2)	— (2)	— (2)				
		SRT of EGR	"INCMP"	"INCMP"	"CMPLT"	"CMPLT"				
NG exists	Case 3	P0400	OK	ОК	_	_				
		P0402	_	_	_	_				
		P1402	NG	_	NG	NG (Consecutive NG)				
		(1st trip) DTC	1st trip DTC	_	1st trip DTC	DTC (= MIL ON)				
		SRT of EGR	"INCMP"	"INCMP"	"INCMP"	"CMPLT"				

OK: Self-diagnosis is carried out and the result is OK.

NG: Self-diagnosis is carried out and the result is NG.

—: Self-diagnosis is not carried out.

When all SRT related self-diagnoses show OK results in a single cycle (Ignition OFF-ON-OFF), the SRT will indicate "CMPLT". → Case 1 above

When all SRT related self-diagnoses show OK results through several different cycles, the SRT will indicate "CMPLT" at the time the respective self-diagnoses have at least one OK result. \rightarrow Case 2 above

If one or more SRT related self-diagnoses show NG results in 2 consecutive cycles, the SRT will also indicate "CMPLT". \rightarrow Case 3 above

The table above shows that the minimum number of cycles for setting SRT as "INCMP" is the number one (1) for each self-diagnosis (Case 1 & 2) or the number two (2) for one of self-diagnoses (Case 3). However, in preparation for the state emissions inspection, it is unnecessary for each self-diagnosis to be executed twice (Case 3) for the following reasons:

- The SRT will indicate "CMPLT" at the time the respective self-diagnoses have one (1) OK result.
- The emissions inspection requires "CMPLT" of the SRT only with OK self-diagnosis results.
- During SRT driving pattern, the 1st trip DTC (NG) is detected prior to "CMPLT" of SRT and the self-diagnosis memory must be erased from the ECM after repair.
- If the 1st trip DTC is erased, all the SRT will indicate "INCMP".

NOTE:

SRT can be set as "CMPLT" together with the DTC(s). Therefore, DTC check must always be carried out prior to the state emission inspection even though the SRT indicates "CMPLT".

DIAGNOSIS DESCRIPTION: Permanent Diagnostic Trouble Code (Permanent DTC)

INFOID:0000000011461434

Permanent DTC is defined in SAE J1979/ISO 15031-5 Service \$0A.

ECM stores a DTC issuing a command of turning on MIL as a permanent DTC and keeps storing the DTC as a permanent DTC until ECM judges that there is no presence of malfunction.

Permanent DTCs cannot be erased by using the erase function of CONSULT or Generic Scan Tool (GST) and by disconnecting the battery to shut off power to ECM. This prevents a vehicle from passing the in-use inspection without repairing a malfunctioning part.

When not passing the in-use inspection due to more than one permanent DTC, permanent DTCs should be erased, referring to this manual.

NOTE:

- The important items in in-use inspection are that MIL is not ON, SRT test items are set, and permanent DTCs are not included.
- Permanent DTCs do not apply for regions that permanent DTCs are not regulated by law.

EC-79 Revision: 2014 October 2015 JUKE

EC

Α

Е

Н

M

Ν

ENGINE

PERMANENT DTC SET TIMING

The setting timing of permanent DTC is stored in ECM with the lighting of MIL when a DTC is confirmed.

DIAGNOSIS DESCRIPTION: Malfunction Indicator Lamp (MIL)

INFOID:0000000011461435

When emission-related ECU detects a malfunction in the emission control systems components and/or the powertrain control components (which affect vehicle emissions), it turns on/blinks MIL to inform the driver that a malfunction has been detected.

1. The MIL illuminates when ignition switch is turned ON (engine is not running).

NOTE:

Check the MIL circuit if MIL does not illuminate. Refer to <u>EC-563</u>, "Diagnosis Procedure".

2. When the engine is started, the MIL should go off.

NOTE:

If MIL continues to illuminate/blink, perform self-diagnoses and inspect/repair accordingly because an emission-related ECU has detected a malfunction in the emission control systems components and/or the powertrain control components (which affect vehicle emissions).

On Board Diagnosis Function

INFOID:0000000011461436

ON BOARD DIAGNOSIS ITEM

The on board diagnostic system has the following functions.

Diagnostic test mode	Function
Bulb check	MIL can be checked.
SRT status	ECM can read if SRT codes are set.
Malfunction warning	If ECM detects a malfunction, it illuminates or blinks MIL to inform the driver that a malfunction has been detected.
Self-diagnostic results	DTCs or 1st trip DTCs stored in ECM can be read.
Accelerator pedal released position learning	ECM can learn the accelerator pedal released position. Refer to EC-156, "Work Procedure".
Throttle valve closed position learning	ECM can learn the throttle valve closed position. Refer to <u>EC-157</u> , "Work <u>Procedure"</u> .
Idle air volume learning	ECM can learn the idle air volume. Refer to EC-158, "Work Procedure".
Mixture ratio self-learning value clear	Mixture ratio self-learning value can be erased. Refer to <u>EC-161, "Work Procedure"</u> .

BULB CHECK MODE

Description

This function allows damage inspection in the MIL bulb (blown, open circuit, etc.).

Operation Procedure

- Turn ignition switch ON.
- 2. The MIL on the instrument panel should stay ON.

 If it remains OFF, check MIL circuit. Refer to EC-563, "Diagnosis Procedure".

SRT STATUS MODE

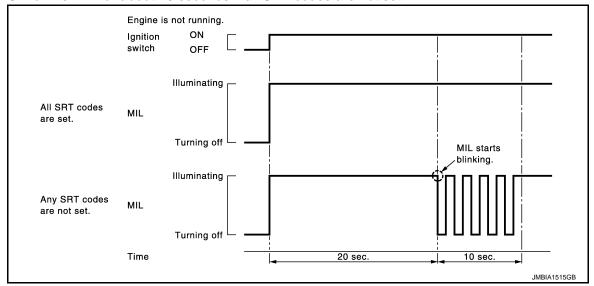
Description

This function allows to read if ECM has completed the self-diagnoses of major emission control systems and components. For SRT, refer to EC-78, "DIAGNOSIS DESCRIPTION: System Readiness Test (SRT) Code".

Operation Procedure

- Turn ignition switch ON and wait 20 seconds.
- 2. SRT status is indicated as shown blow.
 - ECM continues to illuminate MIL if all SRT codes are set.

ECM blinks MIL for about 10 seconds if all SRT codes are not set.



MALFUNCTION WARNING MODE

Description

In this function ECM turns on or blinks MIL when it detects a malfunction in the emission control system components and/or the powertrain control components (which affect vehicle emissions) to inform the driver that a malfunction has been detected.

Operation Procedure

- Turn ignition switch ON.
- Check that MIL illuminates. If it remains OFF, check MIL circuit. Refer to EC-563, "Diagnosis Procedure".
- Start engine and let it idle.
 - For two trip detection logic diagnoses, ECM turns on MIL when it detects the same malfunction twice in the two consecutive driving cycles.
 - For 1st trip detection logic diagnoses, ECM turns on MIL when it detects a malfunction in one driving
 - ECM blinks MIL when it detects a malfunction that may damage the three way catalyst (misfire).

SELF-DIAGNOSTIC RESULTS MODE

Description

This function allows to indicate DTCs or 1st trip DTCs stored in ECM according to the number of times MIL is blinking.

How to Set Self-diagnostic Results Mode

NOTE:

- It is better to count the time accurately with a clock.
- It is impossible to switch the diagnostic mode when an accelerator pedal position sensor circuit has a malfunction.
- After ignition switch is turned off, ECM is always released from the "self-diagnostic results" mode.
- Confirm that accelerator pedal is fully released, turn ignition switch ON and wait 3 seconds.
- Repeat the following procedure quickly five times within 5 seconds.
 - Fully depress the accelerator pedal.
 - Fully release the accelerator pedal.
- 3. Wait 7 seconds, fully depress the accelerator pedal and keep it depressed for approx. 10 seconds until the MIL starts blinking.

NOTE:

Do not release the accelerator pedal for 10 seconds if MIL starts blinking during this period. This blinking is displaying SRT status and is continued for another 10 seconds.

Fully release the accelerator pedal. ECM has entered to "Self-diagnostic results" mode.

EC-81 Revision: 2014 October 2015 JUKE

Α

EC

F

Н

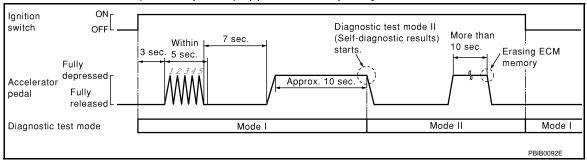
K

L

M

NOTE:

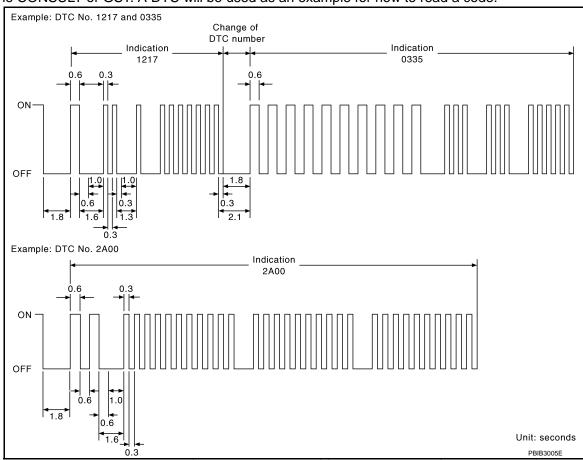
Wait until the same DTC (or 1st trip DTC) appears to completely confirm all DTCs.



How to Read Self-diagnostic Results

The DTC and 1st trip DTC are indicated by the number of blinks of the MIL as shown below.

The DTC and 1st trip DTC are displayed at the same time. If the MIL does not illuminate in diagnostic test mode I (Malfunction warning), all displayed items are 1st trip DTCs. If only one code is displayed when the MIL illuminates in "malfunction warning" mode, it is a DTC; if two or more codes are displayed, they may be either DTCs or 1st trip DTCs. DTC No. is same as that of 1st trip DTC. These unidentified codes can be identified by using the CONSULT or GST. A DTC will be used as an example for how to read a code.



A particular trouble code can be identified by the number of four-digit numeral flashes per the following.

Number	0	1	2	3	4	5	6	7	8	9	Α	В	С	D	Е	F
Flashes	10	1	2	3	4	5	6	7	8	9	11	12	13	14	15	16

The length of time the 1,000th-digit numeral flashes on and off is 1.2 seconds consisting of an ON (0.6-seconds) - OFF (0.6-seconds) cycle.

The 100th-digit numeral and lower digit numerals consist of a 0.3-seconds ON and 0.3-seconds OFF cycle. A change from one digit numeral to another occurs at an interval of 1.0-second OFF. In other words, the later numeral appears on the display 1.3 seconds after the former numeral has disappeared.

A change from one trouble code to another occurs at an interval of 1.8-seconds OFF.

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

In this way, all the detected malfunctions are classified by their DTC numbers. The DTC 0000 refers to no malfunction. Refer to <u>EC-113</u>, "<u>DTC Index</u>".

How to Erase Self-diagnostic Results

By performing this procedure, ECM memory is erased and the following diagnostic information is erased as well.

- Diagnostic trouble codes
- 1st trip diagnostic trouble codes
- Freeze frame data
- 1st trip freeze frame data
- System readiness test (SRT) codes
- Test values

NOTE:

Also, if a battery terminal is disconnected, ECM memory is erased and the diagnostic information as listed above is erased. (The amount of time required for erasing may vary from a few seconds to several hours.)

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 5. Set ECM in "self-diagnostic results" mode.
- The diagnostic information has been erased from the backup memory in the ECM. Fully depress the accelerator pedal and keep it depressed for more than 10 seconds.
- 7. Fully release the accelerator pedal, and confirm the DTC 0000 is displayed.

CONSULT Function

INFOID:0000000011461437

FUNCTION

Diagnostic test mode	Function
Self Diagnostic Results	Self-diagnostic results such as 1st trip DTC, DTCs and 1st trip freeze frame data or freeze frame data can be read and erased quickly.*
Data Monitor	Input/Output data in the ECM can be read.
Work support	This mode enables a technician to adjust some devices faster and more accurately by following the indications on the CONSULT unit.
Active Test	Diagnostic Test Mode in which CONSULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.
ECU Identification	ECM part number can be read.
DTC Work Support	The status of system monitoring tests and the self-diagnosis status/results can be confirmed.

^{*:} The following emission-related diagnostic information is cleared when the ECM memory is erased.

- · Diagnostic trouble codes
- · 1st trip diagnostic trouble codes
- · Freeze frame data
- 1st trip freeze frame data
- System readiness test (SRT) codes
- Test values

SELF DIAGNOSTIC RESULTS MODE

Self Diagnostic Item

Regarding items of DTC and 1st trip DTC, refer to EC-113, "DTC Index".

How to Read DTC and 1st Trip DTC

DTCs and 1st trip DTCs related to the malfunction are displayed in "self-diag results".

- When ECM detects a 1st trip DTC, "1t" is displayed for "TIME".
- When ECM has detected a current DTC, "0" is displayed for "TIME".
- If "TIME" is neither "0" nor "1t", the DTC occurred in the past and ECM shows the number of times the vehicle has been driven since the last detection of the DTC.

EC

Α

D

Е

F

G

37 H

J

K

N.I.

Ν

0

Р

.

2015 JUKE

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

How to Erase DTC and 1st Trip DTC

NOTE:

- If the ignition switch stays ON after repair work, be sure to turn ignition switch OFF once. Wait at least 10 seconds and then turn it ON (engine stopped) again.
- If the DTC is not for CVT related items (see <u>EC-113, "DTC Index"</u>), skip step 1.
- 1. Erase DTC in TCM. Refer to TM-188, "CONSULT Function".
- Select "ENGINE" with CONSULT.
- Select "SELF-DIAG RESULTS".
- 4. Touch "ERASE". (DTC in ECM will be erased.)

Freeze Frame Data and 1st Trip Freeze Frame Data

Freeze frame data item*	Description
DIAG TROUBLE CODE [PXXXX]	The engine control component part/control system has a trouble code the is displayed as PXXXX. (Refer to EC-113, "DTC_Index".)
FUEL SYS-B1	"Fuel injection system status" at the moment a malfunction is detected is displayed.
FUEL SYS-B2	One of the following mode is displayed. Mode2: Open loop due to detected system malfunction Mode3: Open loop due to driving conditions (power enrichment, deceleration enleanment) Mode4: Closed loop - using oxygen sensor(s) as feedback for fuel control Mode5: Open loop - has not yet satisfied condition to go to closed loop
CAL/LD VALUE [%]	The calculated load value at the moment a malfunction is detected is displayed.
COOLANT TEMP [°C] or [°F]	The engine coolant temperature at the moment a malfunction is detected is displayed.
L-FUEL TRM-B1 [%]	"Long-term fuel trim" at the moment a malfunction is detected is displayed.
L-FUEL TRM-B2 [%]	The long-term fuel trim indicates much more gradual feedback compensation to the base fuel schedule than short-term fuel trim.
S-FUEL TRM-B1 [%]	"Short-term fuel trim" at the moment a malfunction is detected is displayed.
S-FUEL TRM-B2 [%]	The short-term fuel trim indicates dynamic or instantaneous feedback compensation to the base fuel schedule.
ENGINE SPEED [rpm]	The engine speed at the moment a malfunction is detected is displayed.
VEHICL SPEED [km/h] or [mph]	The vehicle speed at the moment a malfunction is detected is displayed.
ABSOL TH-P/S [%]	The throttle valve opening angle at the moment a malfunction is detected is displayed.
B/FUEL SCHDL [msec]	The base fuel schedule at the moment a malfunction is detected is displayed.
INT/A TEMP SE [°C] or [°F]	The intake air temperature at the moment a malfunction is detected is displayed.
INT MANI PRES [kPa]	
COMBUST CONDI- TION	These items are displayed but are not applicable to this model.

^{*:} The items are the same as those of 1st trip freeze frame data.

DATA MONITOR MODE

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

Monitored Item

For reference values of the following items, refer to <u>EC-94</u>, "Reference Value".

[MR FOR NISMO RS MODELS]

×: Applicable

		Monitor Item Selection			
Monitored item Unit	Unit	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	Description	Remarks
ENG SPEED	rpm	×	×	Indicates the engine speed computed from the signal of the crankshaft position sensor (POS) and camshaft position sensor (PHASE).	 Accuracy becomes poor if engine speed drops below the idle rpm. If the signal is interrupted while the engine is running, an abnormal value may be indicated.
MAS A/F SE-B1	V	×	×	The signal voltage of the mass air flow sensor is displayed.	 When the engine is stopped, a certain value is indicated. When engine is running specification range is indi- cated in "SPEC".
B/FUEL SCHDL	msec	×	×	"Base fuel schedule" indicates the fuel injection pulse width programmed into ECM, prior to any learned on board correction.	When engine is running specification range is indicated in "SPEC".
A/F ALPHA-B1	%			The mean value of the air-fuel ratio feedback correction factor per cycle is indicated.	 When the engine is stopped, a certain value is indicated. When engine is running specification range is indicated in "SPEC". This data also includes the data for the air-fuel ratio learning control.
COOLANT TEMP/S	°C or °F	×	×	The engine coolant temperature (determined by the signal voltage of the engine coolant temperature sensor) is displayed.	When the engine coolant temperature sensor is open or short-circuited, ECM enters fail-safe mode. The engine coolant temperature determined by the ECM is displayed.
A/F SEN1 (B1)	V	×	×	The A/F signal computed from the input signal of the air fuel ratio (A/F) sensor 1 is displayed.	
HO2S2 (B1)	V	×	×	The signal voltage of the heated oxygen sensor 2 is displayed.	
HO2S2 MNTR(B1)	RICH/LEAN		×	 Display of heated oxygen sensor 2 signal: RICH: means the amount of oxygen after three way catalyst is relatively small. LEAN: means the amount of oxygen after three way catalyst is relatively large. 	When the engine is stopped, a certain value is indicated.
VHCL SPEED SE	km/h or mph	×	×	The vehicle speed computed from the vehicle speed signal sent from combination meter is displayed.	
BATTERY VOLT	V			The power supply voltage of ECM is displayed.	

			em Selec- on		
Monitored item	Unit	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	Description	Remarks
ACCEL SEN 1				The second secon	ACCEL SEN 2 signal is con-
ACCEL SEN 2	V			The accelerator pedal position sensor signal voltage is displayed.	verted by ECM internally. Thus, it differs from ECM terminal voltage signal.
TP SEN 1-B1		×	×	The throttle position sensor signal volt-	TP SEN 2-B1 signal is converted by ECM internally.
TP SEN 2-B1	V	×	×	age is displayed.	Thus, it differs from ECM terminal voltage signal.
FUEL T/TMP SE	°C or °F			The fuel temperature (determined by the signal voltage of the fuel tank temperature sensor) is displayed.	
EVAP SYS PRES	V			The signal voltage of EVAP control system pressure sensor is displayed.	
FUEL LEVEL SE	V	×		The signal voltage of the fuel level sensor is displayed.	
START SIGNAL	ON/OFF			Indicates start signal status [ON/OFF] computed by the ECM according to the signals of engine speed and battery voltage.	After starting the engine, [OFF] is displayed regardless of the starter signal.
CLSD THL POS	ON/OFF	×	×	Indicates idle position [ON/OFF] computed by ECM according to the accelerator pedal position sensor signal.	
AIR COND SIG	ON/OFF	×	×	Indicates [ON/OFF] condition of the air conditioner switch as determined by the air conditioner signal.	
PW/ST SIGNAL	ON/OFF	×	×	[ON/OFF] condition of the power steering system (determined by the signal sent from EPS control unit) is indicated.	
LOAD SIGNAL	ON/OFF	×	×	Indicates [ON/OFF] condition from the electrical load signal. ON: Rear window defogger switch is ON and/or lighting switch is in 2nd position. OFF: Both rear window defogger switch and lighting switch are OFF.	
IGNITION SW	ON/OFF	×	×	Indicates [ON/OFF] condition from ignition switch signal.	
HEATER FAN SW	ON/OFF	×		Indicates [ON/OFF] condition from the heater fan switch signal.	
BRAKE SW	ON/OFF			Indicates [ON/OFF] condition from the stop lamp switch signal.	
IGN TIMING	BTDC		×	Indicates the ignition timing computed by ECM according to the input signals.	When the engine is stopped, a certain value is indicated.
COMBUSTION	_			These items are displayed but are not applicable to this model.	
CAL/LD VALUE	%			"Calculated load value" indicates the value of the current airflow divided by peak airflow.	
MASS AIRFLOW	g/s			Indicates the mass airflow computed by ECM according to the signal voltage of the mass airflow sensor.	

< SYSTEM DESCRIPTION >

		Monitor Ite	em Selec- on			А
Monitored item	Unit	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	Description	Remarks	EC
PURG VOL C/V	%			 Indicates the EVAP canister purge volume control solenoid valve con- trol value computed by the ECM ac- cording to the input signals. The opening becomes larger as the value increases. 		C
INT/V TIM(B1)	°CA			Indicates [°CA] of intake camshaft advance angle.		
EXHV TIM B1	°CA			Indicates [°CA] of exhaust camshaft advance angle.		Е
INT/V SOL(B1)	%			The control value of the intake valve timing control solenoid valve (determined by ECM according to the input signals) is indicated. The advance angle becomes larger as the value increases.		F
AIR COND RLY	ON/OFF			The air conditioner relay control condition (determined by ECM according to the input signals) is indicated.		Н
FUEL PUMP RLY	ON/OFF			Indicates the fuel pump relay control condition determined by ECM according to the input signals.		
VENT CONT/V	ON/OFF			The control condition of the EVAP canister vent control valve (determined by ECM according to the input signals) is displayed. ON: Closed OFF: Open		J
THRTL RELAY	ON/OFF			Indicates the throttle control motor relay control condition determined by the ECM according to the input signals.		K
HO2S2 HTR (B1)	ON/OFF			Indicates [ON/OFF] condition of heat- ed oxygen sensor 2 heater determined by ECM according to the input signals.		L
ALT DUTY SIG	ON/OFF			The control condition of the power generation voltage variable control (determined by ECM according to the input signals) is indicated. ON: Power generation voltage variable control is active. OFF: Power generation		M
I/P PULLY SPD	rpm			Indicates the engine speed computed from the input speed sensor signal.		0
VEHICLE SPEED	km/h or mph			The vehicle speed computed from the vehicle speed signal sent from TCM is displayed.		Р
IDL A/V LEARN	YET/CMPLT			Display the condition of Idle Air Volume Learning YET: Idle air volume learning has not been performed yet. CMPLT: Idle air volume learning has already been performed successfully.		r

		Monitor Ite			
Monitored item	Unit	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	Description	Remarks
TRVL AFTER MIL	km/h or mph			Distance traveled while MIL is activated.	
ENG OIL TEMP	°C or °F			The engine oil temperature (determined by the signal voltage of the engine oil temperature sensor) is displayed.	
A/F S1 HTR(B1)	%			 Air fuel ratio (A/F) sensor 1 heater control value computed by ECM according to the input signals. The current flow to the heater becomes larger as the value increases. 	
VHCL SPEED SE	km/h or mph			The vehicle speed computed from the vehicle speed signal sent from combination meter is displayed.	
SET VHCL SPD	km/h or mph			The preset vehicle speed is displayed.	
MAIN SW	ON/OFF			Indicates [ON/OFF] condition from ASCD MAIN switch signal.	
CANCEL SW	ON/OFF			Indicates [ON/OFF] condition from CANCEL switch signal.	
RESUME/ACC SW	ON/OFF			Indicates [ON/OFF] condition from ACCEL/RES switch signal.	
SET SW	ON/OFF			Indicates [ON/OFF] condition from COAST/SET switch signal.	
BRAKE SW1	ON/OFF			Indicates [ON/OFF] condition from brake pedal position switch signal.	
BRAKE SW2	ON/OFF			Indicates [ON/OFF] condition of stop lamp switch signal.	
VHCL SPD CUT	NON/CUT			Indicates the vehicle cruise condition. NON: Vehicle speed is maintained at the ASCD set speed. CUT: Vehicle speed decreased to excessively low compared with the ASCD set speed, and ASCD operation is cut off.	
LO SPEED CUT	NON/CUT			Indicates the vehicle cruise condition. NON: Vehicle speed is maintained at the ASCD set speed. CUT: Vehicle speed decreased to excessively low, and ASCD operation is cut off.	
AT OD MONITOR	ON/OFF			Indicates [ON/OFF] condition of CVT O/D according to the input signal from the TCM.	For M/T models, always "OFF" is displayed.
AT OD CANCEL	ON/OFF			Indicates [ON/OFF] condition of CVT O/D cancel request signal.	For M/T models, always "OFF" is displayed.
CRUISE LAMP	ON/OFF			Indicates [ON/OFF] condition of CRUISE lamp determined by the ECM according to the input signals.	
SET LAMP	ON/OFF			NOTE: The item is indicated, but not used.	

< SYSTEM DESCRIPTION >

		Monitor Ite			
Monitored item	Unit	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	Description	Remarks
FAN DUTY	%			Indicates a command value for cooling fan. The value is calculated by ECM based on input signals.	
ALT DUTY	%			Indicates the duty ratio of the power generation command value. The ratio is calculated by ECM based on the battery current sensor signal.	
BAT CUR SEN	mV			The signal voltage of battery current sensor is displayed.	
A/F ADJ-B1	_			Indicates the correction of a factor stored in ECM. The factor is calculated from the difference between the target air-fuel ratio stored in ECM and the air-fuel ratio calculated from A/F sensor 1 signal.	
P/N POSI SW	ON/OFF	×	×	Indicates [ON/OFF] condition from the park/neutral position (PNP) signal.	
INT/A TEMP SE	°C or °F	×	×	The intake air temperature (determined by the signal voltage of the intake air temperature sensor1) is indicated.	
AC PRESS SEN	V			The signal voltage from the refrigerant pressure sensor is displayed.	
FUEL PRES SEN	MPa			Indicates the fuel rail pressure computed by ECM according to the input signals.	
TURBO BST SEN	V			The turbocharger boost sensor signal voltage is displayed.	
ATOM PRES SEN	V			The atmospheric pressure sensor signal voltage is displayed.	
FUEL INJ TIM	deg			Indicates the fuel injection timing computed by ECM according to the input signals.	
FUEL INJ B1	msec			ECM-calculated injection pulse width of the fuel injector on the Bank 1 side.	
EVAP LEAK DIAG	YET/ CMPLT			 Indicates the condition of EVAP leak diagnosis. YET: EVAP leak diagnosis has not been performed yet. CMPLT: EVAP leak diagnosis has been performed successfully. 	
EVAP DIAG READY	ON/OFF			 Indicates the ready condition of EVAP leak diagnosis. ON: Diagnosis has been ready condition. OFF: Diagnosis has not been ready condition. 	
BAT TEMP SEN	V			The signal voltage from the battery temperature sensor is displayed.	
THRTL STK CNT B1	_			NOTE: The item is indicated, but not used.	

		Monitor Ite			
Monitored item	Unit	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	Description	Remarks
HO2 S2 DIAG1(B1)	INCMP/CM- PLT			 Indicates DTC P0139 self-diagnosis (delayed response) condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 	
HO2 S2 DIAG2(B1)	INCMP/CM- PLT			Indicates DTC P0139 self-diagnosis (slow response) condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete.	
H/P FUEL PUMP DEG	deg			Displays ECM-calculated fuel discharge position of the high pressure fuel pump.	
FUEL PRES SEN V	mV			The signal voltage of FRP sensor is displayed.	
EOP SENSOR	mV			The signal voltage of EOP sensor is displayed.	
ECM TEMP 1	°C or °F			The FCM temperature is indicated	
ECM TEMP 2	COLLE			The ECM temperature is indicated.	
BOOST S/V DUTY	%			The turbocharger boost control sole- noid valve control condition (detem- ined by ECM according to the input signal) is indicated.	
G SENSOR	mV			The signal voltage of G sensor is displayed.	
A/F SEN1 DIAG1 (B1)	INCMP/CM- PLT			Indicates DTC P015A or P015B self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete.	
A/F SEN1 DIAG2 (B1)	INCMP/CM- PLT			Indicates DTC P014C or P014D self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete.	
A/F SEN1 DIAG3 (B1)	ABSNT/ PRSNT			Indicates DTC P014C, P014D, P015A or P015B self-diagnosis condition. ABSNT: The vehicle condition is not within the diagnosis range. PRSNT: The vehicle condition is within the diagnosis range.	
A/F-S ATMSPHRC CRCT B1	_			Displays a determined value of atmospheric correction factor necessary for correcting an A/F sensor signal input to ECM. The signal used for the correction is an A/F sensor signal transmitted while driving under atmospheric pressure.	

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

Α

D

Е

F

G

			em Selec- on			1
Monitored item	Unit	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	Description	Remarks	Ε
A/F-S ATMSPHRC CRCT B2	_			Displays a determined value of atmospheric correction factor necessary for correcting an A/F sensor signal input to ECM. The signal used for the correction is an A/F sensor signal transmitted while driving under atmospheric pressure.		
A/F-S ATMSPHRC CRCT UP B1	count			Displays the number of updates of the A/F sensor atmospheric correction factor.		
A/F-S ATMSPHRC CRCT UP B2	count			Displays the number of updates of the A/F sensor atmospheric correction factor.		

NOTE:

Any monitored item that does not match the vehicle being diagnosed is deleted from the display automatically.

WORK SUPPORT MODE

Work Item

Work item	Condition	Usage
IDLE AIR VOL LEARN	The idle air volume that keeps the engine within the specified range is memorized in ECM.	When learning the idle air volume
EVAP SYSTEM CLOSE	Close the EVAP canister vent control valve in order to make EVAP system close under the following conditions. Ignition switch ON Engine not running Ambient temperature is above 0°C (32°F) No vacuum and no high pressure in EVAP system Fuel tank temperature is more than 0°C (32°F) Within 10 minutes after starting "EVAP SYSTEM CLOSE" When trying to execute "EVAP SYSTEM CLOSE" under the condition except above, CONSULT will discontinue it and display appropriate instruction. NOTE: When starting engine, CONSULT may display "Battery voltage is low. Charge battery", even in using charged battery.	When detecting EVAP vapor leak point of EVAP system
FUEL PRESSURE RELEASE	Crank a few times after engine stalls.	When releasing fuel pressure from fuel line
TARGET IGN TIM ADJ*	Idle condition	When adjusting target ignition timing
TARGET IDLE RPM ADJ*	Idle condition	When setting target idle speed
VIN REGISTRATION	In this mode, VIN is registered in ECM.	When registering VIN in ECM
SELF-LEARNING CONT	The coefficient of self-learning control mixture ratio returns to the original coefficient.	When clearing mixture ratio self- learning value
G SENSOR CALIBRATION	Park the vehicle on a flat road.Adjust pressure in all tires to the specified value.	Calibrates G sensor.
CLSD THL POS LEARN	Ignition on and engine stopped.	When learning the throttle valve closed position
SAVING DATA FOR REPLC CPU	In this mode, save data that is in ECM.	When ECM is replaced.
WRITING DATA FOR REPLC CPU	In this mode, write data stored by "SAVE DATA FOR CPU REPLC" in work support mode to ECM.	When ECM is replaced.

ACTIVE TEST MODE

Test Item

Test item	Condition	Judgement	Check item (Remedy)
VENT CONTROL/V	Ignition switch ON (Engine stopped) Turn solenoid valve ON and OFF with the CONSULT and listen to operating sound.	Solenoid valve makes an operating sound.	Harness and connectors EVAP canister vent control solenoid valve
ENG COOLANT TEMP	Engine: Return to the original trouble condition Change the engine coolant temperature using CONSULT.	If trouble symptom disappears, see CHECK ITEM.	Harness and connectors Engine coolant temperature sensor Fuel injector
FUEL INJECTION	 Engine: Return to the original trouble condition Change the amount of fuel injection using CONSULT. 	If trouble symptom disappears, see CHECK ITEM.	Harness and connectors Fuel injector Air fuel ratio (A/F) sensor 1
FUEL/T TEMP SEN	Change the fuel tank temperature u	sing CONSULT.	
PURG VOL CONT/V	 Engine: After warming up, run engine at 1,500 rpm. Change the EVAP canister purge volume control solenoid valve opening percent using CONSULT. 	Engine speed changes according to the opening percent.	Harness and connectors Solenoid valve
FUEL PUMP RELAY	Ignition switch: ON (Engine stopped) Turn the fuel pump relay "ON" and "OFF" using CONSULT and listen to operating sound.	Fuel pump relay makes the operating sound.	Harness and connectors Fuel pump relay
IGNITION TIMING	 Engine: Return to the original trouble condition Timing light: Set Retard the ignition timing using CONSULT. 	If trouble symptom disappears, see CHECK ITEM.	Perform Idle Air Volume Learning.
FAN DUTY CONTROL*	Ignition switch: ON Change duty ratio using CON- SULT.	Cooling fan speed changes.	Harness and connectors Cooling fan motor Cooling fan relay Cooling fan control module IPDM E/R
ALTERNATOR DUTY	Ignition switch: ON Change duty ratio using CON- SULT.	Battery voltage changes.	Harness and connectors Alternator IPDM E/R
POWER BALANCE	 Engine: After warming up, idle the engine. A/C switch OFF Shift lever: P or N (CVT), Neutral (M/T) Cut off each fuel injector signal one at a time using CONSULT. 	Engine runs rough or dies.	Harness and connectors Compression Fuel injector Power transistor Spark plug Ignition coil

^{*:} Leaving cooling fan OFF with CONSULT while engine is running may cause the engine to overheat.

DTC WORK SUPPORT MODE

Test Item

Test mode	Test item	Corresponding DTC No.	Reference page
EVAPORATIVE SYS-	PURG VOL CN/V P1444	P0443	EC-356
TEM	PURG FLOW P0441	P0441	EC-351

^{*:} This function is not necessary in the usual service procedure.

< SYSTEM DESCRIPTION >

[MR FOR NISMO RS MODELS]

Test mode	Test item	Corresponding DTC No.	Reference page
	HO2S2 (B1) P1146	P0138	EC-275
HO2S2	HO2S2 (B1) P1147	P0137	EC-269
	HO2S2 (B1) P0139	P0139	EC-282
A/F SEN1	A/F SEN1 (B1) P1278/P1279	_	
AVE SEINT	A/F SEN1 (B1) P1276	P0130	EC-259

SRT & P-DTC MODE

SRT STATUS Mode

- For items whose SRT codes are set, "CMPLT" is displayed on the CONSULT screen; for items whose SRT codes are not set, "INCMP" is displayed.
- "SRT STATUS" provides the presence or absence of permanent DTCs stored in ECM memory.

PERMANENT DTC STATUS Mode

How to display permanent DTC status

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select "PERMANENT DTC STATUS" in "DTC & SRT CONFIRMATION" mode with CONSULT.

Permanent DTCs stored in ECM memory are displayed on the CONSULT screen to show if a driving pattern required for erasing permanent DTCs is complete (CMPLT) or incomplete (INCMP).

CAUTION:

Since the "PERMANENT DTC STATUS" screen displays the previous trip information, repeat the following twice to update the information: "Ignition switch OFF", "Wait for more than 10 seconds" and "Ignition switch ON".

CAUTION: Turn ignition switch from O status screen.	N to OFF twice to update the informa	ation on the
PERMANENT DTC	DRIVING PATTERN B	DRIVING PATTERN D
xxxx	INCMP	INCMP
xxxx	CMPLT	INCMP
xxxx	INCMP	CMPLT
XXXX	CMPLT	INCMP
XXXX	INCMP	INCMP
XXXX	INCMP	INCMP

JSBIA0062GB

This mode is not used in regions that permanent DTCs are not regulated by law.

SRT WORK SUPPORT Mode

This mode enables a technician to drive a vehicle to set the SRT while monitoring the SRT status.

PERMANENT DTC WORK SUPPORT Mode

This mode enables a technician to drive a vehicle to complete the driving pattern that is required for erasing permanent DTC.

NOTE:

This mode is not used in regions that permanent DTCs are not regulated by law.

EC-93 Revision: 2014 October 2015 JUKE

Α

EC

Е

F

Н

N

ECU DIAGNOSIS INFORMATION

ECM

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.

- •Numerical values in the following table are reference values.
- •These values are input/output values that ECM receives/transmits and may differ from actual operations. Example:

The ignition timing shown by the timing light may differ from the ignition timing displayed on the data monitor. This occurs because the timing light shows a value calculated by ECM according to signals received from the cam shaft position sensor and other sensors related to ignition timing.

For outlines of following items, refer to EC-83. "CONSULT Function".

Monitor Item	С	condition	Values/Status
ENG SPEED	Run engine and compare CONSULT	Almost the same speed as the tachometer indication.	
MAS A/F SE-B1	See EC-177, "Diagnosis Procedure"		
B/FUEL SCHDL	See EC-177, "Diagnosis Procedure"		
A/F ALPHA-B1	See EC-177, "Diagnosis Procedure"		
COOLANT TEMP/S	Engine: After warming up		More than 70°C (158°F)
A/F SEN1 (B1)	Engine: After warming up	Maintaining engine speed at 2,000 rpm	Fluctuates around 2.2 V
HO2S2 (B1)	Revving engine from idle up to 3,00 are met. Engine: After warming up After keeping engine speed betweed idle for 1 minute under no load.	0 - 0.3 V ←→ Approx. 0.6 - 1.0 V	
HO2S2 MNTR(B1)	Revving engine from idle up to 3,00 are met. Engine: After warming up After keeping engine speed betwee idle for 1 minute under no load	$LEAN \longleftrightarrow RICH$	
VHCL SPEED SE	Turn drive wheels and compare COI tion.	Almost the same speed as speedometer indication.	
BATTERY VOLT	Ignition switch: ON (Engine stopped)	11 - 14 V
ACCEL SEN 1	Ignition switch: ON	Accelerator pedal: Fully released	0.6 - 0.9 V
ACCEL SENT	(Engine stopped)	Accelerator pedal: Fully depressed	4.0 - 4.8 V
ACCEL SEN 2*1	Ignition switch: ON	Accelerator pedal: Fully released	0.3 - 4.7 V
ACCLL OLIV 2	(Engine stopped)	Accelerator pedal: Fully depressed	1.95 - 2.4 V
TP SEN 1-B1	Ignition switch: ON (Faging etapped)	Accelerator pedal: Fully released	More than 0.36 V
IP SEIN I-DI	(Engine stopped)Selector lever: D (CVT), 1st (M/T)	Accelerator pedal: Fully depressed	Less than 4.75 V
	Ignition switch: ON	Accelerator pedal: Fully released	More than 0.36 V
TP SEN 2-B1*	(Engine stopped) • Selector lever: D (CVT), 1st (M/T)	Accelerator pedal: Fully depressed	Less than 4.75 V
FUEL T/TMP SE	Ignition switch: ON	Indicates fuel tank temperature.	
EVAP SYS PRES	Ignition switch: ON		Approx 0.5 - 4.6 V
FUEL LEVEL SE	Ignition switch: ON		Depending on fuel level of fuel tank.
START SIGNAL	Ignition switch: $ON \rightarrow START \rightarrow ON$	I	$OFF \to ON \to OFF$

ECM

Monitor Item		Condition	Values/Status
CLSD THL POS	Ignition switch: ON	Accelerator pedal: Fully released	ON
CLSD THE POS	(Engine stopped)	Accelerator pedal: Slightly depressed	OFF
	Engine: After warming up, idle the	Air conditioner switch: OFF	OFF
AIR COND SIG	engine engine	Air conditioner switch: ON (Compressor operates.)	ON
DW/OT OLONIAL	Engine: After warming up, idle the	Steering wheel: Not being turned	OFF
PW/ST SIGNAL	engine	Steering wheel: Being turned	ON
LOAD SIGNAL	Imition quitable ON	Rear window defogger switch: ON and/or Lighting switch: 2nd position	ON
LOAD SIGNAL	Ignition switch: ON	Rear window defogger switch and lighting switch: OFF	OFF
IGNITION SW	Ignition switch: $ON \rightarrow OFF \rightarrow ON$		$ON \to OFF \to ON$
HEATED FAN CM	Engine: After warming up, idle the	Heater fan switch: ON	ON
HEATER FAN SW	engine	Heater fan switch: OFF	OFF
DDAKE OM	Ignition quitable CNI	Brake pedal: Fully released	OFF
BRAKE SW	Ignition switch: ON	Brake pedal: Slightly depressed	ON
	Engine: After warming up Selector lever: P or N (CVT),	Idle	5° - 15° BTDC
IGN TIMING	Neutral (M/T) • Air conditioner switch: OFF • No load	2,000 rpm	30° - 50° BTDC
COMBUSTION		_	These items are displayed but are not applicable to this model.
	Engine: After warming up	Idle	5 - 35 %
CAL/LD VALUE	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,500 rpm	5 - 35 %
	Engine: After warming up Selector lever: P or N (CVT),	Idle	1.0 - 5.0 g/s
MASS AIRFLOW	Neutral (M/T) • Air conditioner switch: OFF • No load	2,500 rpm	2.0 - 10.0 g/s
PURG VOL C/V	Engine: After warming up Selector lever: P or N (CVT), Neutral (M/T)	Idle (Accelerator pedal: Not depressed even slightly, after engine starting.)	0 - 10 %
	 Air conditioner switch: OFF No load	2,000 rpm	0 - 20 %
	Engine: After warming up	Idle	−5° - 5°CA
NT/V TIM(B1)	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 0° - 20°CA
	Engine: After warming up	Idle	−5° - 5°CA
EXH/V TIM B1	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	Around 2,500 rpm while the engine speed is rising	Approx. 0° - 30°CA
	Engine: After warming up	Idle	0 %
NT/V SOL(B1)	Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load	2,000 rpm	Approx. 0% - 60 %

Monitor Item	C	Condition	Values/Status
		Air conditioner switch: OFF	OFF
AIR COND RLY	Engine: After warming up, idle the engine	Air conditioner switch: ON (Compressor operates)	ON
VENT CONT/V	Ignition switch: ON		OFF
FUEL PUMP RLY	For 1 seconds after turning ignitio Engine running or cranking	n switch: ON	ON
	Except above		OFF
THRTL RELAY	Ignition switch: ON		ON
HO2S2 HTR (B1)	- Engine: After warming up	en 3,500 and 4,000 rpm for 1 minute and at	ON
	Engine speed: Above 3,600 rpm		OFF
ALT DUTY SIG	Power generation voltage variable c	ontrol: Operating	ON
ALI DUTT SIG	Power generation voltage variable c	ontrol: Not operating	OFF
I/P PULLY SPD	Vehicle speed: More than 20 km/h (12 MPH)	Almost the same speed as the tachometer indication
VEHICLE SPEED	Turn drive wheels and compare CO tion.	NSULT value with the speedometer indica-	Almost the same speed as the speedometer indication
	Engine: rupping	Idle air volume learning has not been performed yet.	YET
IDL A/V LEARN	Engine: running	Idle air volume learning has already been performed successfully.	CMPLT
TRVL AFTER MIL	Ignition switch: ON	Vehicle has traveled after MIL has illuminated.	0 - 65,535 km (0 - 40,723 miles)
ENG OIL TEMP	Engine: After warming up	,	More than 70°C (158°F)
A/F S1 HTR(B1)	Engine: After warming up, idle the e (More than 140 seconds after starting		4 - 100 %
SET VHCL SPD	Engine: Running	ASCD: Operating	The preset vehicle speed i displayed
MAIN SW	Ignition switch: ON	MAIN switch: Pressed	ON
IVIAIN SVV	ignition switch. ON	MAIN switch: Released	OFF
CANCEL SW	Ignition switch: ON	CANCEL switch: Pressed	ON
CANCEL SW	Igrition switch. ON	CANCEL switch: Released	OFF
RESUME/ACC SW	Ignition switch: ON	ACCEL/RES switch: Pressed	ON
KEGOWE/ACC GW	ignition switch. ON	ACCEL/RES switch: Released	OFF
SET SW	Ignition switch: ON	COAST/SET switch: Pressed	ON
SL1 SW	ignition switch. ON	COAST/SET switch: Released	OFF
BRAKE SW1	Lauridian audit I ON	Brake pedal: Fully released	ON
(Brake pedal position switch)	Ignition switch: ON	Brake pedal: Slightly depressed	OFF
BRAKE SW2	Ignition switch: ON	Brake pedal: Fully released	OFF
(Stop lamp switch)		Brake pedal: Slightly depressed	ON
VHCL SPD CUT	Ignition switch: ON		NON
LO SPEED CUT	Ignition switch: ON		NON
AT OD MONITOR	Ignition switch: ON		OFF
AT OD CANCEL	Ignition switch: ON		OFF
CRUISE LAMP	Ignition switch: ON	MAIN switch: Pressed at the 1st time \rightarrow at the 2nd time	$ON \to OFF$

ECM

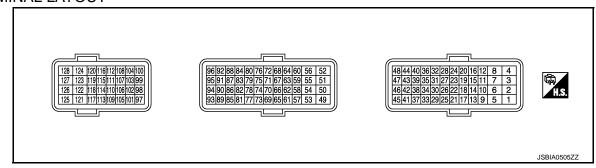
Monitor Item		Condition	Values/Status
SET LAMP	NOTE: The item is indicated, but not used.		
FAN DUTY	Engine: Running		0 - 100 %
ALT DUTY	Engine: Idle		0 - 80 %
BAT CUR SEN	 Engine speed: Idle Battery: Fully charged*2 Selector lever: P or N (CVT), Neu Air conditioner switch: OFF No load 	tral (M/T)	Approx. 2,600 - 3,500 mV
A/F ADJ-B1	Engine: Running		-0.450 - 0.330
P/N POSI SW	Ignition switch: ON	Selector lever: P or N (CVT), Neutral (M/T)	ON
		Selector lever: Except above	OFF
INT/A TEMP SE	Ignition switch: ON		Indicates intake air tempera- ture
AC PRESS SEN	Engine: Idle Both A/C switch and blower fan st	witch: ON (Compressor operates)	1.0 - 4.0 V
	Engine: After warming up	Idle	Approx. 2.74 MPa
FUEL PRES SEN	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 3.0 MPa
TURBO BST SEN	 Engine speed: Idle Selector lever: D (CVT), Neutral (M/T) Fuel: Premium gasoline 	 The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-function meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	3.07 - 3.15 V
TONDO BST SEN	 Engine speed: Idle Selector lever: D (CVT), Neutral (M/T) Fuel: Regular gasoline 	 The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-function meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	2.91 - 2.99 V
ATOM PRES SEN	Ignition switch: ON		1.80 - 4.80 V
	Engine: After warming up	Idle	Approx. 30 deg
FUEL INJ TIM	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 30 deg
	Engine: After warming up	Idle	Approx. 0.8 msec
FUEL INJ B1	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 1.1 msec
EVAP LEAK DIAG	Ignition switch: ON		Indicates the condition of EVAP leak diagnosis.
EVAP DIAG READY	Ignition switch: ON		Indicates the ready condition of EVAP leak diagnosis.
BAT TEMP SEN	 Engine: After warming up Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	Idle	Indicates the temperature around the battery.
	NOTE:		

Monitor Item		Condition	Values/Status
	DTC P0139 self-diagnosis (delayed	response) has not been performed yet.	INCMP
HO2 S2 DIAG1(B1)	DTC P0139 self-diagnosis (delayed cessfully.	CMPLT	
	DTC P0139 self-diagnosis (slow re-	sponse) has not been performed yet.	INCMP
HO2 S2 DIAG2(B1)	DTC P0139 self-diagnosis (slow recessfully.	sponse) has already been performed suc-	CMPLT
	Engine: After warming up	Idle	Approx. 255 - 275 deg
H/P FUEL PUMP DEG	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 255 - 275 deg
	Engine: After warming up	Idle	Approx. 1,140 - 1,460 mV
FUEL PRES SEN V	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	Revving engine from idle to 4,000 rpm quickly	Approx. 1,300 - 2,900 mV
	Engine: After warming up	Idle	Approx. 1,450 mV
EOP SENSOR	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 2,850 mV
ECM TEMP 1	Engine: After cooling Ignition switch: ON	Indicates the temperature around the ECM.	
ECM TEMP 2	Engine: After cooling Ignition switch: ON		Indicates the temperature around the ECM.
		Idle	0 %
BOOST S/V DUTY	Engine: After warming up	 The accelerator pedal is depressed to a half stroke position or more. Engine speed: Below 3,000 rpm 	100 %
		 The accelerator pedal is depressed to a half stroke position or more. Engine speed: More than 3,000 rpm 	30 - 60 %
G SENSOR	Vehicle is level		Approx. 2,500 mV
A/F SEN1 DIAG1	DTC P015A and P015B self-diagno	osis is incomplete.	INCMP
(B1)	DTC P015A and P015B self-diagno	osis is complete.	CMPLT
A/F SEN1 DIAG2	DTC P014C and P014D self-diagno	osis is incomplete.	INCMP
(B1)	DTC P014C and P014D self-diagno	osis is complete.	CMPLT
A/F SEN1 DIAG3	The vehicle condition is not within t P015A or P015B.	he diagnosis range of DTC P014C, P014D,	ABSNT
(B1)	The vehicle condition is within the c P015A or P015B.	PRSNT	
A/F-S ATMSPHRC CRCT B1	Engine: After warming up, idle the	Varies depending on vehicle environment.	
A/F-S ATMSPHRC CRCT B2	Engine: After warming up, idle the	Varies depending on vehicle environment.	
A/F-S ATMSPHRC CRCT UP B1	Engine: Running		Varies depending on the number of updates.
A/F-S ATMSPHRC CRCT UP B2	Engine: Running		Varies depending on the number of updates.

^{*1:} Accelerator pedal position sensor 2 signal and throttle position sensor 2 signal are converted by ECM internally. Thus, they differ from ECM terminals voltage signal.

^{*2:} Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108. "How to Handle Battery".

TERMINAL LAYOUT



PHYSICAL VALUES

NOTE:

- ECM is located in the engine room left side near battery.
- Connect a break-out box (EG17550000) and harness adapter (EG17550400) between the ECM and ECM harness connector.
- Use extreme care not to 2 pins at one time.
- Data is for comparison and may not be exact.
- Specification data are reference values and are measured between each terminal and ground.
- Pulse signal is measured by CONSULT.

Terminal No. (Wire color)		Description		Condition	Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
1 (B)	_	ECM ground (Fuel injector)	_	_	_
2 (B)	_	ECM ground (Fuel injector)	_	_	_
3 (G)	1	Fuel injector No. 1, 4 (HI)	Output	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	BATTERY VOLTAGE (11 - 14 V) ★ 100mSec/div 20V/div JPBIA4718ZZ
4 (Y)	1 (B)	Fuel injector No. 2, 3 (HI)	·	[Engine is running] • Engine speed is 2,000 rpm	BATTERY VOLTAGE (11 - 14 V) ★ 100mSec/div 20V/div JPBIA4719ZZ

Revision: 2014 October EC-99 2015 JUKE

Е

D

Α

EC

F

G

Н

K

L

M

Ν

Р

0

	minal No. ire color)	Description		Condition	Value
+	_	Signal name	Input/ Output		(Approx.)
5 (R)		Fuel injector No. 1 (LO)		 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	BATTERY VOLTAGE (11 - 14 V) ★ 100mSec/div 20V/div 300 JPBIA4720ZZ
6 (BR)	1 (B)	Fuel injector No. 2 (LO)	Output		
7 (W)		Fuel injector No. 3 (LO)			BATTERY VOLTAGE (11 - 14 V) ★
8 (R)		Fuel injector No. 4 (LO)		[Engine is running] • Engine speed is 2,000 rpm	100mSec/div
9 (W)	_	Sensor ground (Mass air flow sensor, in- take air temperature sensor1)	-	_	_
10 (LG)	_	Sensor ground (Engine coolant temperature sensor)	_	_	_
11 (P)	_	Sensor ground (Engine oil temperature sensor)	_	_	_
12 (BR)	_	Sensor ground (Refrigerant pressure sensor, EVAP control sys- tem pressure sensor)	_	_	_
				[Ignition switch: ON] • Engine stopped	0.4 V
13 (G)	9 (W)	Mass air flow sensor	Input	[Engine is running]Warm-up conditionIdle speed	0.9 - 1.2 V
	(**)			[Engine is running]Warm-up conditionEngine is revving from idle to about 4,000 rpm	0.9 - 1.2 to 2.4 V (Check for linear voltage rise in response to engine being increased to about 4,000 rpm.)
14 (L)	10 (LG)	Engine coolant tempera- ture sensor	Input	[Engine is running]	0 - 4.8 V Output voltage varies with engine coolant temperature.
15 (L)	12 (BR)	EVAP control system pressure sensor	Input	[Ignition switch: ON]	0.5 - 4.6 V
17 (Y)	9 (W)	Intake air temperature sensor 1	Input	[Engine is running]	0 - 4.8 V Output voltage varies with intake air temperature.

ECM

	ninal No. re color)	Description		Condition	Value
+	-	Signal name	Input/ Output	Condition	(Approx.)
18	44			[Engine is running] • Warm-up condition • Idle speed	1.14 - 1.46 V
(GR)	(SB)	Fuel rail pressure sensor	Input	[Engine is running]Warm-up conditionRevving engine from idle to 4,000 rpm quickly	1.3 - 2.9 V
19 (P)	12 (BR)	Refrigerant pressure sensor	Input	 [Engine is running] Warm-up condition Both A/C switch and blower fan motor switch: ON (Compressor operates) 	1.0 - 4.0 V
21 (W)	127 (B/Y)	A/F sensor 1	Input	[Ignition switch: ON]	2.2 V
22 (Y)	11 (P)	Engine oil temperature sensor	Input	[Engine is running]	0 - 4.8 V Output voltage varies with engine oil temperature.
23 (W)	12 (BR)	Sensor power supply (Refrigerant pressure sensor, EVAP control sys- tem pressure sensor)	_	[Ignition switch: ON]	5.0 V
25 (B)	127 (B/Y)	A/F sensor 1	Input	[Engine is running] • Engine speed is 2,000 rpm	1.8 V Output voltage varies with air fuel ratio.
29 (W)	33 (R)	Heated oxygen sensor 2	Input	 [Engine is running] Revving engine from idle to 3,000 rpm quickly after the following conditions are met Engine: after warming up Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 	0 - 1.0 V
33 (R)	_	Sensor ground (Heated oxygen sensor 2)	_	_	_
35 (B)	_	Sensor ground (Knock sensor)	_	_	_
36 (W)	35 (B)	Knock sensor	Input	[Engine is running] • Idle speed	2.5 V
38 (B)	_	Shield	_	_	_
39 (R)	44 (SB)	Sensor power supply (Fuel rail pressure sensor, turbocharger boost sen- sor, engine oil pressure sensor)	_	[Ignition switch: ON]	5.0 V
41	44	Turbocharger boost sen-	Input	[Engine is running]Warm-up conditionIdle speed	1.9 V
(VV)	(W) (SB)	sor	mput	[Engine is running]Warm-up conditionEngine speed is 2,000 rpm	2.0 V

Terminal No. (Wire color) Description			Condition	Value		
+	_	Signal name	Input/ Output	Condition	(Approx.)	
43 44	44	Engine oil pressure sen-		[Engine is running] • Warm-up condition • Idle speed	1.3 V★ 5mSec/div 2V/div JPBIA3359ZZ	
(G)	(SB)	sor	Input	[Engine is running]Warm-up conditionEngine speed is 2,000 rpm	2.7 V★ 5mSec/div 2V/div JPBIA3360ZZ	
44 (SB)	_	Sensor ground (Fuel rail pressure sensor, turbocharger boost sen- sor, engine oil pressure sensor)	-	_	_	
49 (G)	_	Fuel injector driver power supply 1	Input	[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)	
50 (B)	_	ECM ground (High pressure fuel pump)	_	_	_	
51 (GR)	127 (B/Y)	Throttle control motor (Open)	Output	[Ignition switch: ON] • Engine stopped • Selector lever: D (CVT), 1st (M/T) • Accelerator pedal: Fully depressed	3.2 V★ 1mSec/div 5V/div JMBIA0324GB	
52 (BR)	127 (B/Y)	Throttle control motor (Close)	Output	[Ignition switch: ON] • Engine stopped • Selector lever: D (CVT), 1st (M/T) • Accelerator pedal: Fully released	1.8 V★ 5mSec/div 5V/div JMBIA0326GB	
53 (BR)	_	Fuel injector driver power supply 2	Input	[Engine is running] • Warm-up condition • Idle speed	BATTERY VOLTAGE (11 - 14 V)	
54 (R)	_	High pressure fuel pump driver power supply	Input	[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)	

	ninal No. re color)	Description		Condition	Value	А
+	-	Signal name	Input/ Output	Condition	(Approx.)	
55	55 50	High pressure fuel pump	Output	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div 5V/div JPBIA4722ZZ	C D
(BR)	(B)	(HĬ)	'	[Engine is running]	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div	Е
				Engine speed is 2,000 rpm	5V/div JPBIA4723ZZ	F G
		High pressure fuel pump		[Engine is running] • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle Output [Engine is running] • Engine speed is 2,000 rpm	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div	Н
56 (Y)	127 (B/Y)		Output		20V/div JPBIA4724ZZ BATTERY VOLTAGE	J
	(Y) (B/Y) (LO)				(11 - 14 V) ★ 20mSec/div	K
					20V/div JPBIA4725ZZ	L
58 (G)	_	Sensor power supply [Crankshaft position sensor (POS)]	_	[Ignition switch: ON]	5 V	M
59 (L)	_	Sensor ground [Camshaft position sen- sor (PHASE), exhaust valve timing control posi- tion sensor]	_	_	_	N O
60 (W)	_	Sensor ground [Crankshaft position sensor (POS)]	_	_	_	P
62 (B)	_	Sensor power supply (Throttle position sensor)	_	[Ignition switch: ON]	5 V	٢

	minal No. ire color)	Description		O an alitica	Value
+	-	Signal name	Input/ Output	Condition	(Approx.)
63	59	Camshaft position sensor (PHASE)	Input	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	1.0 - 2.0★ 10mSec/div 2V/div JPBIA4726ZZ
(BR)	(L)			[Engine is running] • Engine speed is 2,000 rpm	1.0 - 2.0★ 10mSec/div 2V/div JPBIA4727ZZ
64 (R)	60 (W)	Crankshaft position sensor (POS)	Input	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	4.0 V★ 5mSec/div 2V/div JPBIA4728ZZ
				[Engine is running] • Engine speed: 2,000 rpm	5mSec/div 5mSec/div 2V/div JPBIA4729ZZ
67	59	Exhaust valve timing control position sensor	Input	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	1.0 - 2.0★ 50mSec/div 2V/div JPBIA4730ZZ
(LG)	(L)			[Engine is running] • Engine speed is 2,000 rpm	1.0 - 2.0★ 50mSec/div 2V/div JPBIA4731ZZ
68 (Y)	_	Sensor power supply (Battery current sensor, battery temperature sen- sor, G sensor)	_	[Ignition switch: ON]	5 V

ECM

	ninal No. re color)	Description		Condition	Value						
+		Signal name	Input/ Output	Condition	(Approx.)						
69 (L)	127 (B/Y)	EVAP canister vent control valve	Output	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)						
72 (GR)	_	Sensor power supply [Camshaft position sen- sor (PHASE), exhaust valve timing control posi- tion sensor]	I	[Ignition switch: ON]	5 V						
73	127	Turbocharger boost con-	Output	[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)						
(BR)	(B/Y)	trol solenoid valve	Output	[Engine is running]Warm-up conditionEngine speed is 2,000 rpm	8.0 V						
74 (R)	_	Sensor ground (Throttle position sensor 1, 2)	_	_	_						
75	75 74 (G) (R) Throttle position sensor 1							Throttle position conser 1	loout	[Ignition switch: ON] • Engine stopped • Selector lever: D (CVT), 1st (M/T) • Accelerator pedal: Fully released	More than 0.36 V
(G)		Input	 [Ignition switch: ON] Engine stopped Selector lever: D (CVT), 1st (M/T) Accelerator pedal: Fully depressed 	Less than 4.75 V							
76 74	The whole with the control of the co	Throttle position concer 2	Throttle position sensor 2	Throttle position sensor 2	Input	[Ignition switch: ON] • Engine stopped • Selector lever: D (CVT), 1st (M/T) • Accelerator pedal: Fully released	Less than 4.75 V				
(W)	(R)	Throttle position sensor 2		 [Ignition switch: ON] Engine stopped Selector lever: D (CVT), 1st (M/T) Accelerator pedal: Fully depressed 	More than 0.36 V						
77 (Y)	127 (B/Y)	Throttle control motor re-	Output	[Ignition switch: OFF]	BATTERY VOLTAGE (11 - 14 V)						
79 (BG)	87 (BR)	Battery temperature sensor	Input	[Ignition switch: ON] [Engine is running] • Battery temperature: 25°C (°F) • Idle speed	0 - 1.0 V 3.3 V						
80 (G)	87 (BR)	Battery current sensor	Input	[Engine is running] • Battery: Fully charged* • Idle speed	2.6 - 3.5 V						
				[Engine is running]Warm-up conditionIdle speed	0 V						
81 127 (W) (B/Y)	Intake valve timing control solenoid valve	Output	[Engine is running]Warm-up conditionWhen revving engine up to 2,000rpm Quickly	BATTERY VOLTAGE (11 - 14 V) ★							

	minal No. ire color)	Description		Condition	Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
82 (R) 86 (LG)		Ignition signal No. 1 Ignition signal No. 2		 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	0 - 0.3 V★ 100mSec/div
90 (P)	127 (B/Y)	Ignition signal No. 3	Output on signal No. 3	[Engine is running] • Warm-up condition	2V/div JPBIA4733ZZ 0.2 - 0.5 V★ 100mSec/div
94 (SB)		Ignition signal No. 4		Engine speed: 2,000 rpm	2V/div JPBIA4734ZZ
83 (G)	87 (BR)	G sensor	Input	[Engine is running]Warm-up conditionIdle speed	2.5 V
84 (P)	127 (B/Y)	Fuel tank temperature sensor	Input	[Engine is running]	0 - 4.8 V Output voltage varies with fuel tank temperature
85	127	Exhaust valve timing con-		[Engine is running]Warm-up conditionIdle speed	0 V
(G)	(B/Y)	trol solenoid valve	Output	[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	BATTERY VOLTAGE (11 - 14 V)
87 (BR)	_	Sensor ground (Battery current sensor, battery temperature sen- sor, G sensor)	_	_	_
88 (V)	44 (SB)	Intake air temperature sensor 2	Input	[Engine is running]Warm-up conditionIdle speed	0 - 4.8 V Output voltage varies with intake air temperature.
				[Ignition switch: OFF]	3.6 V
92	127	Cranking request signal	Output	[Ignition switch: ON]	0 V
(R)	(B/Y)	(Y) Cranking request signal	Output	[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)

	ninal No. e color)	Description		Condition	Value
+	-	Signal name	Input/ Output	Condition	(Approx.)
95 (L)	127 (B/Y)	EVAP canister purge vol- ume control solenoid	Output	[Engine is running]Idle speedAccelerator pedal: Not depressed even slightly, after engine starting	BATTERY VOLTAGE (11 - 14 V)★ 50mSec/div 10V/div JMBIA0327GB
	(L) (B/Y) unite control soleriold valve	Supin	 [Engine is running] Engine speed: About 2,000 rpm (More than 100 seconds after starting engine.) 	10 V★ 50mSec/div 10V/div JMBIA0328GB	
99 (P)	_	CAN communication line (CAN-L)	Input/ Output	_	_
100 (L)	_	CAN communication line (CAN-H)	Input/ Output	_	_
101 (V)	_	Sensor power supply (Accelerator pedal position sensor 1)	_	[Ignition switch: ON]	5 V
102 (R)	105 (GR)	Accelerator pedal position sensor 1	Input	[Ignition switch: ON] • Engine stopped • Accelerator pedal: Fully released [Ignition switch: ON] • Engine stopped • Accelerator pedal: Fully depressed	0.6 - 0.9 V 3.9 - 4.7 V
103 (BR)	127 (B/Y)	PNP signal	Input	[Ignition switch: ON] • Selector lever: P or N (CVT), Neutral (M/T)	BATTERY VOLTAGE (11 - 14 V)
, ,				[Ignition switch: ON] • Selector lever: Except above	0 V
104 (R)	127 (B/Y)	Data link connector	Input/ Output	[Ignition switch: ON] • CONSULT or GST: Disconnected	10.5 V
105 GR)	_	Sensor ground (Accelerator pedal position sensor 1)	_	_	_
106 (Y)	127 (B/Y)	Power supply for ECM (Backup)	Input	[Ignition switch: OFF]	BATTERY VOLTAGE (11 - 14 V)
108 (GR)	127 (B/Y)	Clutch pedal position switch	Input	[Ignition switch: ON] • Clutch pedal: Fully released [Ignition switch: ON] • Clutch pedal: Fully depressed	0 V BATTERY VOLTAGE (11 - 14 V)
109	127			[Ignition switch: OFF]	0 V
(O)	(B/Y)	Ignition switch	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)

< ECU DIAGNOSIS INFORMATION >

	minal No. ire color)	Description		O and liking	Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
				[Ignition switch: ON] • ASCD steering switch: OFF	4 V
				[Ignition switch: ON] • MAIN switch: Pressed	0 V
110 (P)	111 (B)	ASCD steering switch	Input	[Ignition switch: ON] • CANCEL switch: Pressed	1 V
				[Ignition switch: ON] • ACCEL/RES switch: Pressed	3 V
				[Ignition switch: ON] • COAST/SET switch: Pressed	2 V
111 (B)	_	Sensor ground (ASCD steering switch)	_	_	_
112	127	ECM relay	Output	[Engine is running][Ignition switch: OFF]A few seconds after turning ignition switch OFF	0 - 1.0 V
(BR)	(B/Y)	(Self shut-off)	·	[Ignition switch: OFF] • More than a few seconds after turning ignition switch OFF	BATTERY VOLTAGE (11 - 14 V)
115	127	Stop lamp switch	Input	[Ignition switch: OFF] • Brake pedal: Fully released	0 V
(R)	(B/Y)			[Ignition switch: OFF] • Brake pedal: Slightly depressed	BATTERY VOLTAGE (11 - 14 V)
116	127	Brake pedal position switch	Input	[Ignition switch: OFF] • Brake pedal: Fully released	BATTERY VOLTAGE (11 - 14 V)
(G)	(B/Y)			[Ignition switch: ON] • Brake pedal: Slightly depressed	0 V
117 (Y)	127 (B/Y)	Fuel pump relay	Output	[Ignition switch: ON] • For 1 second after turning ignition switch ON [Engine is running]	0 - 1.0 V
118 (O)	_	Sensor power supply (Accelerator pedal position sensor 2)	_	[Ignition switch: ON]	5 V
119	120	Accelerator pedal posi-		[Ignition switch: ON]Engine stoppedAccelerator pedal: Fully released	0.3 - 0.6 V
(W)	(Y)	tion sensor 2	Input	[Ignition switch: ON] • Engine stopped • Accelerator pedal: Fully depressed	1.95 - 2.4 V
120 (Y)	_	Sensor ground (Accelerator pedal position sensor 2)	_	_	_
121 (G)	127 (B/Y)	Power supply for ECM	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
122 (G)	127 (B/Y)	Throttle control motor power supply	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
123 (GR)	_	ECM ground	_	_	_
124 (GR)	_	ECM ground	_	_	_

Α

EC

D

Е

Н

Κ

M

Ν

< ECU DIAGNOSIS INFORMATION >

	minal No. ire color)	Description		Condition	Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
125 (L)	127 (B/Y)	A/F sensor 1 heater	Input	[Engine is running]Warm-up conditionIdle speed (More than 140 seconds after starting engine)	2.9 - 8.8 V★ 100mSec/div 5V/div JPBIA4732ZZ
126 (W)	33 (R)	Heated oxygen sensor 2 heater	Output	 [Engine is running] Engine speed: Below 3,600 rpm after the following conditions are met Engine: after warming up Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 	10 V★ 50mSec/div 10V/div JMBIA0325GB
				[Ignition switch: ON]Engine stopped[Engine is running]Engine speed: Above 3,600 rpm	BATTERY VOLTAGE (11 - 14 V)
127 (B/Y)	_	ECM ground	_	_	_

Fail Safe

NON DTC RELATED ITEM

Detected items	Engine operating condition in fail-safe mode	Remarks	Reference page
Malfunction indicator circuit	Engine speed will not rise more than 2,500 rpm due to the fuel cut	When there is an open circuit on MIL circuit, the ECM cannot warn the driver by lighting up MIL when there is malfunction on engine control system. Therefore, when electrical controlled throttle and part of ECM related diagnoses are continuously detected as NG for 5 trips, ECM warns the driver that engine control system malfunctions and MIL circuit is open by means of operating fail safe function. The fail safe function also operates when above diagnoses except MIL circuit are detected and demands the driver to repair the malfunction.	EC-563, "Component Function Check"

DTC RELATED ITEM

DTC No.	Detected items	Engine operating condition in fail safe mode
P0011	Intake valve timing control	The signal is not energized to the intake valve timing control solenoid valve and the valve control does not function.
P0014	Exhaust valve timing control	The signal is not energized to the exhaust valve timing control magnet retarder and the magnet retarder control does not function.
P0045 P0048	Turbocharger boost control solenoid valve	Sets the duty ratio of the turbocharger boost control solenoid valve to 0%, and decreases the boost to the lower limit.
P0047		The ECM controls the electric throttle control actuator and restricts the torque.
P0087 P0090	FRP control system	Engine torque is limited or engine speed is limited.
P0088		Engine speed is limited.

< ECU DIAGNOSIS INFORMATION >

DTC No.	Detected items	Engine operating condition in fail safe mode					
P0101 P0102 P0103	Mass air flow sensor circuit	Engine speed will not rise more that	n 2,400 rpm due to the fuel cut.				
P0117 P0118	Engine coolant tempera- ture sensor circuit	Engine coolant temperature will be determined by ECM based on the following condition CONSULT displays the engine coolant temperature decided by ECM.					
		Condition Engine coolant temperature of (CONSULT display)					
		Just as ignition switch is turned ON or START	40°C (104°F)				
		Approx. 4 minutes or more after engine starting	80°C (176°F)				
		Except as shown above	40 - 80°C (104 - 176°F) (Depends on the time)				
		When the fail safe system for engine fan operates while engine is running	e coolant temperature sensor is activated, the coolir g.				
P0122 P0123 P0222 P0223 P2135	Throttle position sensor	The ECM controls the electric throttle control actuator in regulating the throttle opening order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the norm condition. So, the acceleration will be poor.					
P0190	FRP sensor	Engine speed is limited.High pressure fuel pump is activated at maximum discharge pressure.					
P0196 P0197 P0198	Engine oil temperature sensor	Exhaust valve timing control does not function.					
P0201 P0202 P0203 P0204	Injector	 Engine torque is limited. Fuel injection shut-off of malfunction cylinder. Mixture ratio feedback control does not function. Idle engine speed is increased. 					
P0234	Turbocharger system	The ECM controls the electric throtte	tle control actuator and restricts the torque.				
P0235 P0237 P0238	Turbocharger boost sensor	Sets the duty ratio of the turbocharg the boost to the lower limit.	ger boost control solenoid valve to 0%, and decrease				
P0500	Vehicle speed sensor	The cooling fan operates (Highest)	while engine is running.				
P0524	Engine oil pressure		ring lamp on the combination meter. han 4,000 rpm due to the fuel cut. on switch OFF $ ightarrow$ ON.				
P0603 P0607	ECM	Engine torque may be limited.					
P0604	ECM	 ECM stops the electric throttle control actuator control, throttle valve is maintained at fixed opening (approx. 5 degrees) by the return spring. The position of the following components is fixed. Intake valve timing control solenoid valve Exhaust valve timing control solenoid valve ASCD operation may be deactivated. 					
P0605 P0606 P060B	ECM	 NOTE: Fail-safe may not occur depending ECM stops the electric throttle co fixed opening (approx. 5 degrees The position of the following com Intake valve timing control solend Exhaust valve timing control sole ASCD operation may be deactive 	ntrol actuator control, throttle valve is maintained at s) by the return spring. ponents is fixed. oid valve poid valve				

ECM

[MR FOR NISMO RS MODELS]

Α

D

Е

F

G

Н

J

Κ

L

M

Ν

0

INFOID:0000000011461440

DTC No.	Detected items	Engine opera	ating condition in fail safe mode					
P060A	ECM	 NOTE: Fail-safe may not occur depending on malfunction type. ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring. The position of the following components is fixed. Intake valve timing control solenoid valve Exhaust valve timing control solenoid valve Engine torque may be limited. ASCD operation may be deactivated. 						
P062B		 Engine torque is limited. Idle engine speed is increased. Fuel injector power supply shut-c High fuel pressure limitation. 	Idle engine speed is increased.Fuel injector power supply shut-off.					
P0643	Sensor power supply	 ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring. The position of the following components is fixed. Intake valve timing control solenoid valve Exhaust valve timing control solenoid valve 						
P1805	Brake switch	ECM controls the electric throttle cosmall range. Therefore, acceleration will be poor	ontrol actuator by regulating the throttle opening to a r.					
		Vehicle condition	Driving condition					
		When engine is idling	Normal					
		When accelerating	Poor acceleration					
P1197	Out of gas	Engine torque is limited.						
P2100 P2103	Throttle control motor relay	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.						
P2101	Electric throttle control function	ECM stops the electric throttle cont fixed opening (approx. 5 degrees) by	rol actuator control, throttle valve is maintained at a by the return spring.					
P2118	Throttle control motor	ECM stops the electric throttle cont fixed opening (approx. 5 degrees) by	rol actuator control, throttle valve is maintained at a by the return spring.					
P2119	Electric throttle control actuator	malfunction:)	ator does not function properly due to the return spring ctuator by regulating the throttle opening around the I not rise more than 2,000 rpm.					
			in fail safe mode is not in specified range:) ontrol actuator by regulating the throttle opening to 20					
		(When ECM detects the throttle valve is stuck open:) While the vehicle is driving, it slows down gradually by fuel cut. After the vehicle stops, the engine stalls. The engine can restart in the Neutral position, and engine speed will not exceed 1,000 rpm or more.						
P2122 P2123 P2127 P2128 P2138	Accelerator pedal position sensor	order for the idle position to be with	The ECM controls the electric throttle control actuator in regulating the throttle opening is order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the normal condition.					

DTC Inspection Priority Chart

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)
1	 U0101 U0122 U1001 CAN communication line P0096 P0097 P0098 Intake air temperature sensor 2 P0101 P0102 P0103 Mass air flow sensor P0111 P0112 P0113 P0127 Intake air temperature sensor 1 P0116 P0117 P0118 P0125 Engine coolant temperature sensor P0116 Intake air temperature sensor 2 P0122 P0123 P0222 P0223 P1225 P1226 P2135 Throttle position sensor P0128 Thermostat function P0181 P0182 P0183 Fuel tank temperature sensor P0198 P0192 P0193 P119A P119B P119C Fuel rail pressure sensor P0199 P0192 P0193 P119A P119B P119C Fuel rail pressure sensor P0196 P0197 P0198 Engine oil temperature sensor P0235 Turbocharger boost sensor P0327 P0328 Knock sensor P0335 Crankshaft position sensor (POS) P0340 Camshaft position sensor (PHASE) P0460 P0461 P0462 P0463 Fuel level sensor P0500 P0501 P2159 P2162 Vehicle speed sensor P0500 P0501 P2159 P2162 Vehicle speed sensor P0500 R0604 P0605 P0606 P0607 P060A P060B P0611 P062B ECM P0643 Sensor power supply P0705 Transmission range switch P0850 Park/neutral position (PNP) switch P1197 Out of gas P1550 P1557 Batter temperature sensor P1556 P1557 Batter temperature sensor
	 P158A ECM P159A P159B P159C P159D G sensor P1610 - P1612 NATS P1650 P1651 P1652 Starter motor relay P2123 P2123 P2123 P2128 P2128 Appelarator padal position sensor
	P2122 P2123 P2127 P2128 P2138 Accelerator pedal position sensor

Priority	Detected items (DTC)	_
2	 P0030 P0031 P0032 Air fuel ratio (A/F) sensor 1 heater P0037 P0038 Heated oxygen sensor 2 heater P0045 P0047 P0048 Turbocharger boost control solenoid valve 	A
	 P0075 Intake valve timing control solenoid valve P0078 Exhaust valve timing control solenoid valve 	EC
	 P0130 P0131 P0132 P014C P014D P015A P015B P2096 P2097 Air fuel ratio (A/F) sensor 1 P0137 P0138 P0139 Heated oxygen sensor 2 P0237 P0238 Turbocharger boost sensor P0441 EVAP control system purge flow monitoring 	С
	 P0443 P0444 P0445 EVAP canister purge volume control solenoid valve P0447 P0448 EVAP canister vent control valve P0451 P0452 P0453 EVAP control system pressure sensor P0710 P0715 P0720 P0740 P0744 P0745 P0746 P0776 P0778 P0840 P1740 P1777 P1778 CVT related sensors, solenoid valves and switches 	D
	 P1078 Exhaust valve timing position sensor P1217 Engine over temperature (OVERHEAT) P1451 Pressure sensor 	Е
	 P1805 Brake switch P2100 P2103 Throttle control motor relay P2101 Electric throttle control function P2118 Throttle control motor 	F
3	P0011 Intake valve timing control P0014 Exhaust valve timing control P0087 P0088 P0090 FRP control system P0171 P0173 Firel injection system function	G
	 P0171 P0172 Fuel injection system function P0201 - P0204 Injector P0234 P2263 Turbocharger system P0300 - P0304 Misfire 	Н
	 P0420 Three way catalyst function P0456 EVAP control system (very small leak) P0506 P0507 Idle speed control system P050A P050E P1423 P1424 Cold start control 	I
	 P0524 Engine oil pressure P1148 Closed loop control P1212 TCS communication line P1564 ASCD steering switch 	J
NOTE:	P1572 ASCD steering switch P1574 ASCD vehicle speed sensor P2119 Electric throttle control actuator	K

NOTE:

*: If "P1197" is displayed with other DTC in priority 1, perform trouble diagnosis for "P1197" first.

DTC Index

×:Applicable —: Not applicable

M

Ν

0

Р

						- ''	<u>'''</u>
DTC*	1	Items	SRT			Permanent	Reference
CONSULT GST ^{*2}	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*4	page
U0100	0100	COMMUNICATION ERROR (LOST)	_	2	×	_	EC-187
U0101	0101	LOST COMM (TCM)	_	1	×	В	EC-189
U0122	0122	VDC MDL	_	2	×	В	EC-190
U1001	1001 ^{*5}	CAN COMM CIRCUIT	_	2	_	_	EC-191
P0000	0000	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	_	_	Flashing ^{*9}	_	_
P0011	0011	INT/V TIM CONT-B1	×	2	×	В	EC-192
P0014	0014	EXH/V TIM CONT-B1	_	2	×	В	EC-195
P0030	0030	A/F SEN1 HTR (B1)	_	2	×	В	EC-199

< ECU DIAGNOSIS INFORMATION >

DTC*	1	Items	SRT			Permanent	Referenc
CONSULT GST*2	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*4	page
P0031	0031	A/F SEN1 HTR (B1)	_	2	×	В	EC-199
P0032	0032	A/F SEN1 HTR (B1)	_	2	×	В	EC-199
P0037	0037	HO2 HTR (B1)	_	2	×	В	EC-202
P0038	0038	HO2 HTR (B1)	_	2	×	В	EC-202
P0045	0045	TC BOOST SOL/V	_	2	×	В	EC-205
P0047	0047	TC/SC BOOST CONT A	_	1	×	В	EC-205
P0048	0048	TC/SC BOOST CONT A	_	1	×	В	EC-205
P0075	0075	INT/V TIM V/CIR-B1	_	2	×	В	EC-207
P0078	0078	EX V/T ACT/CIRC-B1	_	2	×	В	EC-210
P0087	0087	LOW FUEL PRES	_	2	×	A or B	EC-213
P0088	0088	HIGH FUEL PRES	_	2	×	A or B	EC-216
P0090	0090	FUEL PUMP	_	2	×	В	EC-218
P0096	0096	IAT SENSOR 2 B1	_	2	×	В	EC-223
P0097	0097	IAT SENSOR 2 B1	_	2	×	В	EC-225
P0098	0098	IAT SENSOR 2 B1	_	2	×	В	EC-225
P0101	0101	MAF SEN/CIRCUIT-B1	_	2	×	В	EC-229
P0102	0102	MAF SEN/CIRCUIT-B1	_	1	×	В	EC-234
P0103	0103	MAF SEN/CIRCUIT-B1	_	1	×	В	EC-234
P0111	0111	IAT SENSOR 1 B1	_	2	×	А	EC-239
P0112	0112	IAT SEN/CIRCUIT-B1	_	2	×	В	EC-241
P0113	0113	IAT SEN/CIRCUIT-B1	_	2	×	В	EC-241
P0116	0116	ECT SEN/CIRC	_	2	×	А	EC-243
P0117	0117	ECT SEN/CIRC	_	1	×	В	EC-245
P0118	0118	ECT SEN/CIRC	_	1	×	В	EC-245
P011C	011C	CAT/IAT CRRLTN B1	_	2	×	В	EC-247
P0122	0122	TP SEN 2/CIRC-B1	_	1	×	В	EC-249
P0123	0123	TP SEN 2/CIRC-B1	_	1	×	В	EC-249
P0125	0125	ECT SENSOR	_	2	×	В	EC-252
P0127	0127	IAT SENSOR-B1	_	2	×	В	EC-254
P0128	0128	THERMSTAT FNCTN	_	2	×	A	EC-256
P0130	0130	A/F SENSOR1 (B1)	×	2	×	A	EC-259
P0131	0131	A/F SENSOR1 (B1)	_	2	×	В	EC-263
P0132	0132	A/F SENSOR1 (B1)	_	2	×	В	EC-266
P0137	0137	HO2S2 (B1)	×	2	×	A	EC-269
P0138	0138	HO2S2 (B1)	×	2	×	A	EC-275
P0139	0139	HO2S2 (B1)	×	2	×	A	EC-282
P014C	014C	A/F SENSOR1 (B1)	×	2	×	А	EC-288
P014D	014D	A/F SENSOR1 (B1)	×	2	×	Α	EC-288
P015A	015A	A/F SENSOR1 (B1)	×	2	×	Α	EC-288
P015B	015B	A/F SENSOR1 (B1)	×	2	×	A	EC-288
P0171	0171	FUEL SYS-LEAN-B1	_	2	×	В	EC-293
P0172	0172	FUEL SYS-RICH-B1	_	2	×	В	EC-297

DTC [*]	1	Items	SRT			Permanent	Reference
CONSULT GST ^{*2}	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*4	page
P0181	0181	FTT SENSOR	_	2	×	A and B	EC-301
P0182	0182	FTT SEN/CIRCUIT	_	2	×	В	EC-305
P0183	0183	FTT SEN/CIRCUIT	_	2	×	В	EC-305
P0190	0190	FUEL PRES SEN/CIRC	_	1	×	В	EC-308
P0192	0192	FRP SEN/CIRC	_	2	×	В	EC-308
P0193	0193	FRP SEN/CIRC	_	2	×	В	EC-308
P0196	0196	EOT SENSOR	_	2	×	A and B	EC-312
P0197	0197	EOT SEN/CIRC	_	2	×	В	EC-316
P0198	0198	EOT SEN/CIRC	_	2	×	В	EC-316
P0201	0201	INJECTOR CIRC-CYL1	_	2	×	В	EC-318
P0202	0202	INJECTOR CIRC-CYL2	_	2	×	В	EC-318
P0203	0203	INJECTOR CIRC-CYL3	_	2	×	В	EC-318
P0204	0204	INJECTOR CIRC-CYL4	_	2	×	В	EC-318
P0222	0222	TP SEN 1/CIRC-B1	_	1	×	В	EC-319
P0223	0223	TP SEN 1/CIRC-B1	_	1	×	В	EC-319
P0234	0234	TC SYSTEM-B1	_	1	×	В	EC-322
P0235	0235	TURBO BOOST SENSOR	_	2	×	В	EC-325
P0237	0237	TC BOOST SEN/CIRC-B1	_	2	×	В	EC-328
P0238	0238	TC BOOST SEN/CIRC-B1	_	2	×	В	EC-328
P0300	0300	MULTI CYL MISFIRE	_	1 or 2	× or —	В	EC-331
P0301	0301	CYL 1 MISFIRE	_	1 or 2	× or —	В	EC-331
P0302	0302	CYL 2 MISFIRE	_	1 or 2	× or —	В	EC-331
P0303	0303	CYL 3 MISFIRE	_	1 or 2	× or —	В	EC-331
P0304	0304	CYL 4 MISFIRE	_	1 or 2	× or —	В	EC-331
P0327	0327	KNOCK SEN/CIRC-B1	_	2	_	_	EC-337
P0328	0328	KNOCK SEN/CIRC-B1	_	2	_	_	EC-337
P0335	0335	CKP SEN/CIRCUIT	_	2	×	В	EC-339
P0340	0340	CMP SEN/CIRC-B1	_	2	×	В	EC-342
P0420	0420	TW CATALYST SYS-B1	×	2	×	А	EC-346
P0441	0441	EVAP PURG FLOW/MON	×	2	×	А	EC-351
P0443	0443	PURG VOLUME CONT/V	_	2	×	А	EC-356
P0444	0444	PURG VOLUME CONT/V	_	2	×	В	EC-361
P0445	0445	PURG VOLUME CONT/V	_	2	×	В	EC-361
P0447	0447	VENT CONTROL VALVE	_	2	×	В	EC-364
P0448	0448	VENT CONTROL VALVE	_	2	×	В	EC-368
P0451	0451	EVAP SYS PRES SEN	_	2	×	А	EC-372
P0452	0452	EVAP SYS PRES SEN	_	2	×	В	EC-376
P0453	0453	EVAP SYS PRES SEN	_	2	×	А	EC-379
P0456	0456	EVAP VERY SML LEAK	×*6	2	×	А	EC-383
P0460	0460	FUEL LEV SEN SLOSH	_	2	×	A	EC-389
P0461	0461	FUEL LEVEL SENSOR	_	2	×	В	EC-390
P0462	0462	FUEL LEVEL SEN/CIRC		2	×	В	EC-392

< ECU DIAGNOSIS INFORMATION >

DTC*	1	Items	SRT			Permanent	Reference
CONSULT GST ^{*2}	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*4	page
P0463	0463	FUEL LEVEL SEN/CIRC	_	2	×	В	EC-392
P0500	0500	VEHICLE SPEED SEN A*7	_	2	×	В	EC-393 (CVT EC-394 (M/T)
P0501	0501	VEHICLE SPEED SEN A	_	2	×	В	EC-397
P0506	0506	ISC SYSTEM	_	2	×	В	EC-398
P0507	0507	ISC SYSTEM	_	2	×	В	EC-400
P050A	050A	COLD START CONTROL	_	2	×	А	EC-402
P050E	050E	COLD START CONTROL	_	2	×	Α	EC-402
P0520	0520	EOP SENSOR/SWITCH	_	2	_	_	EC-404
P0524	0524	ENGINE OIL PRESSURE	_	1	_	_	EC-408
P0603	0603	ECM BACK UP/CIRCUIT*8	_	2	× or —	В	EC-411
P0604	0604	ECM	_	1	×	В	EC-412
P0605	0605	ECM	_	1 or 2	×	В	EC-413
P0606	0606	CONTROL MODULE	_	1	× or —	В	EC-414
P0607	0607	ECM	_	1 or 2	_	В	EC-415
P060A	060A	CONTROL MODULE	_	1 or 2	_	В	EC-416
P060B	060B	CONTROL MODULE	_	1	_	В	EC-417
P0611	0611	FIC MODULE	_	2	×	В	EC-418
P062B	062B	ECM	_	2	×	В	EC-419
P0643	0643	SENSOR POWER/CIRC	_	1	×	В	EC-420
P0705	0705	T/M RANGE SENSOR A	_	2	×	В	TM-238
P0710	0710	FLUID TEMP SENSOR A	_	2	×	В	<u>TM-241</u>
P0715	0715	INPUT SPEED SENSOR A	_	2	×	В	TM-245
P0720	0720	OUTPUT SPEED SENSOR*7	_	2	×	В	TM-248
P0740	0740	TORQUE CONVERTER	_	2	×	В	TM-252
P0744	0744	TORQUE CONVERTER	_	2	×	В	TM-255
P0745	0745	PC SOLENOID A	_	2	×	В	TM-257
P0746	0746	PC SOLENOID A	_	2	×	В	TM-259
P0776	0776	PC SOLENOID B	_	2	×	В	<u>TM-261</u>
P0778	0778	PC SOLENOID B	_	2	×	В	TM-263
P0840	0840	FLUID PRESS SEN/SW A	_	2	×	В	TM-271
P0850	0850	P-N POS SW/CIRCUIT	_	2	×	В	EC-422
P1078	1078	EXH TIM SEN/CIRC-B1	_	2	×	В	EC-426
P1148	1148	CLOSED LOOP-B1	_	1	×	А	EC-430
P1197	1197	FUEL RUN OUT	_	2	_	_	EC-431
P119A	119A	FRP SENSOR A	_	2	×	В	EC-433
P119B	119B	FRP SENSOR A	_	2	×	В	EC-433
P119C	119C	FRP SENSOR A	_	2	×	В	EC-438
P1212	1212	TCS/CIRC	_	2	_	_	EC-442
P1217	1217	ENG OVER TEMP	_	1	×	В	EC-443
P1225	1225	CTP LEARNING-B1	_	2	_	_	EC-446
P1226	1226	CTP LEARNING-B1	_	2	_	_	EC-447

DTC*	1	Items	SRT			Permanent	Reference
CONSULT GST*2	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*4	page
P1423	1423	COLD START CONTROL	_	2	×	В	EC-448
P1424	1424	COLD START CONTROL	_	2	×	В	EC-448
P1451	1451	TC/SC PRES-EVAP PRES	_	2	×	В	EC-450
P1550	1550	BAT CURRENT SENSOR	_	2	_	_	EC-453
P1551	1551	BAT CURRENT SENSOR	_	2	_	_	EC-456
P1552	1552	BAT CURRENT SENSOR	_	2	_	_	EC-456
P1553	1553	BAT CURRENT SENSOR	_	2	_	_	EC-459
P1554	1554	BAT CURRENT SENSOR	_	2	_	_	EC-462
P1556	1556	BAT TMP SEN/CIRC	_	2	_	_	EC-466
P1557	1557	BAT TMP SEN/CIRC	_	2	_	_	EC-466
P1564	1564	ASCD SW	_	1	_	_	EC-468
P1572	1572	ASCD BRAKE SW	_	1	_	_	EC-471
P1574	1574	ASCD VHL SPD SEN	_	1	_	_	EC-476
P158A	158A	G SENSOR	_	1	_	_	EC-478
P159A	159A	G SENSOR	_	2	_	_	EC-479
P159B	159B	G SENSOR	_	2	×	В	EC-483
P159C	159C	G SENSOR	_	2	×	В	EC-479
P159D	159D	G SENSOR	_	2	×	В	EC-479
P1610	1610	LOCK MODE	_	2	_	_	SEC-50
P1611	1611	ID DISCORD, IMMU-ECM	_	2	_	_	SEC-51
P1612	1612	CHAIN OF ECM-IMMU	_	2	_	_	SEC-52
P1650	1650	STR MTR RELAY 2	_	2	×	В	EC-488
P1651	1651	STR MTR RELAY	_	2	×	В	EC-491
P1652	1652	STR MTR SYS COMM	_	1	×	В	EC-493
P1740	1740	SLCT SOLENOID	_	2	×	В	TM-288
P1777	1777	STEP MOTOR	_	2	×	В	TM-290
P1778	1778	STEP MOTOR	_	2	×	В	TM-293
P1805	1805	BRAKE SW/CIRCUIT	_	2	_	_	EC-495
P2096	2096	POST CAT FUEL TRIM SYS B1	_	2	×	Α	EC-497
P2097	2097	POST CAT FUEL TRIM SYS B1	_	2	×	А	EC-497
P2100	2100	ETC MOT PWR-B1	_	1	×	В	EC-501
P2101	2101	ETC FNCTN/CIRC-B1	_	1	×	В	EC-503
P2103	2103	ETC MOT PWR	_	1	×	В	EC-501
P2118	2118	ETC MOT-B1	_	1	×	В	EC-506
P2119	2119	ETC ACTR-B1	_	1	×	В	EC-508
P2122	2122	APP SEN 1/CIRC	_	1	×	В	EC-510
P2123	2123	APP SEN 1/CIRC	_	1	×	В	EC-510
P2127	2127	APP SEN 2/CIRC	_	1	×	В	EC-513
P2128	2128	APP SEN 2/CIRC	_	1	×	В	EC-513
P2135	2135	TP SENSOR-B1	 	1	×	В	EC-516
P2138	2138	APP SENSOR	 	1	×	В	EC-519
P2159	2159	VEHICLE SPEED SEN B		2	×	В	EC-397

DTC*	1	Items	SRT			Permanent	Reference
CONSULT GST*2	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*4	page
P2162	2162	VEHICLE SPEED SEN A-B	_	2	×	В	EC-523
P2263	2263	TC SYSTEM-B1		2	×	В	EC-525

^{*1: 1}st trip DTC No. is the same as DTC No.

Test Value and Test Limit

INFOID:0000000011639035

The following is the information specified in Service \$06 of SAE J1979/ISO 15031-5.

The test value is a parameter used to determine whether a system/circuit diagnostic test is OK or NG while being monitored by the ECM during self-diagnosis. The test limit is a reference value which is specified as the maximum or minimum value and is compared with the test value being monitored.

These data (test value and test limit) are specified by On Board Monitor ID (OBDMID), Test ID (TID), Unit and Scaling ID and can be displayed on the GST screen.

The items of the test value and test limit will be displayed with GST screen which items are provided by the ECM. (e.g., if bank 2 is not applied on this vehicle, only the items of bank 1 are displayed)

^{*2:} This number is prescribed by SAE J1979/ ISO 15031-5.

^{*3:} In Diagnostic Test Mode II (Self-diagnostic results), this number is controlled by NISSAN.

^{*4:} Refer to EC-170, "Description".

^{*5:} The troubleshooting for this DTC needs CONSULT.

^{*6:} SRT code will not be set if the self-diagnostic result is NG.

^{*7:} When the fail-safe operations for both self-diagnoses occur, the MIL illuminates.

^{*8:} This self-diagnosis is not for ECM power supply circuit, even though "ECM BACK UP/CIRCUIT" is displayed on CONSULT screen.

^{*9:} When the ECM is in the mode that displays SRT status, MIL may blink. For details, Refer to EC-80, "On Board Diagnosis Function".

lt o mo	OBD-	Calf diagnactic test item	DTC	li	ie and Test mit display)	Description
Item	MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description
			P0131	83H	0BH	Minimum sensor output voltage for test cycle
			P0131	84H	0BH	Maximum sensor output voltage for test cycle
			P0130	85H	0BH	Minimum sensor output voltage for test cycle
			P0130	86H	0BH	Maximum sensor output voltage for test cycle
			P0133	87H	04H	Response rate: Response ratio (lean to rich)
			P0133	88H	04H	Response rate: Response ratio (rich to lean)
			P2A00 or P2096	89H	84H	The amount of shift in air fuel ratio (too lean)
HO2S		Air fuel ratio (A/F) sensor 1 (Bank 1)	P2A00 or P2097	8AH	84H	The amount of shift in air fuel ratio (too rich)
			P0130	8BH	0BH	Difference in sensor output voltage
			P0133	8CH	83H	Response gain at the limited frequency
	01H		P014C	8DH	04H	O2 sensor slow response - Rich to lean bank 1 sensor 1
			P014C	8EH	04H	O2 sensor slow response - Rich to lean bank 1 sensor 1
			P014D	8FH	84H	O2 sensor slow response - Lean to rich bank 1 sensor 1
			P014D	90H	84H	O2 sensor slow response - Lean to rich bank 1 sensor 1
			P015A	91H	01H	O2 sensor delayed response - Rich to lean bank 1 sensor 1
			P015A	92H	01H	O2 sensor delayed response - Rich to lean bank 1 sensor 1
			P015B	93H	01H	O2 sensor delayed response - Lean to rich bank 1 sensor 1
			P015B	94H	01H	O2 sensor delayed response - Lean to rich bank 1 sensor 1
			P0133	95H	04H	Response rate: Response ratio (lean to rich)
			P0133	96H	84H	Response rate: Response ratio (rich to lean)

Ρ

	055			lir	e and Test mit display)	
Item	OBD- MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description
			P0138	07H	0CH	Minimum sensor output voltage for te cycle
		Heated oxygen sensor 2	P0137	08H	0CH	Maximum sensor output voltage for test cycle
	02H	(Bank 1)	P0138	80H	0CH	Sensor output voltage
			P0139	81H	0CH	Difference in sensor output voltage
			P0139	82H	11H	Rear O2 sensor delay response diagnosis
			P0143	07H	0CH	Minimum sensor output voltage for te cycle
	03H	Heated oxygen sensor 3 (Bank 1)	P0144	08H	0CH	Maximum sensor output voltage for test cycle
			P0146	80H	0CH	Sensor output voltage
			P0145	81H	0CH	Difference in sensor output voltage
			P0151	83H	0BH	Minimum sensor output voltage for te cycle
HO2S			P0151	84H	0BH	Maximum sensor output voltage for test cycle
			P0150	85H	0BH	Minimum sensor output voltage for te cycle
			P0150	86H	0BH	Maximum sensor output voltage for test cycle
			P0153	87H	04H	Response rate: Response ratio (lear to rich)
			P0153	88H	04H	Response rate: Response ratio (rich lean)
			P2A03 or P2098	89H	84H	The amount of shift in air fuel ratio (to lean)
		Air fuel ratio (A/F) sensor 1	P2A03 or P2099	8AH	84H	The amount of shift in air fuel ratio (to rich)
	05H	(Bank 2)	P0150	8BH	0BH	Difference in sensor output voltage
			P0153	8CH	83H	Response gain at the limited frequen
			P014E	8DH	04H	O2 sensor slow response - Rich to lean bank 2 sensor 1
			P014E	8EH	04H	O2 sensor slow response - Rich to lean bank 2 sensor 1
			P014F	8FH	84H	O2 sensor slow response - Lean to ric bank 2 sensor 1
			P014F	90H	84H	O2 sensor slow response - Lean to ric bank 2 sensor 1
			P015C	91H	01H	O2 sensor delayed response - Rich lean bank 2 sensor 1
			P015C	92H	01H	O2 sensor delayed response - Rich lean bank 2 sensor 1
			P015D	93H	01H	O2 sensor delayed response - Lean rich bank 2 sensor 1

				li	e and Test mit					
Item	OBD- MID	Self-diagnostic test item	DTC	(GST	display) Unitand	Description				
				TID	Scaling ID					
			P015D	94H	01H	O2 sensor delayed response - Lean to rich bank 2 sensor 1				
	05H	Air fuel ratio (A/F) sensor 1 (Bank 2)	P0153	95H	04H	Response rate: Response ratio (lean to rich)				
			P0153	96H	84H	Response rate: Response ratio (rich to lean)				
			P0158	07H	0CH	Minimum sensor output voltage for test cycle				
		Heated oxygen sensor 2	P0157	08H	0CH	Maximum sensor output voltage for test cycle				
HO2S	06H	(Bank 2)	P0158	80H	0CH	Sensor output voltage				
			P0159	81H	0CH	Difference in sensor output voltage				
			P0159	82H	11H	Rear O2 sensor delay response diagnosis				
			P0163	07H	0CH	Minimum sensor output voltage for test cycle				
	07H	Heated oxygen sensor 3 (Bank2)	P0164	08H	0CH	Maximum sensor output voltage for test cycle				
			P0166	80H	0CH	Sensor output voltage				
			P0165	81H	0CH	Difference in sensor output voltage				
			P0420	80H	01H	O2 storage index				
	21H	Three way catalyst function	P0420	82H	01H	Switching time lag engine exhaust index value				
	2111	(Bank1)	P2423	83H	0CH	Difference in 3rd O2 sensor output voltage				
CATA-			P2423	84H	84H	O2 storage index in HC trap catalyst				
LYST			P0430	<u> </u>						
	22H	Three way catalyst function	P0430	82H	01H	Switching time lag engine exhaust index value				
	2211	(Bank2)	P2424	83H	0CH					
			P2424 84H 84H O2 storage index in HC trap catalyst							
			P0400	80H	96H	Low flow faults: EGR temp change rate (short term)				
			P0400	81H	96H	Low flow faults: EGR temp change rate (long term)				
EGR	0411	FOR fourth	P0400	82H	96H	Low flow faults: Difference between max EGR temp and EGR temp under idling condition				
SYSTEM	31H	EGR function	P0400	83H	96H	Low flow faults: Max EGR temp				
			P1402 84H 96H High Flow Faults: EGR temp increa							
			P0402	85H	FCH	EGR differential pressure high flow				
			P0401	86H	37H	EGR differential pressure low flow				
			P2457	87H	96H	EGR temperature				

	OBD-			li	e and Test mit display)	
Item	MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description
			P0011	80H	9DH	VTC intake function diagnosis (VTC alignment check diagnosis)
			P0014	81H	9DH	VTC exhaust function diagnosis (VTC alignment check diagnosis)
			P0011	82H	9DH	VTC intake function diagnosis (VTC drive failure diagnosis)
	2511	VV/T Monitor (Donlet)	P0014	83H	9DH	VTC exhaust function diagnosis (VTC drive failure diagnosis)
	35H	VVT Monitor (Bank1)	P100A	84H	10H	VEL slow response diagnosis
			P1090	85H	10H	VEL servo system diagnosis
			P0011	86H	9DH	VTC intake intermediate lock function diagnosis (VTC intermediate position alignment check diagnosis)
VVT			Advanced: P052A Retarded: P052B	87H	9DH	VTC intake intermediate lock system diagnosis (VTC intermediate lock position check diagnosis)
SYSTEM			P0021	80H	9DH	VTC intake function diagnosis (VTC alignment check diagnosis)
			P0024	81H	9DH	VTC exhaust function diagnosis (VTC alignment check diagnosis)
			P0021	82H	9DH	VTC intake function diagnosis (VTC drive failure diagnosis)
	261	VV/T Monitor (Ponk2)	P0024	83H	9DH	VTC exhaust function diagnosis (VTC drive failure diagnosis)
	36H	VVT Monitor (Bank2)	P100B	84H	10H	VEL slow response diagnosis
			P1093	85H	10H	VEL servo system diagnosis
			P0021	86H	9DH	VTC intake intermediate lock function diagnosis (VTC intermediate position alignment check diagnosis)
			Advanced: P052C Retarded: P052D	87H	9DH	VTC intake intermediate lock system diagnosis (VTC intermediate lock position check diagnosis)
	39H	EVAP control system leak (Cap Off)	P0455	80H	0CH	Difference in pressure sensor output voltage before and after pull down
	3ВН	EVAP control system leak (Small leak)	P0442	80H	05H	Leak area index (for more than 0.04 inch)
EVAD.			P0456	80H	05H	Leak area index (for more than 0.02 inch)
EVAP SYSTEM	3СН	EVAP control system leak (Very small leak)	P0456	81H	FDH	Maximum internal pressure of EVAP system during monitoring
			P0456	82H	FDH	Internal pressure of EVAP system at the end of monitoring
	3DH	Purge flow system	P0441	83H	0CH	Difference in pressure sensor output voltage before and after vent control valve close

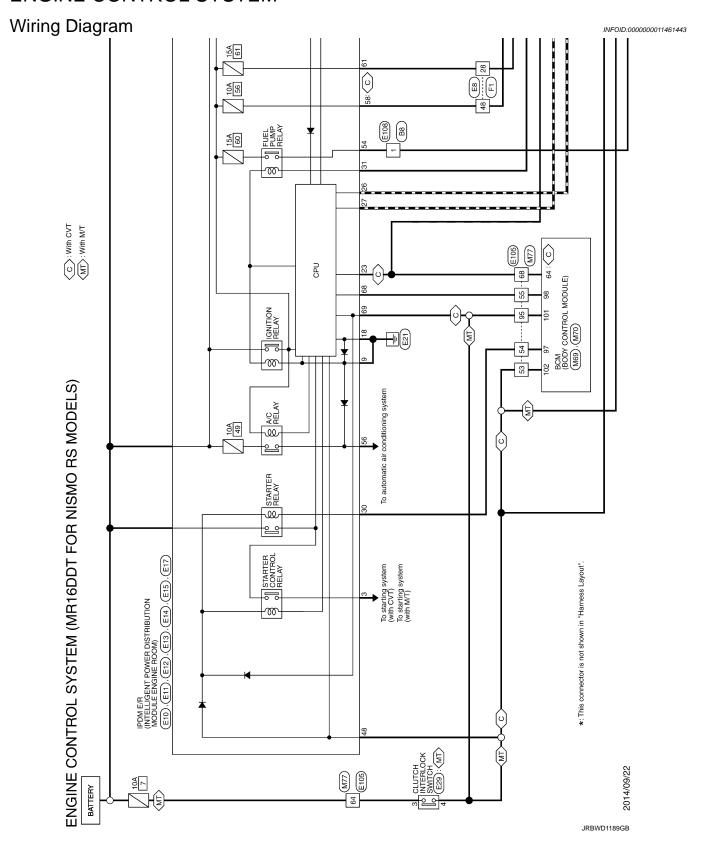
	000			lii	e and Test mit display)	
Item	OBD- MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description
	41H	A/F sensor 1 heater (Bank 1)	Low Input: P0031 High Input: P0032	81H	0BH	Converted value of heater electric current to voltage
			P0030	83H	0BH	A/F sensor heater circuit malfunction
	42H	Heated oxygen sensor 2 heater (Bank 1)	Low Input: P0037 High Input: P0038	80H	0CH	Converted value of heater electric current to voltage
		ei (balik i)	P0141	81H	14H	Rear O2 sensor internal impedance
D2 SEN- SOR	43H	Heated oxygen sensor 3 heater (Bank 1)	P0043	80H	0CH	Converted value of heater electric current to voltage
HEATER	45H	A/F sensor 1 heater (Bank 2)	Low Input: P0051 High Input: P0052	81H	0BH	Converted value of heater electric current to voltage
			P0036	83H	0BH	A/F sensor heater circuit malfunction
	46H	Heated oxygen sensor 2 heater (Bank 2)	Low Input: P0057 High Input: P0058	80H	0CH	Converted value of heater electric current to voltage
		ei (balik 2)	P0161	81H	14CH	Rear O2 sensor internal impedance
	47H	Heated oxygen sensor 3 heater (Bank 2)	P0063	80H	0CH	Converted value of heater electric current to voltage
			P0411	80H	01H	Secondary air injection system incorrect flow detected
			Bank1: P0491 Bank2: P0492	81H	01H	Secondary air injection system insufficient flow
			P2445	82H	01H	Secondary air injection system pump stuck off
SEC- OND- ARY AIR	71H	Secondary air system	P2448	83H	01H	Secondary air injection system high airflow
			Bank1: P2440 Bank2: P2442	84H	01H	Secondary air injection system switching valve stuck open
			P2440	85H	01H	Secondary air injection system switching valve stuck open
			P2444	86H	01H	Secondary air injection system pump stuck on
			P0171 or P0172	80H	2FH	Long term fuel trim
	81H	Fuel injection system function (Bank 1)	P0171 or P0172	81H	24H	The number of lambda control clamped
UEL			P117A / P219A	82H	03H	Cylinder A/F imbalance monitoring
SYSTEM			P0174 or P0175	80H	2FH	Long term fuel trim
	82H	Fuel injection system function (Bank 2)	P0174 or P0175	81H	24H	The number of lambda control clamped
			P117B / P219B	82H	03H	Cylinder A/F imbalance monitoring

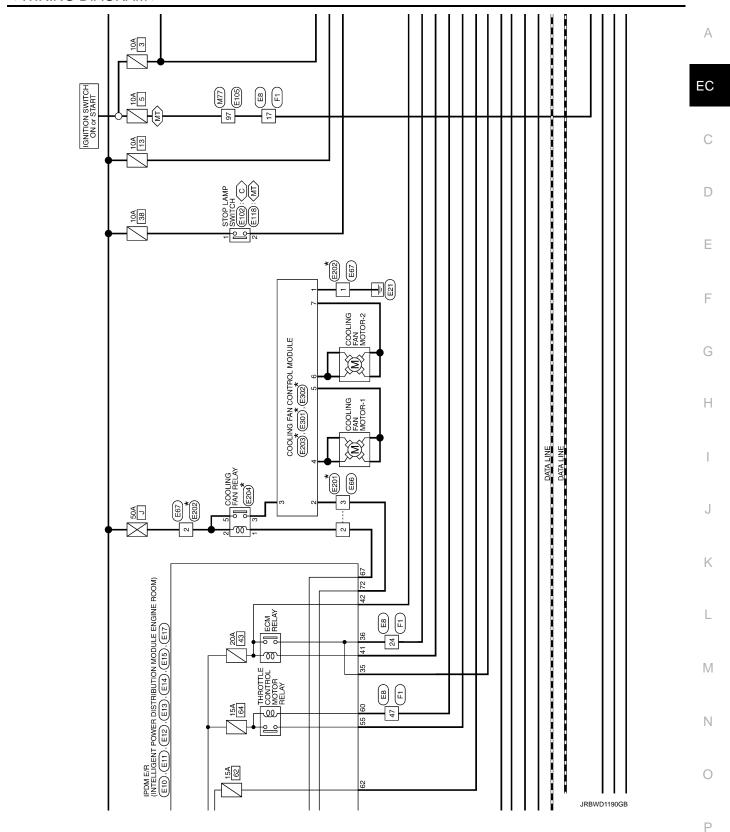
					e and Test mit	
Item	OBD- MID	Self-diagnostic test item	DTC	(GST	Unitand Scaling ID	Description
			P0301	80H	24H	Misfiring counter at 1000 revolution of the first cylinder
			P0302	81H	24H	Misfiring counter at 1000 revolution o the second cylinder
			P0303	82H	24H	Misfiring counter at 1000 revolution of the third cylinder
			P0304	83H	24H	Misfiring counter at 1000 revolution of the fourth cylinder
			P0305	84H	24H	Misfiring counter at 1000 revolution o the fifth cylinder
			P0306	85H	24H	Misfiring counter at 1000 revolution o the sixth cylinder
			P0307	86H	24H	Misfiring counter at 1000 revolution of the seventh cylinder
			P0308	87H	24H	Misfiring counter at 1000 revolution of the eighth cylinder
			P0300	88H	24H	Misfiring counter at 1000 revolution of the multiple cylinders
MISFIRE	Λ1 ⊔	Multiple cylinder misfires	P0301	89H	24H	Misfiring counter at 200 revolution of the first cylinder
	A1H	Multiple cylinder mislies	P0302	8AH	24H	Misfiring counter at 200 revolution of the second cylinder
			P0303	8BH	24H	Misfiring counter at 200 revolution of the third cylinder
			P0304	8CH	24H	Misfiring counter at 200 revolution of the fourth cylinder
			P0305	8DH	24H	Misfiring counter at 200 revolution of the fifth cylinder
			P0306	8EH	24H	Misfiring counter at 200 revolution of the sixth cylinder
			P0307	8FH	24H	Misfiring counter at 200 revolution of the seventh cylinder
			P0308	90H	24H	Misfiring counter at 200 revolution of the eighth cylinder
			P0300	91H	24H	Misfiring counter at 1000 revolution of the single cylinder
			P0300	92H	24H	Misfiring counter at 200 revolution of the single cylinder
			P0300	93H	24H	Misfiring counter at 200 revolution of the multiple cylinders

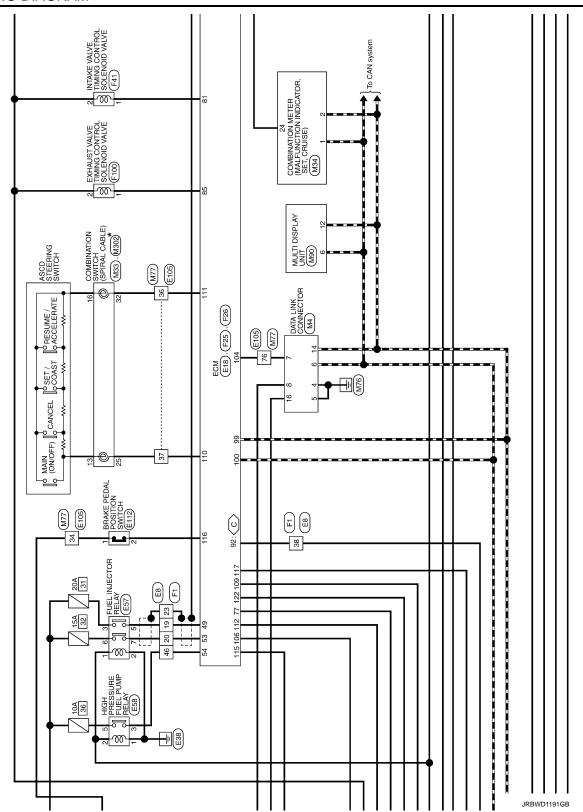
	OBD-			li	e and Test mit display)			
Item	MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description		
	A2H	No. 1 cylinder misfire	P0301	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driv- ing cycles		
			P0301	0CH	24H	Misfire counts for last/current driving cycles		
	АЗН	No. 2 cylinder misfire	P0302	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driv- ing cycles		
			P0302	0CH	24H	Misfire counts for last/current driving cycles		
	A4H	No. 3 cylinder misfire	P0303	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles		
			P0303	0CH	24H	Misfire counts for last/current driving cycles		
MISFIRE	A5H	No. 4 cylinder misfire	P0304	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles		
			P0304	0CH	24H	Misfire counts for last/current driving cycles		
	A6H	No. 5 cylinder misfire	P0305	0BH	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles		
			P0305	0CH	24H	Misfire counts for last/current driving cycles		
	A7H	No. 6 cylinder misfire	P0306	0ВН	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles		
			P0306	0CH	24H	Misfire counts for last/current driving cycles		
	A8H	No. 7 cylinder misfire	P0307	овн	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles		
			P0307 0CH 24H Misfire counts for last/current driving cycles					
	A9H	No. 8 cylinder misfire	P0308	ОВН	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles		
			P0308	0CH	24H	Misfire counts for last/current driving cycles		

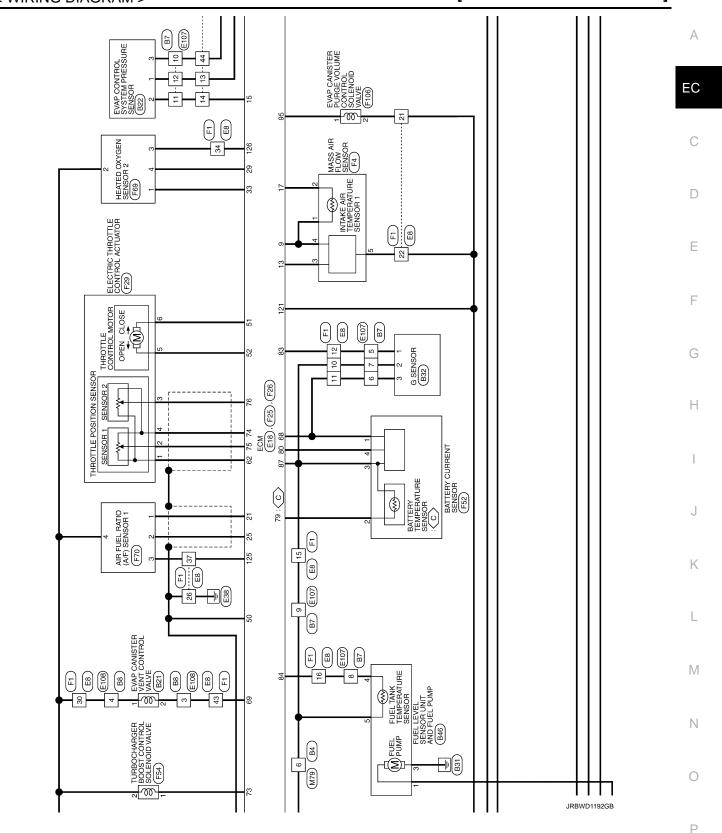
WIRING DIAGRAM

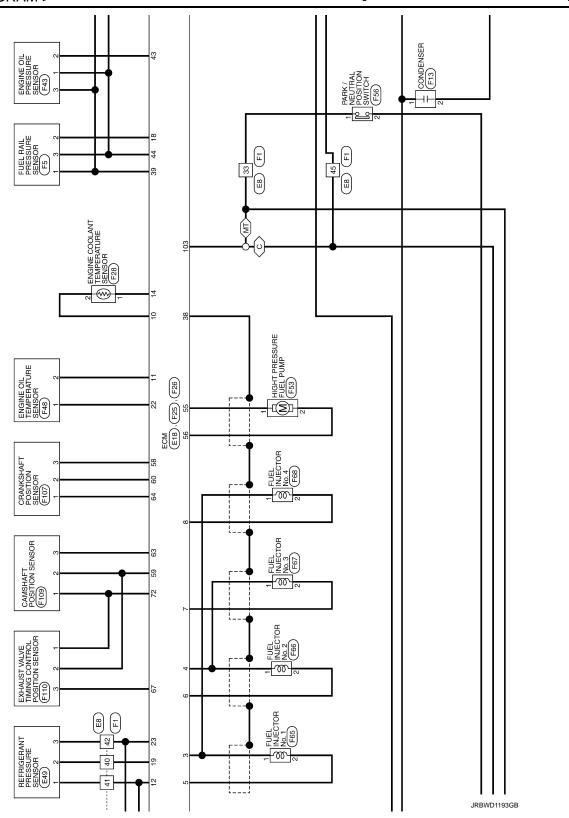
ENGINE CONTROL SYSTEM











EC C D Е F G Н K L M Ν

0

Ρ

Α

KNOCK SENSOR F12 SPARK PLUG , F26 F25), ECM E18 90 SENSOR 2 SENSOR (2) TURBOCHARGER BOOST SENSOR (F75) JRBWD1194GB

ENGINE CONTROL SYSTEM (MR16DDT FOR NISMO RS MODELS)	DT FOR NISMO RS MODELS)		= -	
	B BR		1 1	IND FUEL PUMP
Connector Type ITHIZMW-NH	19 P P P P P P P P P P P P P P P P P P P	Connector Type EUSFG7-RS	Connector Type EU3FG7-RS	
S	$^{+}$	H.S.	is.	
123	П	(1213)	(1234	45)
71 11 10 18 17	23 SHELD			
<u>a</u>	Connector No. B8	la C	la O	pecification]
No. Wire	Connector Name WIRE TO WIRE	No. Wire	No. Wire	
Н	Connector Type NS04FW-CS	2 LG -	2 BR -	
1 I	@	3 G	33	
			- 2	
П		Connector No. B32		
12 SHIELD =	4 3 2 1	Connector Name G SENSOR	Connector No. E8	
		Connector Type HS03FB-2V	-	
Connector No. B7	70	Œ	C C C C C C C C C C C C C C C C C C C	
Connector Name WIRE TO WIRE	No. Wire Signal Name [Specification]	rith)		
Connector Type TH24FW-NH	- 0		132345878	7 8 9
	2 GR = =		H.S.	324
	1 α		19 26 27 28 29 30	30 28
12 11 10 9 8 7 6 5 4 3 2 1			S1132 SS SK SK SS SK SS SK SK SK SK SK SK SK	373838
24 23 22 21 20 19 18 17 16 15 14 13	Connector No. B21	l erminal Color Of Signal Name [Specification] No. Wire		
	Connector Name EVAP CANISTER VENT CONTROL VALVE	0	la O	pecification
1	Т	2 R GND	No. Wire	
No. Wire Signal Name [Specification]	7		2	
- B			3 0	
2 W -			4 LG - [MR engine for NISMO RS]	r NISMO RS]
+			+	ot for NISMO RS]
D C			2 0	
+			- 10 R	
- В			11 G - [MR engine except for NISMO RS]	at for NISMO RS]
Н	la		+	r NISMO RS]
+			9 1	
	Υ -		13 B - [MK engine except for NISMO RS]	ot for NISMO RS]
13 P	7 7		- -	r NISMO RS
4				r Momo no

JRBWD1195GB

O	ROL SYSTEM (MR16DDT FOR NISMO RS MODELS) Connector No. E10 Connector No. E10	Connector Type NS08FBR-CS Connector Type			0 1	LO 19 18 HO 19 18 HO 19 18 HO 19 18 HO 19 19 19 19 19 19 19 1	- [MR engine except for Nissanon as	- [MR regine for MISMO RS]	Terminal Color Of Signal Name [Specification] Terminal Color Of Signal Name [Specification] Terminal G	Wire No. Wire	R	10 K [WINK-CH-LEAD] 30 F	G - [Without front for lamp]	V - [With front fog lamp] 42	- [MR engine for NISMO RS] Connector Name Prov. BY	ROOM) 44	- Connector Type M06FB-LC Connector No. E13 45 W	_ 	RS WH	- 1	intelligent Key]	14	28 27 26 25	100 FC CC CC FC	No. Wire Signal Name [Specification]	- IAM engine for NISMO RS] 9 B/Y - 10M engine for NISMO RS] 9 B/Y	14 R	Wire	25 SP - Terminal Color Of	- No.	48 BR	28 Y - 49 (49)	 Y = 51	32 H = 24 D	40	66	+	+	
	SYSTE		1	1	MD coming for MI	R engine except for	AR engine except fo	- [MR engine for Ni	1	1	1			[MR engine except fo		1	1		- [MR engine except fc	- [MR engine for N		-	1		1	- [MR engine for Ni	- [MR engine except fo	- IMR engine except for	- JWIN engine for IN.	1	1								
N	Š –					-	-					1	1	L				4	1	+	1			+	╀	H		4	+	L									

EC

Α

D

Е

F

G

Н

Κ

L

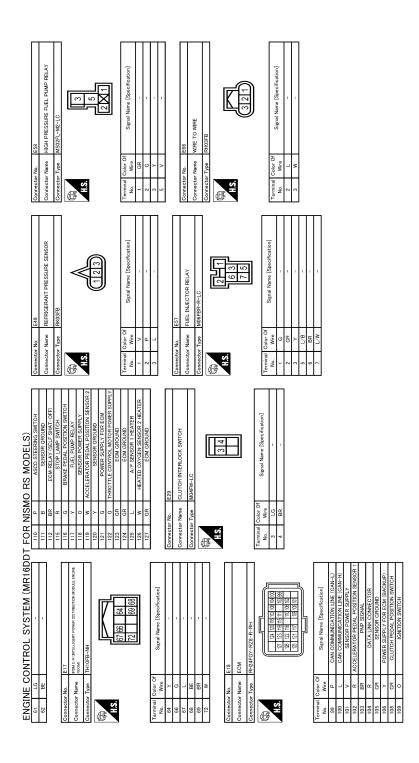
M

Ν

0

JRBWD1196GB

Ρ



JRBWD1197GB

Control March Ma	ENGINE CONTROL STATEM (MIKTOL Connector No. F67	DI FOR NI Connector No.	SMO RS MODELS)		9	٦	- [MR engine except for NISMO RS]
Signar Name Societication Societication Signar Name Societication Signar Name Societication Signar Name Societication Societ				1	9	0	- [MR engine for NISMO RS]
Connector Type ModRPV-LC Fig. Connector Type ModRPV-LC Fig. Connector Type ModRPV-LC Fig. Connector Type	WIRE TO WIRE	Connector	STOP LAMP SWITCH		7	œ	1
Signal Name Specification French Wing Specification French Spe	X02FB	Connector	M04FW-LC	1	80	SB	1
Signal Name (Specification) Trimmal Color Of Signal Name (Specificat			64	1	6	œ	- [MR engine for NISMO RS]
Signal Name (Specification) Terminal Color Off Signal Name (Specification) Termi		Œ	H	1	6	>	- [MR engine except for NISMO RS]
3 4			┝	-	10	o	
Signal Name (Specification)	(Ś	67	-	Ξ	٦	1
Terminal Color Of Signal Name (Specification) Terminal Color Of Signal Nam	((2 1))		89	1	12	>	1
Signal Name Specification No. War No. War Specification No. War Sp)		70	1	13	۵	
Trained Color Of Signal Name Specification 1				1	14	٦	
Framinal Classification Transit Specification Transit Signal Name Classification Transit			H	1	15	5	1
10 Windows					16	ä	1
1	Signal Name [Specification]		Signal Name [Specification] 76	1	17	æ	1
1	1	-	82		18	>	1
1 1 1 1 1 1 1 1 1 1	i	6	- 62		61	c	1
Connector No. Figure Fig			2.08		2 02	, a	
Connector Name First Connector Name Connector Nam		,			2 5	3	1
Connector No. E105 Connector No. E105		,	200	1	7 00	£ (1
Connector No. E105 Signal Name Specification Connector No. E105 Signal Name Connector No. E105 Signal	10		+		77	۷ ا	
Connector Number Figure Connector Number Co	CELERATOR PEDAL POSITION SENSOR		882	1	23	SHELD	ı
Connector Name Wife TO WIRE Signal Name (Specification) Terminal Color Of Signal Name (Specification) Signal Name (S		Connector	E105	1			
Connector Type TH80MM-CFRT-TM4 92 R9 Connector Num Wife Connector Num Conne	H06FB	Connector	90	-			
Connector Type THERMW-CS16-TN4 95 R			16		Connector		E108
Secondaries Connector Name Signal Name Specification Connector Name Name Connector Name Conn		Connector	TH80MW-CS16-TM4 92	1		Г	Library Car Library
Second Part Part	[95	1	Connector		WIRE TO WIRE
5 6 1 1 1 1 1 1 1 1 1	֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֝֡֝֞֝֝֞֝֞֝֞֝֞֝֞֝֞֝֞֝֞	1	96		Connector	Г	NS04MW-CS
1 1 1 1 1 1 1 1 1 1	2		97	1		1	
Feminal Color Of Signal Name [Specification] Feminal Color Of Signal	2	χį	86	-	Œ		
Terminal Color Of Signal Name (Specification) Terminal Color Of No. Wire Specification Connector No.			000	1	#		
Terminal Color Of Signal Name (Specification) Connector Name Name Name (Specification) Connector Name Name Name Name Name Name Name Name			100		<u> </u>		
Terminal Color Of Signal Name (Specification) Connector No. Wire Connector No. Connector No							•
Terminal Golor Of Signal Name (Specification) Connector Name (Name (Specification) Connector Name (Name (Specification) Connector Name (Name (Signal Name [Specification]						1 2 3 4
Fig. 10 Fig.							
1	-		Signal Name [Specification]				
1 L No. No		No.	Connector Name				
Commercer Type Thrightmy-184 No. Wire No. Wire	_	-				Color Of	Signal Name [Specification]
10 R	_	4	- Connector Type		No.	Wire	Company of the compan
W W C C C C C C C C		9	1		-	۵	
W W Sweet W W W W W W W W W		10	1		2	57	
1 2 3 4 5 6 7 8 9 10 11 2 1 1 2 3 4 5 6 7 8 9 10 11 12 3 1 1 1 1 1 1 1 1 1		Ξ			e	H	- [MR engine for NISMO RS]
Simple S		12		С	۳.	-	- FMR engine except for NISMO RS
13 14 15 19 20 21 22 34		13		7 1 0 8 0 7 0	4	۵	1
Selection		t	13 1/1 15	8 10 20 21 22 24			
E		†		0 10 20 2 1 20 27			
P		34					
P Terminal Color Of Terminal Color Of P Terminal Color Of P Terminal Color Of P Terminal Color Of P Terminal Color Of Term		35					
P		36	- Terminal Color Of				
BR 1		5	- N	e [Specification]			
BR		2					
N		70					
3 V 5 C C		50	'				
BE - 5		24		1			
		22	ı				

EC

Α

D

Е

F

G

Н

Κ

L

M

Ν

0

JRBWD1198GB

Ρ

Connector No. E204 Connector Name COOLING FAN RELAY Connector Type 24547,97900	#\s.	Terminal Color Of Signal Name [Specification] No. Wire Signal Name [Specification]	Connector Nume COOLING FAN CONTROL MODULE Connector Type 6188-0259	Terminal Color Of Signal Name (Specification) No Wee Signal Name (Specification)
Commetter No. E202 Commetter Name WRE TO WIRE Commetter Type X02AMS	#3 #13	Signal Name [Specification]	Connector No. E203 Connector Name COOLING FAN CONTROL MODULE Connector Type S.J.D.I FDV-5N22 SAME THS	No. Wire Signal Name (Specification) No. Wire Signal Name (Specification) 1 B/Y POMM SIGN 2 NV POMM SIGN 2 NV POMM SIGN 2 NV POMM POWER 2 NV POMM POWER
STEM (MR16DDT FOR NISMO RS MODELS) Compensor of the c	#8.	Terminal Golor Of Signal Name [Specification] Terminal Color Of Signal Nam	Connector No. E201 Connector Name WHE TO WIRE Connector Type RH403MB A.S. (12.3)	Terminal Color Of Signal Name [Specification] Terminal Color Of Signal Name [Specification] Terminal No.
ENGINE CONTROL SYSTEM (MR16DC Connector No. E112 Connector Name BRAKE PEDAL POSITION SWITCH MOTERATOR MOTERAL CONNECTOR Type MOZERPALC	#S.	Terminal Color Of Signal Name [Specification] No. Wire Signal Name [Specification]	Connector No. E113 Connector Name CLUTCH PEDAL POSITION SWITCH Connector Type MOZPBR-LC HAS.	Terminal Color Of Signal Name Specification No. Wire OR

JRBWD1199GB

ENGINE	ENGINE CONTROL SYSTEM (MR16DD	T FO	RNISA	STEM (MR16DDT FOR NISMO RS MODELS)				
Connector No.	E302	16	Ь	-	Connector No.	F4	Connector No. F12	
Connector Name	COOLING FAN CONTROL MODULE	17	SS c		Connector Name	MASS AIR FLOW SENSOR	Connector Name KNOCK SENSOR	
Connector Tone	6188-0259	9	9 (Connector Time	DHUGEB	Connector Time BS00ECV B-AHV	
odi monumo	٦.	2	8	1		7	1	
Œ		21	o	1	Œ			
3 =		22	BR	- [MR engine for NISMO RS]	3 =	R		
ŽĮ.	Į.	22	_	- [MR engine except for NISMO RS]	2			
		23	В	1		((12345))	H112H	
)	24	œ	1				
		25	œ	1				
		56	В					
) le	J.C	27	В	i	Terminal Color Of	JO	Terminal Color Of Simulation Inc.	
No. Wire	Olgridi Name	28	œ	i	No. Wire		No. Wire Signal Ivame [Specimoation]	
9	1	29	Α	n	-	1		
- 2	1	30	GR	- [MR engine except for NISMO RS]	2 Y	1	2 B -	
		30	œ	- [MR engine for NISMO RS]	3	1		
		31	BG		4 W			
Connector No.	14	32	2	1	5 BR	1	Connector No. F13	
		33	8				Т	
Connector Name	WIRE TO WIRE	34	ś	- [MR engine for NISMO RS]			Connector Name CONDENSER	
Connector Time	SAA36EB_BS10_S 179	5	0	- [MD carries account for NISMO DC]	On software No	13	Connector Time MOSEWALL	
comiscon 19pe		5 5		Control in the contro	CONTINUE NO.	2		
ą.		9 5	5 8	- [Without Intelligent Ney]	Connector Name	FUEL RAIL PRESSURE SENSOR	đ.	
至	1817181818181818	8	5 0	- [With Intelligent Key]		dia communication and a second	1	
SI.		8	Σ ;	'	Connector Type	٦	<u>F</u>	
	25 24 23 22 21 20 19	38	GR	1	ą			
	28 27 28	40	۵	=	图		ţ	
	3939373935343333	41	BR	 [MR engine for NISMO RS] 	Ę		7	
	4847148454443140	41	^	- [MR engine except for NISMO RS]	ė			
		45	٦	- [MR engine except for NISMO RS]		((1 2 3))		
Terminal Color Of		45	М	- [MR engine for NISMO RS]			Terminal Color Of	
No. Wire	Signal Name [Specification]	43	_	- [MR engine for NISMO RS]			No. Wire Signal Name [Specification]	
-		43	×	- [MR engine except for NISMO RS]			~	
- 6	1	44	a	- [MR apprise average for NISMO RS]	Terminal Color Of	L	1 2	
1 %	- [MR anging except for NISMO BC]	44	ć	- [MR engine for NISMO RS]		Signal Name [Specification]		
>	- [MR epition for NISMO RS]	45	8	1	t			
4 PG	- [MR engine	46	6		. v			
000	- MD anning ax	2 2	: >		t			
5 -	1	48	- 8	- Mish Josefficent Keyl	1			
+		P	5 >	- Different Intelligent Keyl				
	- [MR anning avoint for NISMO RS]	9	1	Lynnight meangair nay				
ł	- [MD province for MISMA DC]							
+	Lon Owen for Internal -							
: c	- [MK engine except for NISMO KS]							
+	- [MK engine for NISMO KS]							
4	1							
+	- [MR engine exc							
13 BG	- MR engine							
14 L	- [MR engine for NISMO RS]							
-	- [MR engine except for NISMO RS]							
15 BR								

EC

Α

С

D

Е

F

G

Н

1

Κ

L

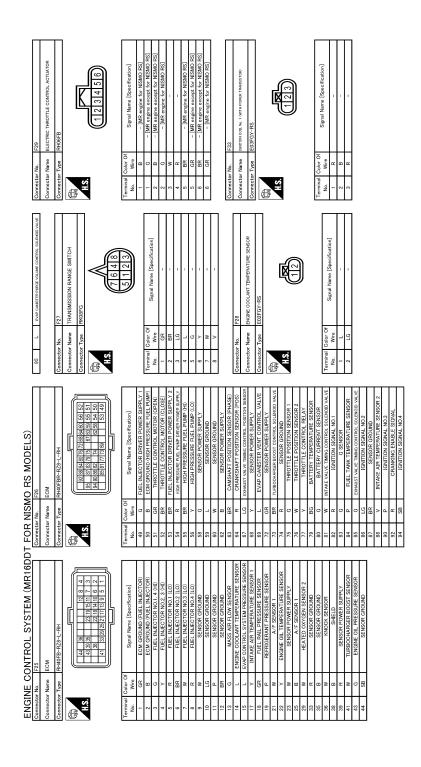
M

Ν

0

JRBWD1200GB

Р



JRBWD1201GB

Connector Name Conn	ПП		ПП	
Connector Name Conn	SAZOHEOV CURRENT SENSOR	Signal Name [Specification]	HIGH PRESSURE FUEL PUMP HIGHSTLGY-VR 1	Signal Name [Specification]
Connector Name Specification Terminal Colorector Name Specification Name Name Specification Name Specification Name Specification Name Name Name Specification Name				No. Wire 1 BR 2 Y
COUNTROL SYSTEM (MRI 6DDT FOR NISMO RS MODELS)	[S S S N N ■			
Connector No. Connector No	CIGNE OIL PRESSURE SENSOR	Signal Name [Specification] [MR engine except for NISMO RS] - [MR engine for NISMO RS]	SIGNE OIL TEMPERATURE SENSOR	Signal Name [Specification]
Commercer Name Commercer Type Commercer Name Comm		No. Wire 1 SB 2 G 3 L		rminal Color Of No. Wire 1 Y Z P
Connector No. 2 offine Connector No. 5 of Separation No. 5 of Se				
GINE CONTROL SYSTEM (MR16DDT FOR PROPERTY (MR16DT FOR PROPERTY (MR1	VISMO RS MODELS		No. F41 Name privac out their control, excised out of type E02FG-FS-LGY	
GINE CONTROL SYSTEM (MR16DD SECONTROL SYSTEM (Connector Connector Connector H.S.		Connector Connector Connector H.S.	
	SINE CONTROL SYSTEM (MR16DD to No. 162	Signal Name	tor No. F35 Let Name Courton co. to controvers traverstron tor Type EEGFGY-RS Type (F123)	Signal Name

EC

Α

D

Е

F

G

Н

1

J

Κ

L

M

Ν

0

JRBWD1202GB

Р

Connector No. F59 Connector Name HEATED OXYGEN SENSOR 2 Connector Type RHUGANB	HS. 4 3 2 1	Terminal Color Of Signal Name (Specification) Nuc. Wire Signal Name (Specification)	Connector No. F70 Connector Name AIR PUEL RATIO (A/F) SENSOR 1 Connector Type RHIGHLGY	HS. (4 3 2 1)	Terminal Color Of Signal Name (Specification) No. Whe Signal Name (Specification) 1 2 8 -
Connector No. F67 Connector Nume PUEL INJECTOR No. 3 Connector Type HSQFGV	Hs.	Terminal Codor Of Signal Name Specification No. Wire Signal Name Specification	Connector Name FEB. Connector Name FEE. INJECTOR No. 4 Connector Type HSQFFOY Connector Type HSQFFOY	\$ 1	Terminal Color Of Signal Name Specification No. Wire 1 G - -
STEM (MR16DDT FOR NISMO RS MODELS)	H3 H3	Terminal Color Of Signal Name (Specification) No. Wire	Connector No. F166 Connector Nume FUEL INJECTOR No. 2 Connector Type HS02FGY	HS HS	Terminal Codor Of Signal Name (Specification) No. Wire No. Wire 1 LG - IMR augine accept for NISMO RS] 1 Y - IMR angine for NISMO RS] 2 BR - IMR angine for NISMO RS] 2 SB - IMR angine for NISMO RS]
IGINE CONTROL SY sector No. F54 sector Name Tussocialess ecost con nector Name EUZEL-RS-LGY	SH SH	Terminal Color Of Signal Name [Specification] No. Wire HR -	Connector Name PARK / NEUTRAL POSITION SWITCH Connector Type RR027FB	**	Terminal Color Off Signal Name (Specification)

JRBWD1203GB

ENGINE CONTROL SYSTEM (MR16D	STEM (MR16DDT FOR NISMO RS MODELS)		
Connector No. F75	Connector No. F106	Connector No. F109	Connector No. M4
Connector Name TURBOCHARGER BOOST SENSOR	Connector Name EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE	Connector Name CAMSHAFT POSITION SENSOR	Connector Name DATA LINK CONNECTOR
Connector Type RH04FB	Connector Type E02FL-RS-LGY	Connector Type RH03FB	Connector Type BD16FW
		E	
<u>(12134</u>)			7
Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification]
H	1 G - [MR engine except for NISMO RS]	1 G - [MR engine except for NISMO RS]	B C
2 L - [MR engine except for NISMO RS]	2 G - [MR engine for NISMO RS]	2 L - [Mik engine for NISMO RS]	20 -0
2 W - [MR engine for NISMO RS]	2 L - [MR engine except for NISMO RS]	3 BR -	7 W -
3 SB - [MR engine for NISMO RS] 3 V - IMR engine except for NISMO RS]			8 LG
4 SB - [MR engine except for NISMO RS]	Connector No. F107	Connector No. F110	╀
4 V - [MR engine for NISMO RS]	Connector Name CRANKSHAFT POSITION SENSOR	Connector Name EXHAUST VALVE TRAING CONTROL POSITION SENSOR	
	Connector Type RH03FB	Connector Type RH03FB	Connector No. M33
Connector No. F100	Œ.	đ.	Connector Name COMBINATION SWITCH (SPIRAL CABLE)
Connector Name EXHAUST VALVE TIMING CONTROL SOLENDID VALVE			Connector Type TK08FGY=1V
Connector Type E02FG-RS-LGY	13	13.	₫.
E	(1213)	(1213)	
Š.			24 25 26
(15)	Terminal Color Of Signal Name [Specification] No. Wire	Terminal Color Of Signal Name [Specification] No. Wire	31 32 33 34
		1 GR -	
1-1-1-01	2 W =	2 L	Terminal Color Of Signal Name [Specification]
No. Wire Signal Name [Specification]	,		+
			25 P –
2 R -			26 GR –
			+
			m :
			33 ×

EC

Α

D

Е

F

G

Н

ı

K

L

M

Ν

0

JRBWD1204GB

Ρ

ENGIN	E CONTROL :	ENGINE CONTROL SYSTEM (MR16DDT FOR NISMO RS MODELS)	FO!	R NISA	10 RS MODELS)	83	3	PEAP BAND ANT+	37	۵		
Connector No.	T		Connec	connector No.	ROM	82	\$	REAR BMPR ANI+	3/	ı		
Connector Name	ame COMBINATION METER	WETER	Connec	Connector Name	BCM (BODY CONTROL MODULE)	83	в 6	REAR BMPR ANT-	52	œ .	1	
	TUADOMINIO		ć		ECADOM-ELAG-CA	# u	ž d	BOOM ANT 1-	2 2	- le		
Connector	٦.		Connec	Connector Type	reaustw-rhao-sa	8 8	5	ROOM ANT I	n 1	9 4		
Q.			ąĮ.			8 2	9 0	ROOM ANT 2+	2 2	1	ı	
雪			事		Ш	ò	٤ :	ROOM AN I 2-	000	2 ,		
S			SH		1 56 57 59 60 61 63 64	88 8	> -	LUGGAGE ROOM ANT	200	9 >	1	
	20 19 18 17 16 15 14	13 11 10 9 8 7 6 5 4 2 1			04	8 6	2 3	COGGAGE ROOM ANT	70	- 141		
	38 37 38	31 29 28 27 26 25 24 23 22 21			00 07 00	8 5	: ;	ACC CONTING	8 8	: (
						5	> (ON INC. COLOR	5 0	5 5	ı	
						28	¥ 5	FUSH-BIN IGN SWILL GND	2 8	<u></u>		
			ļ			2 2	5 8	I-NET WARM BUZZER	000	- ;		
lerminal Co	Signal Signal	Signal Name [Specification]	lerminal No	al Color Of	Signal Name [Specification]	80 5	£ 6	STADITO DELAY CONT	ρ ο	> 0	1	
$^{+}$		II NAA	9	2	> IGS CIVIC CARA LANCOCC TIME	6	9 .	THE CONTRACTOR OF THE CONTRACT	8 8	=		
- c	1 0	T NVO	8 6		DATT(DISC)	8		TON OF INCIDENT AND INCIDENT	2 7	٥ -		
1	2 1011111	CAINT OF STREET	5	1 8	DAGG DOOD IN COLUMN	66		IGN RELAT (F/B) CON	- 6	2 8	i	
4 1	+	PEED SIGNAL (8-PULSE)	S S	8	TASS DOOR UNEN DOLLO	3	1	We Hear	7 5	5 (
0	+	PADDLE SHIFTER OF SWITCH SIGNAL	2	>	I DRN SIG LH OUTPUT	5	-[CLUICH INTERLUCK SW	5	5		
9		FUEL LEVEL SENSOR SIGNAL	9	\$	TURN SIG RH OUTPUT	102	4	NEUTRAL SW	9/	>	1	
7	Α.	AIR BAG SIGNAL	63	BR	INT ROOM LAMP CONT	103	4	FR DEFROST SW	78	9	1	
œ	OL.	1	9	œ	REVERSE SW	104	SB	CVT SHIFT SELECT PWR SPLY	79	>	1	
6	W SEAT BELT BUCK!	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)	92	>	ALL DOOR LOCK OUTPUT	105	>	STOP LAMP SW 2	80	FC	-	
10	SB PARKING	BRAKE SWITCH SIGNAL	99	SB	DOOR_UNLOCK_DR	106	λ.	BLWR RELAY CONT	83	Д		
11	G BRAKE FLUI	BRAKE FLUID LEVEL SWITCH SIGNAL	67	В	GND				84	5	-	
13	GR ILLUMINAT	ILLUMINATION CONTROL SIGNAL	99	٦	PW PWR SPLY (IGN)				85	BR	1	
14	R MANUAL N	MANUAL MODE SHIFT UP SIGNAL	69	۵	PW PWR SPLY (BAT)	Connec	Connector No.	M77	98	97	1	
15	L ACC	ACC POWER SUPPLY	70	\	BAT (F/L)	į	N.	L Carri	06	SHIELD	1	
16	W MANUAL MC	MANUAL MODE SHIFT DOWN SIGNAL					- August	mire to mire	91	λ	1	
17	G WASHER	WASHER LEVEL SWITCH SIGNAL				Connec	tor Type	Connector Type TH80FW-CS16-TM4	92	BR	ı	
18	R	SECURITY SIGNAL	Connec	Sonnector No.	M70	0			92	Υ		
19	GR AMBIE	AMBIENT SENSOR SIGNAL		4	(THEORY POLITICAL MODE)	13			96	_	1	
50	R AMBIEN	AMBIENT SENSOR GROUND		oron Manue	BOIL (BOOL CONTROL MODOLE)	ŧ			97	GR	1	
21	8	GROUND	Connec	Sonnector Type	TH40FW-NH	į.			86	g	1	
22	80	GROUND						2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	66	œ	ī	
23	8	GROUND	E					9 P	100	-	1	
24	T FUEL LE	FUEL LEVEL SENSOR GROUND										
25	8	VDC GROUND	2	,	and and an interest and an int							
56	V PADDLE SHIF	PADDLE SHIFTER DOWN SWITCH SIGNAL			04 62 02 02 04 05 05 05 05 05 05 05 05 05 05 05 05 05	Terminal	al Color Of	Cinnal Massa [Consideration]				
27	LG BATTE	BATTERY POWER SUPPLY				No.	Wire	orginal realite [opeomoactori]				
28	GR IG	IGNITION SIGNAL				-	_	ı				
59	V PASSENGER S	PASSENGER SEAT BELT WARNING SIGNAL				4	>	-				
31	P A/C AUTO AMP. C:	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL	Terminal	al Color Of	[:3]33	9	Ь	i				
36	Y	MANUAL MODE SIGNAL	Š.	Wire	oignal Ivalite Lopecinicacioni	10	۳	1				
37	MON-M/	NON-MANUAL MODE SIGNAL	72	SB	A/C IND OUTPUT	=	œ	1				
38	P ALTI	ALTERNATOR SIGNAL	75	57	DR DOOR REG SW	12	57	1				
			9/	9	PASS DOOR REG SW	13	>	1				
			78	۵	DRIVER DOOR ANT+	14	SHIELD	1				
			79	>	DRIVER DOOR ANT-	34	9	1				
			80	BR	PASS DOOR ANT+	32	SB	1				
			-8	G	PASS DOOR ANT-	36	В	1				
				-			4					

JRBWD1205GB

EC

Α

D

Е

F

G

Н

ı

. [

Κ

L

M

Ν

0

JRBWD1206GB

2015 JUKE

Р

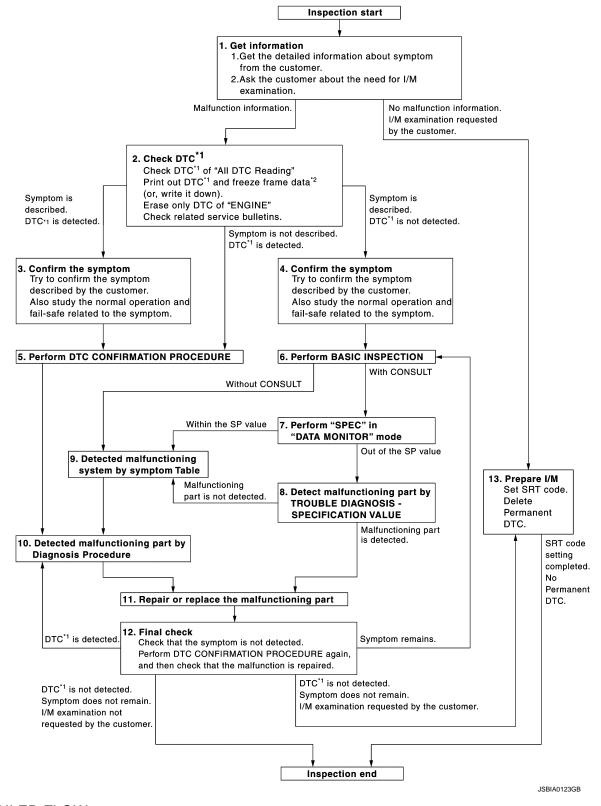
MARZ MODELS) MARZ COMENATOR SWITCH SPIPAL CARLE) TYGGFGY ZO [19 [19 [17] [6 [15] [4] 3]	Signal Name [Specification]	1	-	_		_	-	-	-															
NISA I No.	Color Of Wire	œ	Μ	٦	В	BR	9	Ь	Υ															
FOR NIS Connector Nano Connector Nano Connector Type	Terminal No.	13	14	15	16	17	18	19	20															
ENGINE CONTROL SYSTEM (MR16DDT FOR NISMO RS MODELS) Connector Name MRE TO WRITE Connector Type H12PV-NH Connector Type TT08FG/Y H.S.	Signal Name [Specification]	1	-	1		1	1			M90 Militi Display Init	TH12FW-NH		12 56	7 10 11 12		Signal Name [Specification]	BATTERY POWER SUPPLY	ILLUMINATION SIGNAL	ILLUMINATION SIGNAL GROUND	CAN-H	IGNITION SIGNAL	GND	GND	CAN-L
NE O	Color Of Wire	BR	W	BR	٦	>	ΓC			o N	r Type				Color Of	Wire	>	>	GR	٦	ΓC	В	В	۵
ENGINE Connector No. Connector Name Connector Type H.S.	Terminal No.	2	3	2	9	10	11			Connector No.	Connector Type	€ E	į		Terminal	No.	-	2	2	9	7	10	11	12

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

OVERALL SEQUENCE



< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

1.GET INFORMATION FOR SYMPTOM

1. Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred) using the "Diagnostic Work Sheet". (Refer to EC-147, "Diagnostic Work Sheet".)

Ask if the customer requests I/M examination.

Malfunction information, obtained>>GO TO 2.

No malfunction information, but a request for I/M examination>>GO TO 13.

2.CHECK DTC

- Check DTC.
- 2. Perform the following procedure if DTC is displayed.
- Record DTC and freeze frame data. (Print them out with CONSULT or GST.)
- Erase only DTC of "ENGINE".
- (F) With CONSULT: "How to Erase DTC and 1st Trip DTC" in EC-83, "CONSULT Function".
- Without CONSULT: "How to Erase Self-diagnostic Results" in EC-80, "On Board Diagnosis Function".
- Study the relationship between the cause detected by DTC and the symptom described by the customer. (Symptom Matrix Chart is useful. Refer to EC-564, "Symptom Table".)
- Check related service bulletins for information.

Are any symptoms described and any DTCs detected?

Symptom is described, DTC is detected>>GO TO 3.

Symptom is described, DTC is not detected>>GO TO 4.

Symptom is not described, DTC is detected>>GO TO 5.

3.confirm the symptom

Try to confirm the symptom described by the customer (except MIL ON).

Also study the normal operation and fail-safe related to the symptom. Refer to EC-571, "Description" and EC-109, "Fail Safe".

Diagnosis Work Sheet is useful to verify the incident.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

f 4 . CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer.

Also study the normal operation and fail-safe related to the symptom. Refer to Refer to EC-564, "Symptom Table" and EC-109, "Fail Safe".

Diagnosis Work Sheet is useful to verify the incident.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

${f 5}$.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the displayed DTC, and then check that DTC is detected

If two or more DTCs are detected, refer to EC-111, "DTC Inspection Priority Chart" and determine trouble diagnosis order.

NOTE:

- Freeze frame data is useful if the DTC is not detected.
- Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.

If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIR-MATION PROCEDURE.

EC-145

Is DTC detected?

YES >> GO TO 10.

Revision: 2014 October

NO >> Check according to GI-44, "Intermittent Incident".

EC

Α

D

Е

Н

Ν

2015 JUKE

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

6. PERFORM BASIC INSPECTION

Perform EC-149, "Work Procedure".

Do you have CONSULT?

YES >> GO TO 7. NO >> GO TO 9.

7.PERFORM SPEC IN DATA MONITOR MODE

(E)With CONSULT

Check that "MAS A/F SE-B1", "MAS A/F SE-B2", "B/FUEL SCHDL", "A/F ALPHA-B1" and "A/F ALPHA-B2" are within the SP value using "SPEC" in "DATA MONITOR" mode with CONSULT. Refer to EC-176, "Component Function Check".

Is the measurement value within the SP value?

YES >> GO TO 9. NO >> GO TO 8.

f 8.DETECT MALFUNCTIONING PART BY TROUBLE DIAGNOSIS - SPECIFICATION VALUE

Detect malfunctioning part according to EC-177, "Diagnosis Procedure".

Is a malfunctioning part detected?

YES >> GO TO 11. NO >> GO TO 9.

9.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to <u>EC-564</u>. "Symptom Table" based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptoms.

>> GO TO 10.

10. DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

NOTE:

NO

The Diagnosis Procedure in EC section described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnosis Procedure. For details, refer to GI-47, "Circuit Inspection".

Is a malfunctioning part detected?

YES >> GO TO 11.

>> Monitor input data from related sensors or check voltage of related ECM terminals using CON-SULT. Refer to EC-94, "Reference Value".

11. REPAIR OR REPLACE THE MALFUNCTIONING PART

- 1. Repair or replace the malfunctioning part.
- Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
- 3. Check DTC. If DTC is displayed, erase it. Refer to the following.
 - (F) With CONSULT: "How to Erase DTC and 1st Trip DTC" in EC-83, "CONSULT Function".
 - Without CONSULT: "How to Erase Self-diagnostic Results" in EC-80, "On Board Diagnosis Function".

>> GO TO 12.

12. FINAL CHECK

When DTC was detected in step 2, perform DTC CONFIRMATION PROCEDURE or Component Function Check again, and then check that the malfunction have been completely repaired.

When symptom was described from the customer, refer to confirmed symptom in step 3 or 4, and check that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 10.

YES-2 >> Symptom remains: GO TO 6.

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

NO-1 >> No request for I/M examination from the customer: Before returning the vehicle to the customer, always erase unnecessary DTC in ECM and TCM (With CONSULT: Refer to "How to Erase DTC and 1st Trip DTC" in EC-83, "CONSULT Function", Without CONSULT: Refer to "How to Erase Self-diagnostic Results" in EC-80, "On Board Diagnosis Function"). If the completion of SRT is needed, drive vehicle under the specific driving pattern. Refer to EC-165, "SRT Set Driving

NO-2 >> I/M examination, requested from the customer: GO TO 13.

13. PREPARE FOR I/M EXAMINATION

- Set SRT codes, Refer to EC-164, "Description".
- 2. Erase permanent DTCs. Refer to EC-170, "Description".

>> INSPECTION END

Diagnostic Work Sheet

DESCRIPTION

There are many operating conditions that lead to the malfunction of engine components. A good grasp of such conditions can make troubleshooting faster and more accurate.

In general, each customer feels differently about symptoms. It is important to fully understand the symptoms or conditions for a customer complaint.

Utilize a diagnostic worksheet like the WORKSHEET SAMPLE below in order to organize all the information for troubleshooting. Some conditions may cause the MIL to illuminate or blink, and DTC to be detected. Examples:

- Vehicle ran out of fuel, which caused the engine to misfire.
- Fuel filler cap was left off or incorrectly screwed on, allowing fuel to evaporate into the atmosphere.

KEY POINTS

WHAT Vehicle & engine model WHEN Date, Frequencies WHERE..... Road conditions **HOW** Operating conditions, Weather conditions, **Symptoms**

INFOID:0000000011461445

SEF907L

EC-147 Revision: 2014 October 2015 JUKE

EC

D

Е

N

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

WORKSHEET SAMPLE

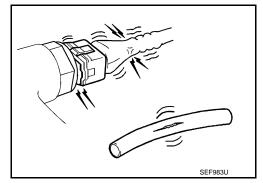
Customer name MR/MS		Model & Year	VIN	
Engine #		Trans.	Mileage	
Incident Date		Manuf. Date	In Service Date	
Fuel and fuel filler cap		☐ Vehicle ran out of fuel causing misfire ☐ Fuel filler cap was left off or incorrectly screwed on.		
Symptoms	☐ Startability	☐ Impossible to start ☐ No combust ☐ Partial combustion affected by th ☐ Partial combustion NOT affected ☐ Possible but hard to start ☐ Other	nrottle position I by throttle position	
	☐ Idling	☐ No fast idle ☐ Unstable ☐ H☐ Others [High idle ☐ Low idle	
	☐ Driveability	☐ Stumble ☐ Surge ☐ Knock☐ Intake backfire ☐ Exhaust backfi☐ Others [☐ Lack of power re]	
	☐ Engine stall	☐ At the time of start☐ While accelerating☐ Just after stopping☐ While loadi	lerating	
Incident occurrence		☐ Just after delivery ☐ Recently ☐ In the morning ☐ At night ☐ In the daytime		
Frequency		☐ All the time ☐ Under certain conditions ☐ Sometimes		
Weather conditions		☐ Not affected		
	Weather	☐ Fine ☐ Raining ☐ Snowing	Others [
	Temperature	☐ Hot ☐ Warm ☐ Cool ☐	Cold Humid °F	
Engine conditions		Cold During warm-up Engine speed 0 2,000	After warm-up 4,000 6,000 8,000 rpm	
Road conditions		☐ In town ☐ In suburbs ☐ Hig	hway	
Driving conditions		Not affected At starting		
Malfunction indicator lamp		0 10 20 ☐ Turned on ☐ Not turned on	30 40 50 60 MPH	
	· · · · · · · · · · · · · · · · · · ·			

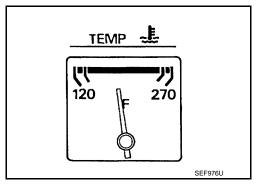
MTBL0017

Work Procedure

1. INSPECTION START

- 1. Check service records for any recent repairs that may indicate a related malfunction, or a current need for scheduled maintenance.
- 2. Open engine hood and check the following:
- Harness connectors for improper connections
- Wiring harness for improper connections, pinches and cut
- Vacuum hoses for splits, kinks and improper connections
- Hoses and ducts for leaks
- Air cleaner clogging
- Gasket
- 3. Confirm that electrical or mechanical loads are not applied.
- Headlamp switch is OFF.
- Air conditioner switch is OFF.
- Rear window defogger switch is OFF.
- Steering wheel is in the straight-ahead position, etc.
- Start engine and warm it up until engine coolant temperature indicator points the middle of gauge. Ensure engine stays below 1,000 rpm.

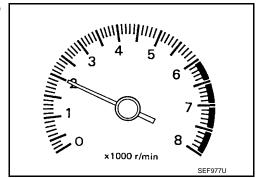




- 5. Run engine at about 2,000 rpm for about 2 minutes under no load.
- 6. Make sure that no DTC is displayed with CONSULT or GST.

Is any DTC detected?

YES >> GO TO 2. NO >> GO TO 3.



2.repair or replace

Repair or replace components as necessary according to corresponding Diagnostic Procedure.

>> GO TO 3.

3. CHECK TARGET IDLE SPEED

1. Run engine at about 2,000 rpm for about 2 minutes under no load.

EC

Α

D

Е

_

G

Н

K

M

N

0

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

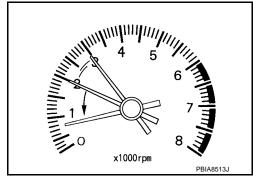
2. Rev engine (2,000 to 3,000 rpm) two or three times under no load, then run engine at idle speed for about 1 minute.

3. Check idle speed.

For procedure, refer to <u>EC-572</u>, "Inspection". For specification, refer to EC-579, "Idle Speed".

Is the inspection result normal?

YES >> GO TO 10. NO >> GO TO 4.



4. PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

- Stop engine.
- Perform <u>EC-156</u>, "Work Procedure".

>> GO TO 5.

5.PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Perform EC-157, "Work Procedure".

>> GO TO 6.

6. PERFORM IDLE AIR VOLUME LEARNING

Perform EC-158, "Work Procedure".

Is Idle Air Volume Learning carried out successfully?

YES >> GO TO 7.

NO >> Follow the instruction of Idle Air Volume Learning. Then GO TO 4.

7. CHECK TARGET IDLE SPEED AGAIN

- 1. Start engine and warm it up to normal operating temperature.
- 2. Check idle speed.

For procedure, refer to EC-572, "Inspection".

For specification, refer to EC-579, "Idle Speed".

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 8.

8.DETECT MALFUNCTIONING PART

Check the Following.

- Check camshaft position sensor (PHASE) and circuit. Refer to EC-342, "DTC Logic".
- Check crankshaft position sensor (POS) and circuit. Refer to EC-339, "DTC Logic".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace. Then GO TO 4

9. CHECK ECM FUNCTION

- 1. Substitute another known-good ECM to check ECM function. (ECM may be the cause of an incident, but this is a rare case.)
- 2. Perform initialization of NVIS (NATS) system and registration of all NVIS (NATS) ignition key IDs. Refer to SEC-47, "ECM: Work Procedure".

>> GO TO 4.

10.CHECK IGNITION TIMING

1. Run engine at idle.

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

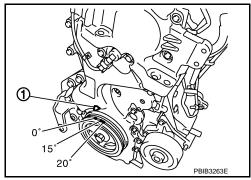
Check ignition timing with a timing light. For procedure, refer to EC-573, "Inspection" For specification, refer to EC-579, "Ignition Timing".

1 : Timing indicator

Is the inspection result normal?

YES >> INSPECTION END.

NO >> GO TO 11.



11. PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

- Stop engine.
- 2. Perform EC-156, "Work Procedure".

>> GO TO 12.

12. PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Perform EC-157, "Work Procedure".

>> GO TO 13.

13. PERFORM IDLE AIR VOLUME LEARNING

Perform EC-158, "Work Procedure".

Is Idle Air Volume Learning carried out successfully?

YES >> GO TO 14.

NO >> Follow the instruction of Idle Air Volume Learning. Then GO TO 4.

14. CHECK TARGET IDLE SPEED AGAIN

- Start engine and warm it up to normal operating temperature.
- 2. Check idle speed.

For procedure, refer to EC-572, "Inspection".

For specification, refer to EC-579, "Idle Speed".

Is the inspection result normal?

YES >> GO TO 15.

NO >> GO TO 17.

15. CHECK IGNITION TIMING AGAIN

Run engine at idle.

Check ignition timing with a timing light.

For procedure, refer to EC-573, "Inspection".

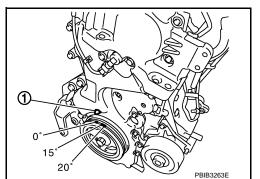
For specification, refer to EC-579, "Ignition Timing".

1 : Timing indicator

Is the inspection result normal?

YES >> INSPECTION END.

NO >> GO TO 16.



16. CHECK TIMING CHAIN INSTALLATION

Check timing chain installation. Refer to EM-75, "Exploded View".

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair the timing chain installation. Then GO TO 4.

EC-151 Revision: 2014 October

EC

Α

D

Е

M

N

2015 JUKE

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

17. DETECT MALFUNCTIONING PART

Check the following.

- Check camshaft position sensor (PHASE) and circuit. Refer to EC-342, "DTC Logic".
- Check crankshaft position sensor (POS) and circuit. Refer to <u>EC-339</u>, "<u>DTC Logic</u>".

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace. Then GO TO 4

18. CHECK ECM FUNCTION

- 1. Substitute another known-good ECM to check ECM function. (ECM may be the cause of an incident, but this is a rare case.)
- 2. Perform initialization of NVIS (NATS) system and registration of all NVIS (NATS) ignition key IDs. Refer to SEC-47, "ECM: Work Procedure".

>> GO TO 4.

ADDITIONAL SERVICE WHEN REPLACING ECM

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

ADDITIONAL SERVICE WHEN REPLACING ECM

Description INFOID:0000000011461447

When replacing ECM, the following procedure must be performed. (For details, refer to EC-153, "Work Procedure".)

EC

Α

PROGRAMMING OPERATION

NOTE:

After replacing with a blank ECM, programming is required to write ECM information. Be sure to follow the procedure to perform the programming.

> D INFOID:0000000011461448

Work Procedure

SAVE ECM DATA

(P)With CONSULT

- Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.
- Turn ignition switch ON.
- 4. Select "SAVING DATA FOR REPLC CPU" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Follow the instruction of CONSULT display.

NOTE:

- Necessary data in ECM is copied and saved to CONSULT.
- Go to Step 2 regardless of with or without success in saving data.

Н

Е

>> GO TO 2.

2.CHECK ECM PART NUMBER

Check ECM part number to see whether it is blank ECM or not.

NOTE:

- Part number of blank ECM is 23703 xxxxx.
- Check part number when ordering ECM or the one included in the label on the container box.

Is the ECM a blank ECM?

YES >> GO TO 3. NO >> GO TO 5.

K

3.save ecm part number

Read out the part number from the old ECM and save the number, following the programming instructions. Refer to "CONSULT Operation Manual".

NOTE:

- The ECM part number is saved in CONSULT.
- Even when ECM part number is not saved in CONSULT, go to 4.

>> GO TO 4.

4.PERFORM ECM PROGRAMMING

After replacing ECM, perform the ECM programming. Refer to "CONSULT Operation Manual".

NOTE:

- Refer to <u>EC-578</u>, "Removal and Installation" for replacement of ECM.
- During programming, maintain the following conditions:
- Ignition switch: ON
- Electric load: OFF
- Brake pedal: Not depressed
- Battery voltage: 12 13.5 V (Be sure to check the value of battery voltage by selecting "BATTERY VOLT" in "Data monitor" of CONSULT.)

>> GO TO 6.

5.REPLACE ECM

EC-153 Revision: 2014 October 2015 JUKE

N

ADDITIONAL SERVICE WHEN REPLACING ECM

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

Replace ECM. Refer to EC-578, "Removal and Installation".

>> GO TO 6.

6. PERFORM INITIALIZATION OF NVIS (NATS) SYSTEM AND REGISTRATION OF ALL NVIS (NATS) IGNITION KEY IDS

Refer to SEC-47, "ECM: Work Procedure".

>> GO TO 7.

7. PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

Refer to EC-156, "Work Procedure".

>> GO TO 8.

8. PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Refer to EC-157, "Work Procedure".

>> GO TO 9.

9. PERFORM IDLE AIR VOLUME LEARNING

Refer to EC-158, "Work Procedure".

>> GO TO 10.

10. PERFORM G SENSOR CALIBRATION

Refer to EC-160, "Work Procedure".

>> END

VIN REGISTRATION

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

VIN REGISTRATION

Description INFOID:0000000011461449

VIN Registration is an operation to registering VIN in ECM. It must be performed each time ECM is replaced.

Accurate VIN which is registered in ECM may be required for Inspection & Maintenance (I/M).

Work Procedure INFOID:0000000011461450

1. CHECK VIN

Check the VIN of the vehicle and note it. Refer to GI-35, "Information About Identification or Model Code".

>> GO TO 2.

2. PERFORM VIN REGISTRATION

With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- Select "VIN REGISTRATION" in "WORK SUPPORT" mode of "ENGINE".
- Follow the instruction of CONSULT display.

>> END

EC-155 Revision: 2014 October

EC

Α

D

Е

F

Н

K

M

L

Ν

Р

2015 JUKE

ACCELERATOR PEDAL RELEASED POSITION LEARNING

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

ACCELERATOR PEDAL RELEASED POSITION LEARNING

Description INFOID:0000000011461451

Accelerator Pedal Released Position Learning is a function of ECM to learn the fully released position of the accelerator pedal by monitoring the accelerator pedal position sensor output signal. It must be performed each time harness connector of accelerator pedal position sensor or ECM is disconnected.

Work Procedure

1.START

- 1. Make sure that accelerator pedal is fully released.
- 2. Turn ignition switch ON and wait at least 2 seconds.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON and wait at least 2 seconds.
- 5. Turn ignition switch OFF and wait at least 10 seconds.

>> END

THROTTLE VALVE CLOSED POSITION LEARNING

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

THROTTLE VALVE CLOSED POSITION LEARNING

Description INFOID:0000000011461453

Throttle Valve Closed Position Learning is a function of ECM to learn the fully closed position of the throttle valve by monitoring the throttle position sensor output signal. It must be performed each time the harness connector of the electric throttle control actuator or ECM is disconnected or electric throttle control actuator inside is cleaned.

Work Procedure INFOID:0000000011461454

1.START

(P) With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "CLSD THL POS LEARN" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Follow the instructions on the CONSULT display.
- Turn ignition switch OFF and wait at least 10 seconds. Check that throttle valve moves during the above 10 seconds by confirming the operating sound.

®Without CONSULT

Start the engine.

NOTE:

Engine coolant temperature is 25°C (77°F) or less before engine starts.

2. Warm up the engine.

NOTE:

Raise engine coolant temperature until it reaches 65°C (149°F) or more.

3. Turn ignition switch OFF and wait at least 10 seconds. Check that throttle valve moves during the above 10 seconds by confirming the operating sound.

>> END

EC

Α

D

Е

F

Н

K

L

Ν

IDLE AIR VOLUME LEARNING

Description INFOID:000000011461451

Idle Air Volume Learning is a function of ECM to learn the idle air volume that keeps each engine idle speed within the specific range. It must be performed under any of the following conditions:

- Each time electric throttle control actuator or ECM is replaced.
- Idle speed or ignition timing is out of specification.

Work Procedure

1.PRECONDITIONING

Make sure that all of the following conditions are satisfied.

Learning will be cancelled if any of the following conditions are missed for even a moment.

- Battery voltage: More than 12.9 V (At idle)
- Engine coolant temperature: 70 100°C (158 212°F)
- Selector lever : P or N (CVT), Neutral (M/T)
- Electric load switch: OFF

(Air conditioner, headlamp, rear window defogger)

On vehicles equipped with daytime running light systems, set lighting switch to the 1st position to light only small lamps.

- Steering wheel: Neutral (Straight-ahead position)
- · Vehicle speed: Stopped
- Transmission: Warmed-up
- CVT models
- With CONSULT: Drive vehicle until "ATF TENP SEN" in "DATA MONITOR" mode of "CVT" system indicates less than 0.9 V.
- NWithout CONSULT: Drive vehicle for 10 minutes.
- M/T models
- Drive vehicle for 10 minutes.

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 3.

2.IDLE AIR VOLUME LEARNING

(P)With CONSULT

- 1. Perform Accelerator Pedal Released Position Learning. Refer to <u>EC-156</u>, "Work Procedure".
- 2. Perform Throttle Valve Closed Position Learning. Refer to EC-157, "Work Procedure".
- 3. Start engine and warm it up to normal operating temperature.
- Select "IDLE AIR VOL LEARN" in "WORK SUPPORT" mode of "ENGINE".
- 5. Touch "START" and wait 20 seconds.

Is "CMPLT" displayed on CONSULT screen?

YES >> GO TO 4. NO >> GO TO 5.

3. IDLE AIR VOLUME LEARNING

Without CONSULT

NOTE:

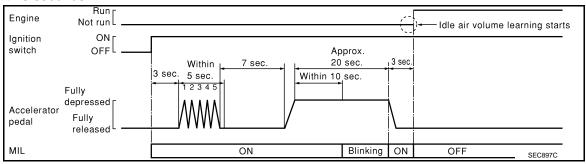
- It is better to count the time accurately with a clock.
- It is impossible to switch the diagnostic mode when an accelerator pedal position sensor circuit has a malfunction.
- 1. Perform Accelerator Pedal Released Position Learning. Refer to EC-156, "Work Procedure".
- 2. Perform Throttle Valve Closed Position Learning. Refer to EC-157, "Work Procedure".
- 3. Start engine and warm it up to normal operating temperature.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Confirm that accelerator pedal is fully released, turn ignition switch ON and wait 3 seconds.
- 6. Repeat the following procedure quickly five times within 5 seconds.
- Fully depress the accelerator pedal.
- Fully release the accelerator pedal.

IDLE AIR VOLUME LEARNING

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

- 7. Wait 7 seconds, fully depress the accelerator pedal and keep it for approx. 20 seconds until the MIL stops blinking and turned ON.
- 8. Fully release the accelerator pedal within 3 seconds after the MIL turned ON.
- Start engine and let it idle.
- 10. Wait 20 seconds.



>> GO TO 4

4. CHECK IDLE SPEED AND IGNITION TIMING

Rev up the engine two or three times and make sure that idle speed and ignition timing are within the specifications. For specification, refer to <u>EC-579</u>, "Idle <u>Speed"</u> and <u>EC-579</u>, "Ignition <u>Timing"</u>.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check the following

- Check that throttle valve is fully closed.
- Check PCV valve operation.
- Check that downstream of throttle valve is free from air leakage.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace malfunctioning part.

6.DETECT MALFUNCTIONING PART

Engine component parts and their installation condition are questionable. Check and eliminate the cause of the incident.

It is useful to perform "TROUBLE DIAGNOSIS - SPECIFICATION VALUE". Refer to <u>EC-176</u>, "<u>Description</u>". If any of the following conditions occur after the engine has started, eliminate the cause of the incident and perform Idle Air Volume Learning all over again:

- Engine stalls.
- · Erroneous idle.

>> INSPECTION END

EC

Α

C

D

Е

F

Н

K

L

M

N

0

G SENSOR CALIBRATION

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

G SENSOR CALIBRATION

Description INFOID:0000000011461457

ECM stores calibration data (inherent characteristic value) of G sensor to provide accurate control. Therefore, it is required to perform calibration of G sensor after the following work is performed.

- · Removal/installation or replacement of G sensor
- Replacement of ECM

Work Procedure

1. PREPARATION BEFORE CALIBRATION PROCEDURE

- 1. Park the vehicle on a level surface.
- 2. Adjust air pressure of all tires to the specified pressure. WT-43, "Tire Air Pressure".

>> GO TO 2.

2.PERFORM CALIBRATION

(P)With CONSULT

1. Turn ignition switch ON.

CAUTION:

Never start engine.

- 2. Select "Work Support" mode in "ENGINE.
- 3. Select "G SENSOR CALIBRATION".
- 4. Touch "Start".

CAUTION:

Never swing the vehicle during "G sensor calibration".

Is "COMPLETED" displayed?

YES >> END

NO >> Perform steps 1 and 2 again.

MIXTURE RATIO SELF-LEARNING VALUE CLEAR

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

MIXTURE RATIO SELF-LEARNING VALUE CLEAR

Description INFOID:000000011461459

This describes how to erase the mixture ratio self-learning value. For the actual procedure, follow the instructions in "Diagnosis Procedure".

INFOID:0000000011461460

Work Procedure

1.START

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Select "SELF-LEARNING CONT" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 3. Clear mixture ratio self-learning value by touching "CLEAR".

- Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF.
- 3. Disconnect mass air flow sensor harness connector.
- 4. Restart engine and let it idle for at least 5 seconds.
- 5. Stop engine and reconnect mass air flow sensor harness connector.
- 6. Select Service \$03 with GST. Make sure DTC P0102 is detected.
- Select Service \$04 with GST to erase the DTC P0102.

>> END

D

Е

F

Α

EC

G

Н

K

M

Ν

O

FUEL PRESSURE

Work Procedure

FUEL PRESSURE RELEASE

1. FUEL PRESSURE RELEASE

(P)With CONSULT

- 1. Turn ignition switch ON.
- Perform "FUEL PRESSURE RELEASE" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Start engine.
- 4. After engine stalls, crank it two or three times to release all fuel pressure.
- Turn ignition switch OFF.

Without CONSULT

- 1. Remove fuel pump fuse located in IPDM E/R.
- 2. Start engine.
- 3. After engine stalls, crank it two or three times to release all fuel pressure.
- Turn ignition switch OFF.
- 5. Reinstall fuel pump fuse after servicing fuel system.

>> END

FUEL PRESSURE CHECK

CAUTION:

- Before disconnecting fuel line, release fuel pressure from fuel line to eliminate danger.
- The fuel hose connection method used when taking fuel pressure check must not be used for other purposes.
- Be careful not to scratch or put debris around connection area when servicing, so that the quick connector maintains sealability with O-rings inside.
- Do not perform fuel pressure check with electrical systems operating (i.e. lights, rear defogger, A/C, etc.) Fuel pressure gauge may indicate false readings due to varying engine load and changes in manifold vacuum.

NOTE:

Prepare pans or saucers under the disconnected fuel line because the fuel may spill out. The fuel pressure cannot be completely released because F15 models do not have fuel return system.

1.FUEL PRESSURE CHECK

- Release fuel pressure to zero.
- Prepare fuel hose for fuel pressure check (B) and fuel tube adapter [SST: KV10120000] (D), then connect fuel pressure gauge (A).

: To quick connector

: To high pressure fuel pump.

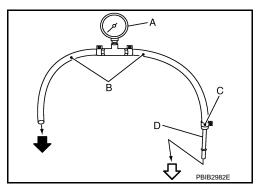
C : Clamp

CAUTION:

- Use suitable fuel hose for fuel pressure check (genuine NISSAN fuel hose without quick connector).
- To avoid unnecessary force or tension to hose, use moderately long fuel hose for fuel pressure check.
- . Do not use the fuel hose for checking fuel pressure with damage or cracks on it.
- Use Pressure Gauge to check fuel pressure.
- 3. Remove fuel hose.

CAUTION:

Do not twist or kink fuel hose because it is plastic hose.



FUEL PRESSURE

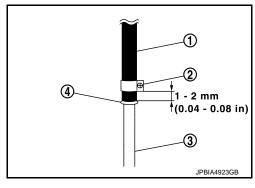
< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

Connect fuel hose for fuel pressure check (1) to high pressure fuel pump with clamp (2) as shown in the figure.

CAUTION:

- Wipe off oil or dirt from hose insertion part using cloth moistened with gasoline.
- Apply proper amount of gasoline between top of the high pressure fuel pump (3) and spool (4).
- Insert fuel hose for fuel pressure check until it touches the spool on high pressure fuel pump.
- Use NISSAN genuine hose clamp (part number: 16439 N4710 or 16439 40U00).
- · When reconnecting fuel line, always use new clamps.
- Use a torque driver to tighten clamps.

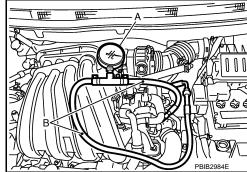


Tightening torque: 1 - 1.5 N·m (0.1 - 0.15 kg-m, 9 - 13 in-lb)

- Install hose clamp to the position within 1 2 mm (0.04 0.08 in).
- Make sure that clamp screw does not contact adjacent parts.
- After connecting fuel hose for fuel pressure check, pull the hose with a force of approximately 98 N (10 kg, 22 lb) to confirm fuel tube does not come off.
- 5. Connect fuel tube adapter to quick connector.
 - A : Fuel pressure gauge
 - B : Fuel hose for fuel pressure check
- 6. Turn ignition switch ON and check for fuel leakage.
- 7. Start engine and check for fuel leakage.
- 8. Read the indication of fuel pressure gauge.

CAUTION:

- Do not perform fuel pressure check with system operating. Fuel pressure gauge may indicate false readings.
- During fuel pressure check, confirm for fuel leakage from fuel connection every 3 minutes.



At idling : Approximately 500 kPa (5.1 kg/cm², 73 psi

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK FUEL HOSES

- Check the following.
- Fuel hoses for clogging
- Fuel filter for clogging
- Low pressure fuel pump
- Fuel pressure regulator for clogging

Is the inspection result normal?

YES >> Replace fuel pressure regulator.

NO >> Repair or replace error-detected parts.

Α

EC

D

Е

F

Н

K

N

HOW TO SET SRT CODE

Description INFOID:0000000011461462

OUTLINE

In order to set all SRTs, the self-diagnoses as in the "SRT ITEM" table must have been performed at least once. Each diagnosis may require actual driving for a long period of time under various conditions.

SRT ITEM

The table below shows required self-diagnostic items to set the SRT to "CMPLT".

SRT item*1 (CONSULT indication)	Performance Priority*2	Required self-diagnostic items to set the SRT to "CMPLT"	Corresponding DTC No.
CATALYST	1	Three way catalyst function	P0420
EVAP SYSTEM	1	EVAP control system purge flow monitoring	P0441
	1	EVAP control system	P0456
HO2S	1	Air fuel ratio (A/F) sensor 1	P014C,P014D, P015A, P015B
		Heated oxygen sensor 2	P0137
		Heated oxygen sensor 2	P0138
		Heated oxygen sensor 2	P0139
EGR/VVT SYSTEM	2	Intake value timing control function	P0011

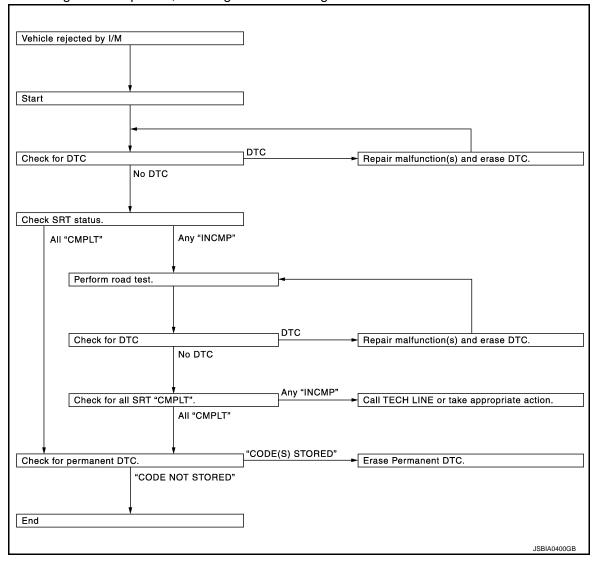
^{*1:} Though displayed on the CONSULT screen, "HO2S HTR" is not SRT item.

SRT SERVICE PROCEDURE

^{*2:} If completion of several SRTs is required, perform driving patterns (DTC confirmation procedure), one by one based on the priority for models with CONSULT.

HOW TO SET SRT CODE

If a vehicle has failed the state emissions inspection due to one or more SRT items indicating "INCMP", review the flowchart diagnostic sequence, referring to the following flowchart.



SRT Set Driving Pattern

CAUTION:

EC

Α

C

D

Е

Н

G

Н

K

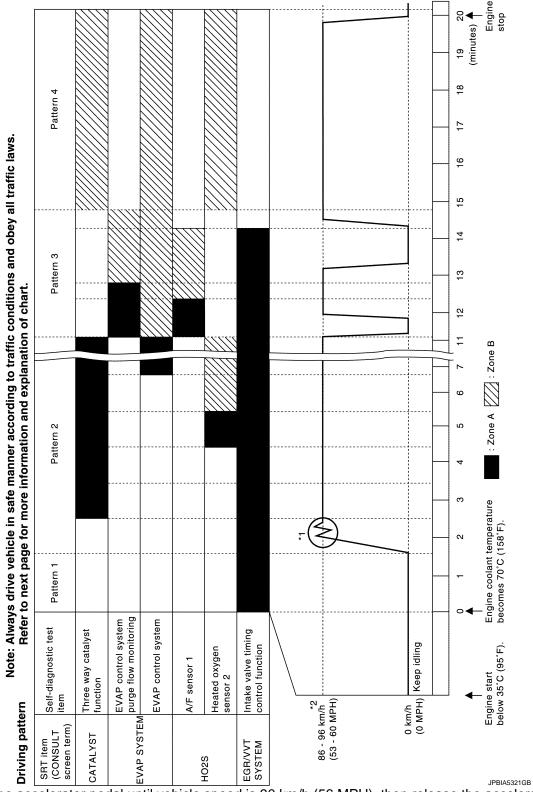
INFOID:0000000011461463

Ν

M

0

Always drive the vehicle in safe manner according to traffic conditions and obey all traffic laws.



^{*1:} Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH), then release the accelerator pedal and keep it released for more than 10 seconds. Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH) again.

^{*2:} Checking the vehicle speed with GST is advised.

[•] The time required for each diagnosis varies with road surface conditions, weather, altitude, individual driving

^{• &}quot;Zone A" is the fastest time where required for the diagnosis under normal conditions*. If the diagnosis is not completed within "Zone A", the diagnosis can still be performed within "Zone B".

HOW TO SET SRT CODE

< BASIC INSPECTION >	[INIK FOR INISINIO KS INIODELS]
*: Normal conditions	
- Sea level - Flat road	<i>y</i>
- Ambient air temperature: 20 – 30°C (68 – 86°F)	_
NOTE: Diagnosis is performed as quickly as possible under normal conditions	s. However, under other conditions.
diagnosis may also be performed. [For example: ambient air temperature	
Work Procedure	INFOID:000000011461464
1.CHECK DTC	
Check DTC.	
Is any DTC detected?	
YES >> Repair malfunction(s) and erase DTC. Refer to EC-113, "DTG NO >> GO TO 2.	
2. CHECK SRT STATUS	E
With CONSULT Select "SRT STATUS" in "DTC & SRT CONFIRMATION" mode with CON	SULT.
Without CONSULT	
Perform "SRT status" mode with <u>EC-80, "On Board Diagnosis Function"</u> .	
Select Service \$01 with GST.	
Is SRT code(s) set?	
YES >> GO TO 11.	ŀ
NO-1 >> With CONSULT: GO TO 3. NO-2 >> Without CONSULT: GO TO 4.	
3.DTC CONFIRMATION PROCEDURE	
Select "SRT WORK SUPPORT" in "DTC & SRT CONFIRMATION" m	node with CONSULT.
2. For SRT(s) that is not set, perform the corresponding "DTC CONFIRI	
the "Performance Priority" in the "SRT ITEM" table. Refer to <u>EC-164.</u> 3. Check DTC.	"Description".
Is any DTC detected?	
YES >> Repair malfunction(s) and erase DTC. Refer to EC-113, "DTC	C Index".
NO >> GO TO 10.	
4.PERFORM ROAD TEST	I
 Check the "Performance Priority" in the "SRT ITEM" table. Refer to <u>EC-</u> Perform the most efficient SRT set driving pattern to set the SRT property. 	
ing Pattern".	
In order to set all SRTs, the SRT set driving pattern must be performed	at least once.
>> GO TO 5.	
5. PATTERN 1	1
 1. Check the vehicle condition; Engine coolant temperature is -10 to 35°C (14 to 95°F). 	
- Fuel tank temperature is more than 0°C (32°F).	
 Start the engine. Keep engine idling until the engine coolant temperature is greater that 	an 70°C (158°F)
NOTF:	III 70°C (136 F)

ECM terminal voltage is follows;

- Engine coolant temperature
- -10 to 35°C (14 to 95°F): 3.0 4.3 V
- 70°(158°F): Less than 4.1 V
- Fuel tank temperature: Less than 1.4 V

Refer to EC-94, "Reference Value".

>> GO TO 6.

6. PATTERN 2

- 1. Drive the vehicle. And depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH), then release the accelerator pedal and keep it released for more than 10 seconds.
- 2. Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH) again

NOTE:

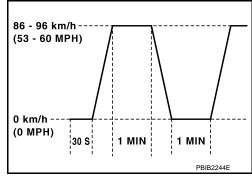
- Checking the vehicle speed with GST is advised.
- When steady-state driving is performed again even after it is interrupted, each diagnosis can be conducted.
 In this case, the time required for diagnosis may be extended.

>> GO TO 7.

7. PATTERN 3

- Operate vehicle following the driving pattern shown in the figure.
- Release the accelerator pedal during deceleration of vehicle speed from 90 km/h (56 MPH) to 0 km/h (0 MPH).

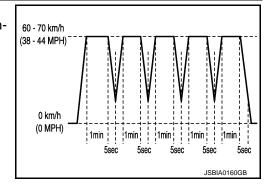
>> GO TO 8.



8. PATTERN 4

- Operate vehicle following the driving pattern shown in the figure.
- Drive the vehicle in a proper gear at 60 km/h (38 MPH) and maintain the speed.
- Release the accelerator pedal fully at least 5 seconds.
- Repeat the above two steps at least 5 times.

>> GO TO 9.



9. PATTERN 5

- The accelerator pedal must be held very steady during steady-state driving.
- If the accelerator pedal is moved, the test must be conducted again.

>> GO TO 10.

10. CHECK SRT STATUS

With CONSULT

Select "SRT STATUS" in "DTC & SRT CONFIRMATION" mode with CONSULT.

Perform "SRT status" mode with EC-80. "On Board Diagnosis Function".

Select Service \$01 with GST.

Is SRT(s) set?

YES >> GO TO 11.

NO >> Call TECH LINE or take appropriate action.

11. CHECK PERMANENT DTC

HOW TO SET SRT CODE

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

-

Permanent DTC cannot be checked with a tool other than CONSULT or GST.

(P)With CONSULT

Select "SRT STATUS" in "DTC & SRT CONFIRMATION" mode with CONSULT.

With GST

Select Service \$0A with GST.

Is permanent DTC(s) detected?

YES >> Proceed to EC-176, "Description".

NO >> END

EC

Α

D

Е

F

G

Н

J

Κ

L

M

Ν

0

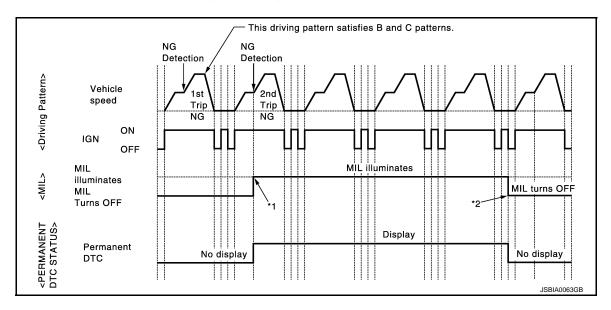
HOW TO ERASE PERMANENT DTC

Description INFOID:000000011461465

OUTLINE

When a DTC is stored in ECM

When a DTC is stored in ECM and MIL is ON, a permanent DTC is erased with MIL shutoff if the same malfunction is not detected after performing the driving pattern for MIL shutoff three times in a raw.



^{*1:} When the same malfunction is detected in two consecutive trips, MIL will illuminate.

*2: MIL will turn off after vehicle is driven 3 times (driving pattern B) without any malfunctions.

When a DTC is not stored in ECM

The erasing method depends on a permanent DTC stored in ECM. Refer to the following table.

x: Applicable —: Not applicable

Group [*]	Perform "DTC CONFIRMATION PROCE- DURE" for applicable DTCs.	Driving pattern		Reference
		В	D	Kelefelice
A	×	_	_	EC-171
В	_	×	×	EC-173

^{*:} For group, refer to EC-113, "DTC Index".

PERMANENT DTC ITEM

For permanent DTC items, MIL turns ON. Refer to EC-113. "DTC Index".

Α

EC

D

Е

M

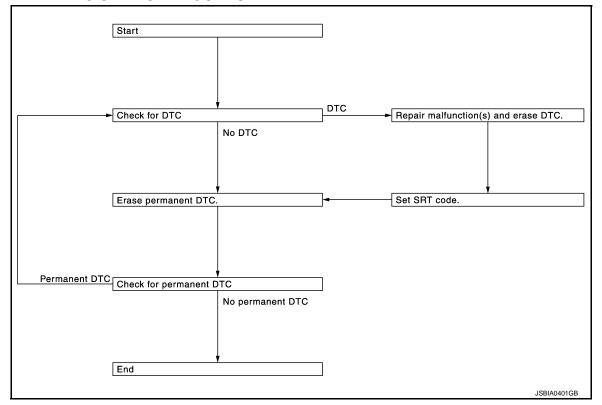
Ν

0

Р

INFOID:0000000011461466

PERMANENT DTC SERVICE PROCEDURE



Work Procedure (Group A)

Repair applicable parts indicated by DTC. DTC CONFIRMATION PROCEDURE for applicable DTC is completed. NG NG Detection Detection <Driving Pattern> Vehicle speed 1st 2nd Trip Trip NG NG ON IGN OFF MIL MIL illuminates illuminates <MIL> MIL turns OFF MIL Turns OFF Display <DTC> DTC No display No display <PERMANENT DTC STATUS> Display Permanent No display No display DTC JSBIA0064GB *1: When the same malfunction is detected in two consecutive trips, MIL will illuminate.

1. CHECK DTC

Check DTC.

Is any DTC detected?

YES >> Repair malfunction(s) and erase DTC. Refer to <u>EC-80, "On Board Diagnosis Function", EC-83, "CONSULT Function".</u>

NO >> GO TO 2.

2. CHECK PERMANENT DTC

(P)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Select "PERMANENT DTC STATUS" mode with CONSULT.

With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- 5. Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 3.

NO >> END

3.perform dtc confirmation procedure

Perform "DTC CONFIRMATION PROCEDURE" for DTCs which are the same as permanent DTCs stored in ECM. Refer to EC-113, "DTC Index".

>> GO TO 4.

4. CHECK PERMANENT DTC

(P)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 5. Select "PERMANENT DTC STATUS" mode with CONSULT.

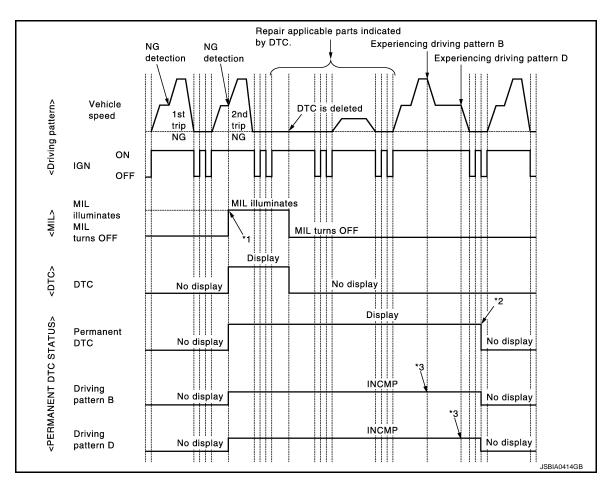
With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 1. NO >> END Work Procedure (Group B)

INFOID:0000000011461467



- *1: When the same malfunction is detected in two consecutive trips, MIL will illuminate.
- *2: After experiencing driving pattern B and D, permanent DTC is erased.
- Indication does not change unless the ignition switch is turned from ON to OFF twice even after experiencing driving pattern B or D.

NOTE:

Drive the vehicle according to only driving patterns indicating "INCMP" in driving patterns B and D on the "PERMANENT DTC STATUS" screen.

1.CHECK DTC

Check DTC.

Is any DTC detected?

YES >> Repair malfunction(s) and erase DTC. Refer to <u>EC-80. "On Board Diagnosis Function"</u>, <u>EC-83. "CONSULT Function"</u>.

NO >> GO TO 2.

2.CHECK PERMANENT DTC

(E)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Select "PERMANENT DTC STATUS" mode with CONSULT.

With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

EC

Α

С

D

Е

F

G

Н

1

J

K

M

. .

C

HOW TO ERASE PERMANENT DTC

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

- 4. Turn ignition switch ON.
- Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 3.

NO >> END

3.drive driving pattern b

CAUTION:

- · Always drive at a safe speed.
- · Never erase self-diagnosis results.
- If self-diagnosis results are erased during the trip of driving pattern B or D, the counter of driving pattern B and D is reset.

(II) With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Use "PERMANENT DTC WORK SUPPORT" mode with CONSULT to drive the vehicle according to driving pattern B. Refer to <u>EC-83</u>. "CONSULT Function", <u>EC-77</u>. "DIAGNOSIS <u>DESCRIPTION</u>: <u>Driving Pattern</u>".

@With GST

- 1. Start engine and warm it up to normal operating temperature.
- 2. Drive the vehicle according to driving pattern B. Refer to <u>EC-77</u>, "<u>DIAGNOSIS DESCRIPTION</u>: <u>Driving Pattern</u>".

>> GO TO 4.

4. CHECK PERMANENT DTC

(E)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select "PERMANENT DTC STATUS" mode with CONSULT.

With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- 5. Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 5.

NO >> END

${f 5.}$ DRIVE DRIVING PATTERN D

CAUTION:

- Always drive at a safe speed.
- Never erase self-diagnosis results.
- If self-diagnosis results are erased during the trip of driving pattern B or D, the counter of driving pattern B and D is reset.

Drive the vehicle according to driving pattern D. Refer to <u>EC-77, "DIAGNOSIS DESCRIPTION: Driving Pattern".</u>

>> GO TO 6.

6. CHECK PERMANENT DTC

(E)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.

HOW TO ERASE PERMANENT DTC

< BASIC INSPECTION >

[MR FOR NISMO RS MODELS]

5. Select "PERMANENT DTC STATUS" mode with CONSULT.

With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 1.

NO >> END

EC

Α

D

Е

F

G

Н

Κ

L

M

Ν

0

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

DTC/CIRCUIT DIAGNOSIS

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

Description INFOID:000000011461468

The specification (SP) value indicates the tolerance of the value that is displayed in "SPEC" of "DATA MONITOR" mode of CONSULT during normal operation of the Engine Control System. When the value in "SPEC" of "DATA MONITOR" mode is within the SP value, the Engine Control System is confirmed OK. When the value in "SPEC" of "DATA MONITOR" mode is NOT within the SP value, the Engine Control System may have one or more malfunctions.

The SP value is used to detect malfunctions that may affect the Engine Control System, but will not light the MIL.

The SP value will be displayed for the following three items:

- B/FUEL SCHDL (The fuel injection pulse width programmed into ECM prior to any learned on board correction)
- A/F ALPHA-B1 (The mean value of air-fuel ratio feedback correction factor per cycle)
- MAS A/F SE-B1 (The signal voltage of the mass air flow sensor)

Component Function Check

INFOID:0000000011461469

1.START

Make sure that all of the following conditions are satisfied.

- Vehicle driven distance: More than 5,000 km (3,107 miles)
- Barometric pressure: 98.3 104.3 kPa (1.003 1.064 kg/cm², 14.25 15.12 psi)
- Atmospheric temperature: 20 30°C (68 86°F)
- Engine coolant temperature: 75 95°C (167 203°F)
- Transmission: Warmed-up
- CVT models: After the engine is warmed up to normal operating temperature, drive vehicle until "FLUID TEMP SE" (CVT fluid temperature sensor signal) indicates more than 60°C (140°F).
- M/T models: After the engine is warmed up to normal operating temperature, drive vehicle for 5 minutes.
- Electrical load: Not applied
- Rear window defogger switch, air conditioner switch, lighting switch are OFF. Steering wheel is straight ahead.
- Engine speed: Idle

>> GO TO 2.

2.PERFORM "SPEC" OF "DATA MONITOR" MODE

(P)With CONSULT

NOTE:

Perform "SPEC" in "DATA MONITOR" mode in maximum scale display.

- 1. Perform EC-149, "Work Procedure".
- Select "B/FUEL SCHDL", "A/F ALPHA-B1" and "MAS A/F SE-B1" in "SPEC" of "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Make sure that monitor items are within the SP value.

Is the inspection result normal?

YES >> END

NO >> Proceed to EC-177, "Diagnosis Procedure".

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

< DTC/CIRCUIT DIAGNOSIS >

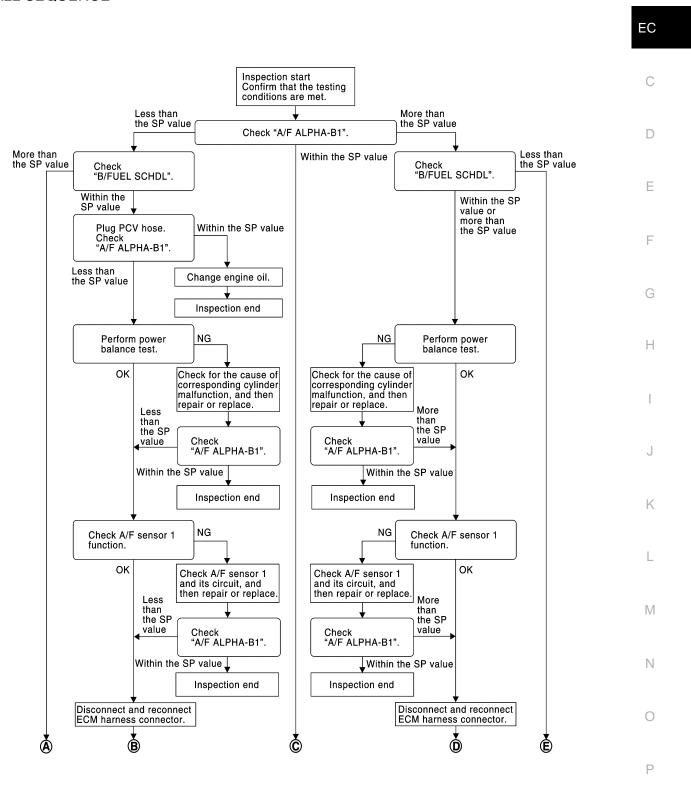
[MR FOR NISMO RS MODELS]

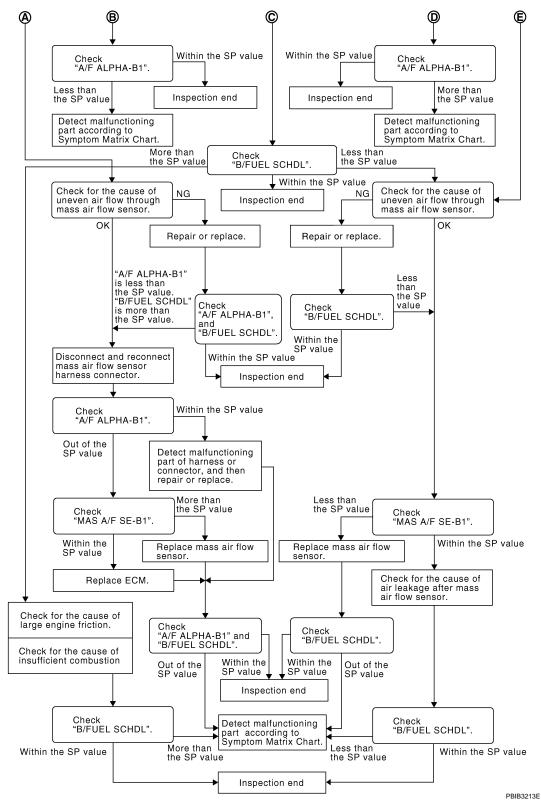
Diagnosis Procedure

OVERALL SEQUENCE

INFOID:0000000011461470

Α





DETAILED PROCEDURE

1.CHECK "A/F ALPHA-B1"

(P)With CONSULT

- Start engine
- Confirm that the testing conditions are met. Refer to <u>EC-176, "Component Function Check"</u>.
- 3. Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NOTE:

Check "A/F ALPHA-B1" for approximately 1 minute because it may fluctuate. It is NG if the indication is out of the SP value even a little.

Is the measurement value within the SP value?

YES >> GO TO 14.

NO-1 >> Less than the SP value: GO TO 2.

NO-2 >> More than the SP value: GO TO 3.

2.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 4.

NO >> More than the SP value: GO TO 16.

3.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 6.

NO-1 >> More than the SP value: GO TO 6.

NO-2 >> Less than the SP value: GO TO 22.

4.CHECK "A/F ALPHA-B1"

- Stop the engine.
- 2. Disconnect PCV hose, and then plug it.
- Start engine. 3.
- Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 5.

NO >> GO TO 6.

5. CHANGE ENGINE OIL

- Stop the engine.
- 2. Change engine oil.

NOTE:

This symptom may occur when a large amount of gasoline is mixed with engine oil because of driving conditions (such as when engine oil temperature does not rise enough since a journey distance is too short during winter). The symptom will not be detected after changing engine oil or changing driving condition.

>> INSPECTION END

6.PERFORM POWER BALANCE TEST

- Perform "POWER BALANCE" in "ACTIVE TEST" mode.
- 2. Make sure that the each cylinder produces a momentary engine speed drop.

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 7.

.DETECT MALFUNCTIONING PART

Check the following.

- Ignition coil and its circuit (Refer to EC-542, "Component Function Check".)
- 2. Fuel injector and its circuit (Refer to EC-529, "Component Function Check".)
- Intake air leakage
- Low compression pressure (Refer to EM-17, "Inspection".)

Is the inspection result normal?

EC-179 Revision: 2014 October 2015 JUKE

EC

D

Е

F

M

Ν

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> Replace fuel injector and then GO TO 8.

NO >> Repair or replace malfunctioning part and then GO TO 8.

8.CHECK "A/F ALPHA-B1"

- 1. Start engine.
- Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> GO TO 9.

9.CHECK A/F SENSOR 1 FUNCTION

Perform all DTC CONFIRMATION PROCEDURE related with A/F sensor 1.

- For DTC P0130, refer to EC-259, "DTC Logic".
- For DTC P0131, refer to EC-263, "DTC Logic".
- For DTC P0132, refer to EC-266, "DTC Logic".
- For DTC P014C, P014D, P015A, P015B, refer to <u>EC-288, "DTC Logic"</u>.

Is any DTC detected?

YES >> GO TO 10.

NO >> GO TO 12.

10.CHECK A/F SENSOR 1 CIRCUIT

Perform DIAGNOSTIC PROCEDURE according to corresponding DTC.

>> GO TO 11.

11.CHECK "A/F ALPHA-B1"

- 1. Start engine.
- Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> GO TO 12.

12. DISCONNECT AND RECONNECT ECM HARNESS CONNECTOR

- Stop the engine.
- Disconnect ECM harness connector.
- 3. Check pin terminal and connector for damage, and then reconnect it.

>> GO TO 13.

13.CHECK "A/F ALPHA-B1"

- Start engine.
- Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Detect malfunctioning part according to EC-564, "Symptom Table".

14.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO-1 >> More than the SP value: GO TO 15.

NO-2 >> Less than the SP value: GO TO 22.

15. DETECT MALFUNCTIONING PART

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

< DTC/CIRCUIT DIAGNOSIS >	[MR FOR NISMO RS MODELS]
1. Check for the cause of large engine friction. Refer to the following.	<u>-</u>
Engine oil level is too highEngine oil viscosity	F
- Belt tension of power steering, alternator, A/C compressor, etc. is exc	essive
Noise from engineNoise from transmission, etc.	E
 Check for the cause of insufficient combustion. Refer to the following 	
- Valve clearance malfunction	
Intake valve timing control function malfunctionCamshaft sprocket installation malfunction, etc.	
>> Repair or replace malfunctioning part, and then GO TO 27.	[
16. CHECK INTAKE SYSTEM	
Check for the cause of uneven air flow through mass air flow sensor. Refe	er to the following.
Crushed air ducts	S .
Malfunctioning seal of air cleaner elementUneven dirt of air cleaner element	
Improper specification of intake air system	F
Is the inspection result normal?	
YES >> GO TO 21.	
NO >> Repair or replace malfunctioning part, and then GO TO 17.	
17.CHECK "A/F ALPHA-B1", AND "B/FUEL SCHDL"	
Select "A/F ALPHA-B1" and "B/FUEL SCHDL" in "SPEC" of "DATA MC each indication is within the SP value.	NITOR" mode, and make sure that
Is the measurement value within the SP value?	
YES >> INSPECTION END NO >> "B/FUEL SCHDL" is more, "A/F ALPHA-B1" is less than the S	
18. DISCONNECT AND RECONNECT MASS AIR FLOW SENSOR HA	RNESS CONNECTOR
1. Stop the engine.	
 Disconnect mass air flow sensor harness connector. Check pin terminal and connector for damage and then reconnect it a 	ngain.
>> GO TO 19.	ŀ
19.CHECK "A/F ALPHA-B1"	
1. Start engine.	L
 Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and methods the SP value. 	nake sure that the indication is within
Is the measurement value within the SP value?	11
YES >> Detect malfunctioning part of mass air flow sensor circuit a Logic". Then GO TO 26.	nd repair it. Refer to <u>EC-234, "DTC</u>
NO >> GO TO 20.	
20.CHECK "MAS A/F SE-B1"	
Select "MAS A/F SE-B1" in "SPEC" of "DATA MONITOR" mode, and make SP value.	e sure that the indication is within the

Is the measurement value within the SP value?

YES >> GO TO 21.

NO >> More than the SP value: Replace mass air flow sensor, and then GO TO 26.

21.REPLACE ECM

- 1. Replace ECM. Refer to EC-578, "Removal and Installation".
- 2. Perform EC-153, "Work Procedure".

>> GO TO 26.

Revision: 2014 October EC-181 2015 JUKE

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

22. CHECK INTAKE SYSTEM

Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.

- · Crushed air ducts
- Malfunctioning seal of air cleaner element
- · Uneven dirt of air cleaner element
- Improper specification of intake air system

Is the inspection result normal?

YES >> GO TO 24.

NO >> Repair or replace malfunctioning part, and then GO TO 23.

23. CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Less than the SP value: GO TO 24.

24.CHECK "MAS A/F SE-B1"

Select "MAS A/F SE-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 25.

NO >> Less than the SP value: Replace mass air flow sensor, and then GO TO 27.

25. CHECK INTAKE SYSTEM

Check for the cause of air leak after the mass air flow sensor. Refer to the following.

- · Disconnection, looseness, and cracks in air duct
- Looseness of oil filler cap
- · Disconnection of oil level gauge
- Open stuck, breakage, hose disconnection, or cracks of PCV valve
- Disconnection or cracks of EVAP purge hose, open stuck of EVAP canister purge volume control solenoid valve
- · Malfunctioning seal of rocker cover gasket
- Disconnection, looseness, or cracks of hoses, such as vacuum hose, connecting to intake air system parts
- Malfunctioning seal of intake air system, etc.

>> GO TO 27.

26. CHECK "A/F ALPHA-B1" AND "B/FUEL SCHDL"

Select "A/F ALPHA-B1" and "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that each indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Detect malfunctioning part according to EC-564. "Symptom Table".

27. CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and then make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Detect malfunctioning part according to EC-564, "Symptom Table".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000011461471

1.CHECK FUSE

Check that the following fuse is not fusing.

Location	Fuse No.	Capacity
IPDM E/R	#43	20 A
	#62	15 A

Is the fuse fusing?

YES >> Replace the fuse after repairing the applicable circuit.

NO >> GO TO 2.

2.CHECK GROUND CONNECTION

Turn ignition switch OFF.

Check ground connection E21 and E38. Refer to GI-47, "Circuit Inspection".

Is the inspection result normal?

>> GO TO 3. YES

NO >> Repair or replace ground connection.

3.CHECK ECM GROUND CIRCUIT

- Disconnect ECM harness connectors.
- Check the continuity between ECM harness connector and ground.

+			
ECM		_	Continuity
Connector	Terminal		
F25	1		
1 23	2		Existed
	123	Ground	
E18	124		
	127		

Is the inspection result normal?

YES >> GO TO 4.

>> Repair or replace error-detected parts. NO

4. CHECK ECM POWER SUPPLY (MAIN)-I

- Reconnect ECM harness connector.
- Turn ignition switch ON.
- Check the voltage between ECM harness connector terminals.

ECM			
Connector	+	_	Voltage
Connector	Terr	minal	
E18	121	127	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 6.

5. CHECK ECM POWER SUPPLY (MAIN)-II

Turn ignition switch OFF and wait at least 10 seconds.

EC-183 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

K

M

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

2. Check the voltage between ECM harness connector terminals as per the following.

	ECM) / h
Connector	+	_	Condition	Voltage (Approx.)
Connector	Terr	ninal		(11 /
E18	121	127	After turning ignition switch OFF, battery voltage will exist for a few seconds	Drop to 0 V

Is the inspection result normal?

YES >> GO TO 9. NO >> GO TO 7.

6.CHECK ECM POWER SUPPLY (MAIN) CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connectors.
- 3. Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		-		
E	СМ	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E18	121	E14	35	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

7.CHECK ECM RELAY CONTROL SIGNAL

Check the voltage between ECM harness connector terminals as per the following.

	ECM			Maltana
Connector	+	ı	Condition	Voltage (Approx.)
Oomicotor	Terr	ninal		, II ,
			Ignition switch ON	0 V
E18	112	127	Turn ignition switch OFF and wait at least 10 seconds.	Battery voltage

Is the inspection result normal?

YES >> Check Intermittent Incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 8.

8.CHECK ECM RELAY CONTROL SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		-		
E	CM	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E18	112	E14	41	Existed

5. Also check harness for short to ground and to power.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the inspection result normal?

>> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".

NO >> Repair or replace error-detected parts.

9. CHECK IGNITION SWITCH SIGNAL

Turn ignition switch ON.

Check the voltage between ECM harness connector terminals.

	ECM			V 1
Connector	+	ı	Condition	Voltage (Approx.)
	Terr	ninal		, , ,
E18	109	127	Ignition switch OFF	0 V
	109	121	Ignition switch ON	Battery voltage

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 10.

10.check ignition switch signal circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Disconnect IPDM E/R harness connector.
- Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		-		
E	CM	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E18	109	E15	62	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

11. CHECK ECM POWER SUPPLY (BACK-UP)

Check the voltage between ECM harness connector terminals.

ECM			
Connector	+	_	Voltage
Connector	Terr	ninal	
E18	106	127	Battery voltage

Is the inspection result normal?

YES >> Check Intermittent Incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 12.

12. CHECK ECM POWER SUPPLY (BACK-UP) CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Disconnect IPDM E/R harness connector.
- Check the continuity between ECM harness connector and IPDM E/R harness connector.

EC

Α

D

Е

F

Н

K

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+		_	
E	СМ	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E18	106	E14	42	Existed

^{5.} Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

U0100 DRIVETRAIN CAN COMMUNICATION (ECM)

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

U0100 DRIVETRAIN CAN COMMUNICATION (ECM)

DTC Description INFOID:0000000011461472

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms		
	DTC (Trouble diagnosis content)	Malfunction type	DTC detecting condition
U0100	COMMUNICATION ERROR (LOST) (Lost communication with ECM/ PCM "A")	NO SUBTYPE INFORMATION	FPCM cannot receive the drivetrain CAN communication signal sent from ECM for Approx. 1 second or more.

POSSIBLE CAUSE

- Drivetrain CAN harness or connectors
- ECM

FAIL-SAFE

Not applicable

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Turn ignition switch ON and wait at least 10 seconds.
- Check "Self Diagnostic Result" of "FPCM".

Is DTC "U0100" detected?

YES >> Proceed to EC-187, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK DRIVETRAIN CAN COMMUNICATION HARNESS AND CONNECTORS

- 1. Turn ignition switch OFF.
- 2. Check installation condition of ECM and FPCM.
- Disconnect ECM harness connector and FPCM harness connector.
- Check the continuity between ECM harness connector and FPCM harness connector.

	+	-		
ECM		FPCM		Continuity
Connector	Terminal	Connector	Terminal	
E18	100	B111	3	Existed
	99	DIII	4	LXISIEU

Also check harness for short.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.perform dtc confirmation procedure again

(P)With CONSULT

- 1. Reconnect all harness connector disconnected.
- Turn ignition switch ON.
- Erase "Self Diagnostic Result" of "FPCM".
- Perform DTC confirmation procedure again. Refer to EC-187, "DTC Description".

Is DTC "U0100" detected again?

EC-187 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

INFOID:0000000011461473

K

N

U0100 DRIVETRAIN CAN COMMUNICATION (ECM)

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 3. NO >> GO TO 4.

3. REPLACE FPCM

- 1. Replace FPCM.
- 2. Perform DTC confirmation procedure again. Refer to EC-187, "DTC Description".

Is DTC "U0100" detected again?

YES >> Replace ECM. Refer to EC-578, "Removal and Installation".

NO >> INSPECTION END

4. CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> INSPECTION END

U0101 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

U0101 CAN COMM CIRCUIT

Description INFOID:0000000011461474

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic INFOID:0000000011461475

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
U0101	LOST COMM (TCM) (Lost communication with TCM)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) with TCM for 2 seconds or more.	CAN communication line between TCM and ECM

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 3 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-189, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

Perform the trouble diagnosis for CAN communication system. Refer to LAN-17, "Trouble Diagnosis Flow

Chart".

EC

Α

D

Е

INFOID:0000000011461476

N

K

U0122 VEHICLE DYNAMICS CONTROL MODULE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

U0122 VEHICLE DYNAMICS CONTROL MODULE

Description INFOID:0000000011461477

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic INFOID:0000000011461478

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
U0122	VDC MDL (Lost communication with vehi- cle dynamics control module)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission related diagnosis) with ABS actuator and electric unit (control unit) for 2 seconds or more.	CAN communication line between ECM and ABS actuator and electric unit (control unit) (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 3 seconds.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-190, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461479

Perform the trouble diagnosis for CAN communication system. Refer to <u>LAN-17</u>, "Trouble <u>Diagnosis Flow Chart"</u>.

U1001 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

D

Е

Н

K

N

Р

2015 JUKE

U1001 CAN COMM CIRCUIT

Description INFOID:0000000011461480

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
U1001	CAN COMM CIRCUIT (CAN communication line)	When ECM is not transmitting or receiving CAN communication signal other than OBD (emission related diagnosis) for 2 seconds or more.	Harness or connectors (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 3 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-191, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

Perform the trouble diagnosis for CAN communication system. Refer to <u>LAN-17</u>, "Trouble <u>Diagnosis Flow</u> Chart".

INFOID:0000000011461482

Revision: 2014 October

P0011 IVT CONTROL

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0011 is displayed with DTC P0075, first perform the trouble diagnosis for EC-420, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0011	INT/V TIM CONT-B1 (Intake valve timing control performance)	There is a gap between angle of target and phase-control angle degree.	Crankshaft position sensor (POS) Camshaft position sensor (PHASE) Intake valve control solenoid valve Accumulation of debris to the signal pick-up portion of the camshaft Timing chain installation Foreign matter caught in the oil groove for intake valve timing control

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is between 10 V and 16 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

(P)With CONSULT

- Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to normal operating temperature.
- Maintain the following conditions for at least 6 consecutive seconds. Hold the accelerator pedal as steady as possible.

ENG SPEED	1,200 - 2,000 rpm
COOLAN TEMP/S	More than 60°C (140°F)
Selector lever	P or N position (CVT) Neutral position (M/T)

- Stop vehicle with engine running and let engine idle for 10 seconds.
- Check 1st trip DTC.

@With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-193, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

(P)With CONSULT

1. Maintain the following conditions for at least 20 consecutive seconds.

Selector lever D position 1st or 2nd Driving vo.	n 60°C (140°F)
1st or 2nd	
	n (CVT) d position (M/T)
Driving location (Increase condition	ehicle uphill ed engine load will help maintain the driving

CAUTION:

Always drive at a safe speed.

Check 1st trip DTC.

With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-193, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

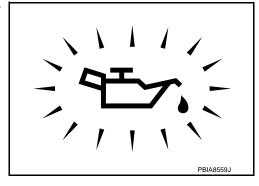
1. CHECK OIL PRESSURE WARNING LAMP

Start engine.

2. Check oil pressure warning lamp and confirm it is not illuminated.

Is oil pressure warning lamp illuminated?

>> Check the engine oil level. Refer to LU-9, "Inspection". NO >> GO TO 2.



2 . CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE

Check the intake valve timing control solenoid valve. Refer to EC-194, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace intake valve timing control solenoid valve. Refer to EM-75, "Exploded View".

3.check crankshaft position sensor (pos)

Check the crankshaft position sensor (POS). Refer to EC-341, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace crankshaft position sensor (POS). Refer to EM-113, "Exploded View".

f 4.CHECK CAMSHAFT POSITION SENSOR (PHASE)

Check the camshaft position sensor (PHASE). Refer to EC-344, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace camshaft position sensor (PHASE). Refer to EM-87, "Exploded View".

5.CHECK CAMSHAFT (INT)

Check the following.

Revision: 2014 October

EC-193

EC

Α

Е

INFOID:0000000011461484

Н

K

L

Ν

Р

2015 JUKE

P0011 IVT CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

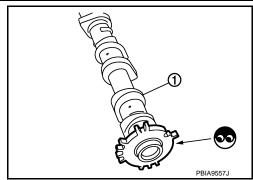
- Accumulation of debris to the signal plate of camshaft (1) rear end
- · Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> GO TO 6.

NO

>> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to EM-88, "Removal and Installation".



6. CHECK TIMING CHAIN INSTALLATION

Check service records for any recent repairs that may cause timing chain misaligned.

Are there any service records that may cause timing chain misaligned?

YES >> Check timing chain installation. Refer to EM-76, "Removal and Installation".

NO >> GO TO 7.

7.CHECK LUBRICATION CIRCUIT

Refer to EM-91, "Inspection", "INSPECTION AFTER INSTALLATION".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Clean lubrication line.

Component Inspection

INFOID:0000000011461485

1. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-I

- Turn ignition switch OFF.
- 2. Disconnect intake valve timing control solenoid valve harness connector.
- 3. Check resistance between intake valve timing control solenoid valve terminals as per the following.

Intake valve timing of	control solenoid valve	
+ -		Resistance
Terminal		
1	2	6.7 - 7.7 Ω [at 20°C (68°F)]
1	Ground	∞ Ω
2	Giodila	(Continuity should not exist)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace intake valve timing control solenoid valve. Refer to EM-75, "Exploded View".

2.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-II

Remove intake valve timing control solenoid valve. Refer to <u>EM-75, "Exploded View"</u>.

Provide 12 V DC between intake valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Make sure that the plunger moves as shown in the figure.

CAUTION:

Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in intake valve timing control solenoid valve.

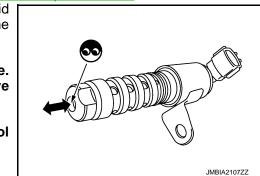
NOTE:

Always replace O-ring when intake valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace intake valve timing control solenoid valve. Refer to EM-75, "Exploded View".



< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0014 EVT CONTROL

DTC Logic INFOID:0000000011461486

DTC DETECTION LOGIC

NOTE:

- If DTC P0014 is displayed with DTC P0078, first perform trouble diagnosis for DTC P0078. Refer to EC-210, "DTC Logic".
- If DTC P0014 is displayed with P1078, first perform trouble diagnosis for P1078. Refer to EC-426. "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0014	EXH/V TIM CONT-B1 (Exhaust valve timing control performance)	There is a gap between angle of target and phase-control angle degree.	Crankshaft position sensor (POS) Camshaft position sensor (PHASE) Exhaust valve timing control position sensor Exhaust valve control solenoid valve Accumulation of debris to the signal pick-up portion of the camshaft Timing chain installation Foreign matter caught in the oil groove for exhaust valve timing control

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is between 10 V and 16 V at idle.

>> GO TO 2.

2 Perform DTC CONFIRMATION PROCEDURE-I

(P)With CONSULT

- Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to the normal operating temperature.
- Maintain the following conditions for at least 6 consecutive seconds. Hold the accelerator pedal as steady as possible.

ENG SPEED	1,200 - 2,000 rpm (A constant rotation is maintained.)
COOLAN TEMP/S	More than 60°C (140°F)
Selector lever	P or N position (CVT) Neutral position (M/T)

- Let engine idle for 10 seconds.
- 5. Check 1st trip DTC.

With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-196. "Diagnosis Procedure"

NO >> GO TO 3.

EC

Α

D

Е

Н

K

L

M

Ν

3. PERFORM DTC CONFIRMATION PROCEDURE-II

(P)With CONSULT

- 1. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Maintain the following conditions for at least 20 consecutive seconds.

ENG SPEED	1,700 - 2,950 rpm (A constant rotation is maintained.)
COOLAN TEMP/S	More than 70°C (158°F)
Selector lever	D position (CVT) 1st or 2nd position (M/T)
Driving location uphill	Driving vehicle uphill (Increased engine load will help maintain the driving conditions required for this test.)

CAUTION:

Always drive at a safe speed.

3. Check 1st trip DTC.

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-196, "Diagnosis Procedure"

NO >> INSPECTION END

Diagnosis Procedure

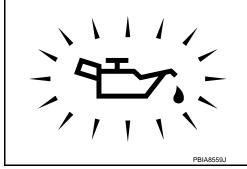
INFOID:0000000011461487

1. CHECK OIL PRESSURE WARNING LAMP

- 1. Start engine.
- Check oil pressure warning lamp and confirm it is not illuminated.

Is oil pressure warning lamp illuminated?

YES >> Check the engine oil level. Refer to <u>LU-9</u>, "<u>Inspection</u>". NO >> GO TO 2.



2. CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE

Check the exhaust valve timing control solenoid valve. Refer to EC-194, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-75, "Exploded View".

3.CHECK CRANKSHAFT POSITION SENSOR (POS)

Check the crankshaft position sensor (POS). Refer to EC-341, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace crankshaft position sensor (POS). Refer to EM-113, "Exploded View".

4. CHECK EXHAUST VALVE TIMING CONTROL POSITION SENSOR

Check the exhaust valve timing control position sensor. Refer to EC-344, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace exhaust valve timing control position sensor. Refer to EM-87, "Exploded View".

5. CHECK CAMSHAFT (EXH)

P0014 EVT CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Check the following.

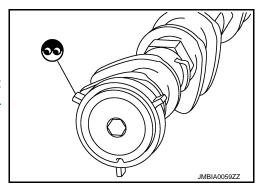
- Accumulation of debris to the signal plate of camshaft rear end
- · Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> GO TO 6.

NO

>> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to EM-88. "Removal and Installation".



6. CHECK TIMING CHAIN INSTALLATION

Check service records for any recent repairs that may cause timing chain misaligned.

Are there any service records that may cause timing chain misaligned?

YES >> Check timing chain installation. Refer to EM-76, "Removal and Installation".

NO >> GO TO 7.

7. CHECK LUBRICATION CIRCUIT

Refer to EM-91, "Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Clean lubrication line.

Component Inspection

INFOID:0000000011461488

1. CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE-I

- Turn ignition switch OFF.
- Disconnect exhaust valve timing control solenoid valve harness connector.
- Check resistance between exhaust valve timing control solenoid valve terminals as per the following.

Exhaust valve timing	control solenoid valve		
+ -		Resistance	
Terr	minal		
1	2	7.0 - 7.7 Ω [at 20°C (68°F)]	
1	Ground	Ω	
2	Giodila	(Continuity should not exist)	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-75, "Exploded View".

2.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE-II

1. Remove exhaust valve timing control solenoid valve. Refer to EM-75, "Exploded View".

Provide 12 V DC between exhaust valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Check that the plunger moves as shown in the figure.

CAUTION:

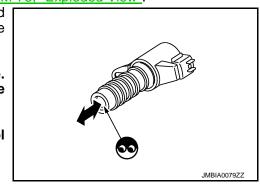
Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in exhaust valve timing control solenoid valve.

NOTE:

Always replace O-ring when exhaust valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END



Α

EC

D

Е

F

Н

П

K

L

IVI

Ν

Р

2015 JUKE

P0014 EVT CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-75, "Exploded View".

P0030, P0031, P0032 A/F SENSOR 1 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0030, P0031, P0032 A/F SENSOR 1 HEATER

DTC Logic

DTC DETECTION LOGIC

EC

Α

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	С
P0030	A/F SEN 1 HTR (B1) (Air fuel ratio (A/F) sensor 1 heater control circuit)	Deterioration in A/F sensor 1 heater performance. (Voltage signal transmitted from A/F sensor 1 heater to ECM is higher/lower than voltage in the normal range.)	Harness or connectors (A/F sensor 1 heater circuit is open or	D
P0031	A/F SEN 1 HTR (B1) (Air fuel ratio (A/F) sensor 1 heater control circuit low)	The current amperage in the A/F sensor 1 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the A/F sensor 1 heater.)	shorted.) • A/F sensor 1 heater	Е
P0032	A/F SEN 1 HTR (B1) (Air fuel ratio (A/F) sensor 1 heater control circuit high)	The current amperage in the A/F sensor 1 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the A/F sensor 1 heater.)	Harness or connectors (A/F sensor 1 heater circuit is shorted.) A/F sensor 1 heater	F

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than between 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for at least 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-199</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461490

K

Ν

Р

${f 1}$.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- 1. Disconnect air fuel ratio (A/F) sensor 1 harness connector.
- 2. Turn ignition switch ON.
- 3. Check the voltage between A/F sensor 1 harness connector and ground.

+			
A/F sensor 1		_	Voltage
Connector	Terminal		
F70	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

Revision: 2014 October EC-199 2015 JUKE

P0030, P0031, P0032 A/F SENSOR 1 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

2.check a/f sensor 1 heater output signal circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

	+		_	
A/F se	ensor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F70	3	E18	125	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK A/F SENSOR 1 HEATER

Check the A/F sensor 1 heater. Refer to EC-200, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 4.

f 4.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to EM-43, "Exploded View".

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

INFOID:0000000011461491

1.CHECK AIR FUEL RATIO (A/F) SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect A/F sensor 1 harness connector.
- 3. Check resistance between A/F sensor 1 terminals as per the following.

A/F sensor 1		
+	_	Resistance
Terr	minal	
	4	1.8 - 2.44 Ω [at 20°C (68°F)]
3	1	
	2	Ω
4	1	(Continuity should not exist)
	2	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1. Refer to EM-43, "Exploded View".

CAUTION:

P0030, P0031, P0032 A/F SENSOR 1 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

• Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.

• Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

EC

Α

D

Е

F

G

Н

K

L

M

Ν

0

P0037, P0038 HO2S2 HEATER

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0037	HO2 HTR (B1) (Heated oxygen sensor 2 heater control circuit low)	The current amperage in the heated oxygen sensor 2 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the heated oxygen sensor 2 heater.)	Harness or connectors (Heated oxygen sensor 2 heater circuit is open or shorted.) Heated oxygen sensor 2 heater
P0038	HO2 HTR (B1) (Heated oxygen sensor 2 heater control circuit high)	The current amperage in the heated oxygen sensor 2 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the heated oxygen sensor 2 heater.)	Harness or connectors (Heated oxygen sensor 2 heater circuit is shorted.) Heated oxygen sensor 2 heater

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Check 1st trip DTC.
- **With GST**

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-202, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461493

1. CHECK HO2S2 POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between HO2S2 harness connector and ground.

+			
HO2S2		_	Voltage
Connector	Terminal		
F69	2	Ground	Battery voltage

P0037, P0038 HO2S2 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

ls	the	inspection	result	normal?
ı	uic	II IOPCCIIOI I	1 C S G I L	i i Oi i i i ai i

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK HO2S2 OUTPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between HO2S2 harness connector and ECM harness connector.

	+ -			
НО	2S2	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F69	3	E18	126	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HEATED OXYGEN SENSOR 2 HEATER

Check the heated oxygen sensor 2 heater. Refer to EC-203, "Component Inspection".

Is the inspection result normal?

YFS >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 4.

4. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

1. CHECK HEATED OXYGEN SENSOR 2 HEATER

- 1. Turn ignition switch OFF.
- Disconnect heated oxygen sensor 2 (HO2S2) harness connector. 2.
- Check resistance between HO2S2 terminals as per the following.

+	_	
Heated oxy	gen sensor 2	Resistance
Terr	minal	
2	3	3.3 - 4.4 Ω [at 25°C (77°F)]
	1	
1	3	
	4	$\infty \Omega$
	1	(Continuity should not exist)
4	2	
	3	

Is the inspection result normal?

EC-203 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

K

INFOID:0000000011461494

M

N

P0037, P0038 HO2S2 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> INSPECTION END

NO >> GO TO 2.

2. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

P0045, P0047, P0048 TC BOOST CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0045, P0047, P0048 TC BOOST CONTROL SOLENOID VALVE

DTC Logic INFOID:0000000011461495

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0045	TC BOOST SOL/V (Turbocharger boost control solenoid valve circuit open)	ECM detected the turbocharger boost control solenoid valve circuit is open.	
P0047	TC/SC BOOST CONT A (Turbocharger boost control solenoid valve circuit low in- put)	ECM detected the turbocharger boost control solenoid valve circuit is short to ground.	Harness or connectors (Turbocharger boost control solenoid valve circuit is open or shorted.) Turbocharger boost control solenoid valve
P0048	TC/SC BOOST CONT A (Turbocharger boost control solenoid valve circuit high input)	ECM detected the turbocharger boost control solenoid valve circuit is short to power.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-205, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect turbocharger boost control solenoid valve harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between turbocharger boost control solenoid valve harness connector and ground.

	+		
Turbocharger boost control sole- noid valve		_	Voltage
Connector Terminal			
F54	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

>> GO TO 2. NO

2.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

Turn ignition switch OFF.

EC-205 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

INFOID:0000000011461496

M

Ν

P0045, P0047, P0048 TC BOOST CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between turbocharger boost control solenoid valve harness connector and IPDM E/R harness connector.

	+		_	
•	r boost control id valve	IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		
F54	2	E14	36	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check turbocharger boost control solenoid valve output signal circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between turbocharger boost control solenoid valve harness connector and ECM harness connector.

	+	-		
•	r boost control id valve	ECM		Continuity
Connector	Terminal	Connector Terminal		
F54	1	F26	73	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

Check the turbocharger boost control solenoid valve. Refer to EC-206, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost control solenoid valve. Refer to EM-39, "Exploded View".

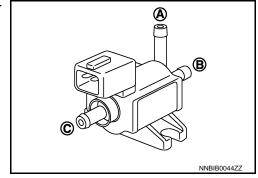
Component Inspection

INFOID:0000000011461497

1. CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

- 1. Turn ignition switch OFF
- 2. Disconnect turbocharger boost control solenoid valve harness connector.
- Disconnect hoses connected to turbocharger boost control solenoid valve.
- 4. Check air passage continuity of turbocharger boost control solenoid valve as per the following conditions.

Condition	Air passage continuity between (A) and (B)	Air passage continuity between (A) and (C)
12 V direct current supply between terminals 1 and 2	Existed	Not existed
No supply	Not existed	Existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost control solenoid valve. Refer to EM-39, "Exploded View".

P0075 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0075 IVT CONTROL SOLENOID VALVE

DTC Logic INFOID:0000000011461498

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name ((Trouble diagnosis content))	DTC detecting condition	Possible cause
P0075	INT/V TIM V/CIR-B1 (Intake valve timing control solenoid valve circuit)	An improper voltage is sent to the ECM through intake valve timing control solenoid valve.	Harness or connectors (Intake valve timing control solenoid valve circuit is open or shorted.) Intake valve timing control solenoid valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO2.

2.perform dtc confirmation procedure

- Start engine and let it idle for 5 seconds.
- Check 1st trip DTC. 2.

Is 1st trip DTC detected?

YES >> Proceed to EC-207, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

 ${f 1}$.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect intake valve timing (IVT) control solenoid valve harness connector.
- Turn ignition switch ON. 3.
- Check the voltage between intake valve timing control solenoid valve harness connector and ground.

+			
IVT control solenoid valve		_	Voltage
Connector	Terminal		
F41	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between IVT control solenoid valve harness connector and IPDM E/R harness connector.

EC-207 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

INFOID:0000000011461499

K

N

P0075 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+	+		
IVT control s	olenoid valve	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F41	2	E14	36	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check intake valve timing control solenoid valve ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between IVT control solenoid valve harness connector and ECM harness connector.

+			+	
IVT control s	olenoid valve	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F41	1	F26	81	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE

Check the intake valve timing control solenoid valve. Refer to EC-208. "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace intake valve timing control solenoid valve.

Component Inspection

INFOID:0000000011461500

1. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-I

- Turn ignition switch OFF.
- 2. Disconnect intake valve timing control solenoid valve harness connector.
- 3. Check resistance between intake valve timing control solenoid valve terminals as per the following.

Intake valve timing of	control solenoid valve		
+ -		Resistance	
Terr	minal		
1	2	6.7 - 7.7 Ω [at 20°C (68°F)]	
1	Ground	∞ Ω	
2	Giodila	(Continuity should not exist)	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace intake valve timing control solenoid valve. Refer to EM-75, "Exploded View".

2. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-II

1. Remove intake valve timing control solenoid valve. Refer to EM-75, "Exploded View".

P0075 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Provide 12 V DC between intake valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Make sure that the plunger moves as shown in the figure.

CAUTION:

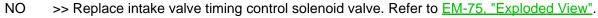
Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in intake valve timing control solenoid valve.

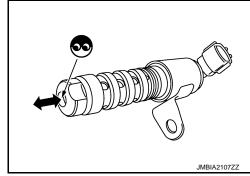
NOTE:

Always replace O-ring when intake valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END





EC

Α

C

D

Е

F

G

Н

1

K

L

M

Ν

0

P0078 EVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0078 EVT CONTROL SOLENOID VALVE

DTC Logic INFOID:000000011461501

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0078	EX V/T ACT/CIRC-B1 (Exhaust valve timing control sole- noid valve circuit)	An improper voltage is sent to the ECM through exhaust valve timing control solenoid valve.	Harness or connectors (Exhaust valve timing control solenoid valve circuit is open or shorted.) Exhaust valve timing control solenoid valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-210, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461502

1.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect exhaust valve timing (EVT) control solenoid valve harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between exhaust valve timing control solenoid valve harness connector and ground.

	+			
EVT control solenoid valve		_	Voltage	
Connector	Terminal			
F100	2	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between EVT control solenoid valve harness connector and IPDM E/R harness connector.

P0078 EVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

+		+		
EVT control s	solenoid valve	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F100	2	E14	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EVT control solenoid valve harness connector and ECM harness connector.

+		+		
EVT control s	solenoid valve	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F100	1	F26	85	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE

Check the exhaust valve timing control solenoid valve. Refer to EC-208, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace exhaust valve timing control solenoid valve.

Component Inspection

1. CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE-I

- Turn ignition switch OFF.
- 2. Disconnect exhaust valve timing control solenoid valve harness connector.
- 3. Check resistance between exhaust valve timing control solenoid valve terminals as per the following.

Exhaust valve timing	control solenoid valve		
+	-	Resistance	
Terr	minal		
1	2	7.0 - 7.7 Ω [at 20°C (68°F)]	
1	Ground	$\infty \Omega$	
2	Glound	(Continuity should not exist)	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-75, "Exploded View".

2.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE-II

1. Remove exhaust valve timing control solenoid valve. Refer to EM-75, "Exploded View".

D

EC

Α

Е

F

Н

J

INFOID:0000000011461503

N

Ν

0

P0078 EVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Provide 12 V DC between exhaust valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Check that the plunger moves as shown in the figure.

CAUTION:

Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in exhaust valve timing control solenoid valve.

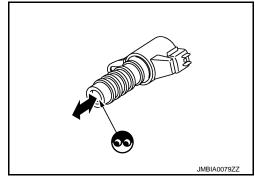
NOTE:

Always replace O-ring when exhaust valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-75, "Exploded View".



P0087 FRP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0087 FRP CONTROL SYSTEM

DTC Logic INFOID:0000000011461508

DTC DETECTION LOGIC

NOTE:

- If DTC P0087 is displayed with DTC P0090 and/or P1197, first perform the trouble diagnosis for DTC P0090 and/or P1197.
- DTC P0087 may be displayed when running out of gas or air accumulation.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0087	LOW FUEL PRES (High fuel pressure too low)	 Fuel rail pressure does not reach 1.3 MPa (13 bar, 13.3 kg/cm2, 188.5 psi) at engine cold start [water temperature 5°C (41°F) – 40°C (104°F)]. Fuel rail pressure remains at 8.5 MPa (85 bar, 86.7 kg/cm2, 1232.8 psi) or less for 1 second or more during engine idle condition after cold start [water temperature 5°C (41°F) – 40°C (104°F)]. The following condition continues for 5 seconds or more after engine start (regardless of water temperature): Target fuel pressure – Actual fuel pressure ≥ 2.7 MPa (27 bar, 27.5 kg/cm2, 392 psi). 	Fuel system Leakage in fuel line High pressure fuel pump Low pressure fuel pump Damage in lifter

DTC CONFIRMATION PROCEDURE

1. CHECK FUEL LEAKAGE

- Turn ignition switch ON.
- Visually check the piping between low pressure fuel pump and fuel injectors for fuel leakage.
- Start the engine.
- Visually check the piping between low pressure fuel pump and fuel injectors for fuel leakage.

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.
- Before performing the following procedure, check that the fuel tank is 1/8 full of fuel.

>> GO TO 3.

3.perform dtc confirmation procedure-1 $\,$

(P)WITH CONSULT

- Turn ignition switch ON.
- Select "COOLAN TEMP/S" in "DATA MONITOR" mode of "ENGNE" using CONSULT.
- Check the following condition;.

COOLAN TEMP/S $: 5 - 40^{\circ}C (41 - 104^{\circ}F)$

EC-213 Revision: 2014 October 2015 JUKE

EC

Α

Е

D

F

L

M

N

P0087 FRP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

WITH GST

Follow the above steps for "WITH CONSULT".

Is the condition satisfied?

YES >> GO TO 4.

NO >> 1. Satisfy the condition.

2. Retry from step 1.

4. PERFORM DTC CONFIRMATION PROCEDURE-2

(P)WITH CONSULT

- 1. Start the engine and let it idle for 10 seconds.
- Check 1st trip DTC.

WITH GST

Follow the above steps for "WITH CONSULT".

Is 1st trip DTC detected?

YES >> Proceed to EC-214, "Diagnosis Procedure".

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE-3

(P)WITH CONSULT

- 1. Select "COOLAN TEMP/S" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Maintain the following condition for 10 seconds or more at idle.

COOLAN TEMP/S : 70°C (104°F) or more

3. Check 1st trip DTC.

WITH GST

Follow the above steps for "WITH CONSULT".

Is 1st trip DTC detected?

YES >> Proceed to EC-214, "Diagnosis Procedure".

NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000011461509

1. PERFORM THE HIGH PRESSURE FUEL PUMP COMPONENT INSPECTION

Perform the high pressure fuel pump component inspection. Refer to <u>EC-214, "Component Inspection (High Pressure Fuel Pump)"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the fuel pump. EM-48, "Removal and Installation".

2. CHECK FUEL LEAKAGE

- 1. Start the engine.
- 2. Visually check that the fuel pump, fuel rail, and fuel piping have no fuel leakage.

Is the inspection result normal?

YES >> Check that the fuel system has no breakage, bend, and crush. Refer to FL-4, "Inspection".

NO >> Repair or Replace the error-detected parts.

Component Inspection (High Pressure Fuel Pump)

INFOID:0000000011461510

1. CHECK HIGH PRESSURE FUEL PUMP-1

- 1. Turn ignition switch OFF.
- Disconnect high pressure fuel pump harness connector.
- Check the resistance between high pressure fuel pump terminals.

P0087 FRP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

+ High pressu	- ire fuel pump	Condition		Condition		Resistance (Approx.)
Terminal				, , , ,		
1	2	Temperature °C (°F)	20 – 30 (68 - 86)	0.46 - 0.56Ω		

EC

Α

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace high pressure fuel pump. Refer to EM-48, "Removal and Installation".

2.CHECK HIGH PRESSURE FUEL PUMP-2

®WITH CONSULT

- 1. Reconnect high pressure fuel pump harness connector.
- 2. Start the engine.
- 3. Check "FUEL PRES SEN V" in "DATA MONITOR" mode of "ECM" using CONSULT.

Monitor item	Monitor item Condition	
FUEL PRES SEN V	Engine speed: idle	1,140 – 1,460 mV
	Engine speed: Revving engine from idle to 4,000 rpm quickly	

NUMBER OF THE PROPERTY OF THE

- 1. Reconnect high pressure fuel pump harness connector.
- 2. Start the engine.
- 3. Check FRP sensor signal voltage.

	ECM			No.	
Connector	+	_	Condition	Value (Approx.)	
Termi		ninal		, , ,	
F25 18		18 44	Engine speed: idle	1,140 – 1,460 mV	
123	10	44	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,140 – 3,060 mV	

YES >> INSPECTION END

NO >> Replace high pressure fuel pump. Refer to EM-48, "Removal and Installation".

Revision: 2014 October EC-215 2015 JUKE

D

Е

F

G

1

Н

J

M

L

Ν

P0088 FRP CONTROL SYSTEM

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0088 is displayed with DTC P0090, first perform the trouble diagnosis for DTC P0090.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0088	HIGH FUEL PRES (High fuel pressure too high)	 Fuel rail pressure remains at more than 12.5 MPa (125 bar, 127.5 kg/cm2, 1812.5 psi) for 1 second or more during engine idle condition after cold start [water temperature 5°C (41°F) - 40°C (104°F)]. The following condition continues for 5 seconds or more after engine start (regardless of water temperature): Actual fuel pressure – Target fuel pressure ≥ 2.7 MPa (27 bar, 27.5 kg/cm², 392 psi) 	Harness or connector (The high pressure fuel pump circuit is open or shorted) High pressure fuel pump

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.
- Before performing the following procedure, check that the fuel tank is 1/8 full of fuel.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-1

 Warm up the engine to the normal operating temperature and keep the engine speed at idle for 10 seconds.

NOTE:

Warm up the engine until "COOLANT TEMP/S" on "DATA MONITOR" mode of "ENGINE" using CON-SULTIII reaches at least 70°C (158°F).

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-218, "Diagnosis Procedure".

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-2

- 1. Cool the engine until the engine coolant temperature reaches 60°C (140°F) or less.
- 2. Start the engine and wait at least 40 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-218, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461512

1. PERFORM THE HIGH PRESSURE FUEL PUMP COMPONENT INSPECTION

P0088 FRP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Perform the high pressure fuel pump component inspection. Refer to <u>EC-217</u>. "Component Inspection (<u>High</u> Pressure Fuel Pump)".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace the fuel pump. <u>EM-48</u>, "Removal and Installation".

2. CHECK FUEL LEAKAGE

- 1. Start the engine.
- Visually check that the fuel pump, fuel rail, and fuel piping have no fuel leakage.

Is the inspection result normal?

- YES >> Check that the fuel system has no breakage, bend, and crush. Refer to FL-4. "Inspection".
- NO >> Repair or Replace the error-detected parts.

Component Inspection (High Pressure Fuel Pump)

INFOID:0000000011461513

Α

EC

D

Е

F

Н

Ν

Р

1. CHECK HIGH PRESSURE FUEL PUMP-1

- 1. Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump harness connector.
- 3. Check the resistance between high pressure fuel pump terminals.

+ High pressu	- ire fuel pump	Condition		Resistance (Approx.)	
Terr	minal			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
1	2	Temperature °C (°F)	20 – 30 (68 - 86)	$0.46 - 0.56 \Omega$	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace high pressure fuel pump. Refer to EM-48, "Removal and Installation".

2.CHECK HIGH PRESSURE FUEL PUMP-2

(P)WITH CONSULT

- Reconnect high pressure fuel pump harness connector.
- Start the engine.
- 3. Check "FUEL PRES SEN V" in "DATA MONITOR" mode of "ECM" using CONSULT.

Monitor item	Condition	Voltage (Approx.)
FUEL PRES SEN V	Engine speed: idle	1,140 – 1,460 mV
TOLLT NES SEN V	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,140 – 3,060 mV

®WITHOUT CONSULT

- 1. Reconnect high pressure fuel pump harness connector.
- 2. Start the engine.
- 3. Check FRP sensor signal voltage.

	ECM			
Connector	Connector + -		Condition	Value (Approx.)
Connector	Term	ninal		, , ,
F25	F25 18 44		Engine speed: idle	1,140 – 1,460 mV
1 23			Engine speed: Revving engine from idle to 4,000 rpm quickly	1,140 – 3,060 mV

YES >> INSPECTION END

NO >> Replace high pressure fuel pump. Refer to EM-48. "Removal and Installation".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0090 HIGH PRESSURE FUEL PUMP

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0090 is displayed with DTC P1197, first perform the trouble diagnosis for DTC P1197.
- DTC P0090 may be displayed when running out of gas.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0090	FUEL PUMP (High pressure fuel pump circuit)	 Fuel rail pressure remains at 1.1 MPa (11 bar, 11.2 kg/ cm², 159.5 psi) or less for 5 seconds or more during engine rev. Fuel rail pressure remains at 18.5 MPa (185 bar, 188.7 kg/ cm², 2682.5 psi) or more for 0.3 seconds or more during engine rev. 	Harness or connectors (The fuel pump circuit is open or shorted.) High pressure fuel pump

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.
- Before performing the following procedure, check that the fuel tank is 1/8 full of fuel.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

(P)WITH CONSULT

- 1. Start engine.
- Select "COOLAN TEMP/S" in "DATA MONITOR" mode of "ENGNE" using CONSULT.
- 3. Maintain the following condition for 5 seconds or more at idle.

COOLAN TEMP/S : 70°C (104°F) or more

4. Check 1st trip DTC.

WITH GST

Follow the above steps for "WITH CONSULT".

Is 1st trip DTC detected?

YES >> Proceed to EC-218, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461515

1. CHECK HIGH PRESSURE FUEL PUMP POWER SUPPLY

- Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+		
ECM		_	Voltage
Connector	Terminal		
F26	54	Ground	Battery voltage

EC

Α

Is inspection result normal?

YES >> GO TO 8.

NO >> GO TO 2.

Е

F

M

Ν

Р

2.CHECK HIGH PRESSURE FUEL PUMP POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Disconnect fuel injector relay harness connector.
- Check the continuity between ECM harness connector and high pressure fuel pump relay harness connector.

+			_	
ECM		High pressure fuel pump re- lay		Continuity
Connector	Terminal	Connector	Terminal	
F26	54	E58	3	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts

3.check high pressure fuel pump relay power supply (contact side)

Check the voltage between high pressure fuel pump relay harness connector and ground.

	+		
High pressure	fuel pump relay	_	Voltage
Connector	Terminal		
E58	5	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> Perform the trouble diagnosis for power supply circuit.

4.CHECK HIGH PRESSURE FUEL PUMP RELAY POWER SUPPLY (EXCITATION COIL SIDE)

- Reconnect all harness connectors disconnected.
- 2. Turn ignition switch ON.
- 3. Check the voltage between high pressure fuel pump relay harness connector and ground.

	+		
High pressure	fuel pump relay	_	Voltage
Connector	Terminal		
E58	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5

5.CHECK HIGH PRESSURE FUEL PUMP RELAY POWER SUPPLY CIRCUIT (EXCITATION COIL SIDE)

1. Turn ignition switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Disconnect high pressure fuel pump relay harness connector.
- 3. Disconnect IPDM E/R harness connector.
- check the continuity between ipdm e/r harness connector and high pressure fuel pump harness connector.

+			_	
IPDI	M E/R	High pressure fuel pump re- lay		Continuity
Connector	Terminal	Connector	Terminal	
E14	35	E58	2	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

6.CHECK HIGH PRESSURE FUEL PUMP RELAY GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump relay harness connector.
- Check the continuity between high pressure fuel pump relay harness connector and ground.

	+		
High pressure	fuel pump relay	_	Continuity
Connector	Terminal		
E58	1	Ground	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

.CHECK HIGH PRESSURE FUEL PUMP RELAY

Check the high pressure fuel pump relay. Refer to <u>EC-541</u>, "Component Inspection (High Pressure Fuel Pump Relay)".

Is inspection result normal?

YES >> GO TO 8.

NO >> Replace high pressure fuel pump relay. Refer to <u>PG-8</u>, "Standardized Relay".

8.CHECK HIGH PRESSURE FUEL PUMP CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector and high pressure fuel pump harness connector.
- Check the continuity between ECM harness connector and high pressure fuel pump harness connector.

+			_	
ECM		High pressure fuel pump		Continuity
Connector	Terminal	Connector	Terminal	
F26	55	F53	1	Existed
1 20	56	1 33	2	LXISIEU

4. Also check harness for short to ground and to power.

Is inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

9. CHECK HIGH PRESSURE FUEL PUMP

Check the high pressure fuel pump. Refer to EC-221, "Component Inspection (High Pressure Fuel Pump)".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is inspection result normal?

YES >> GO TO 10.

NO >> Replace high pressure fuel pump. Refer to EM-48, "Exploded View".

10.check high pressure fuel pump installation condition

Turn ignition switch OFF.

Check that the high pressure fuel pump is installed with no backlash and looseness. 2.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace error-detected parts.

11. CHECK CAMSHAFT

- Remove camshaft. Refer to EM-87, "Exploded View".
- Check camshaft. Refer to EM-91, "Inspection".

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace camshaft. Refer to EM-87, "Exploded View".

Component Inspection (High Pressure Fuel Pump)

1. CHECK HIGH PRESSURE FUEL PUMP-1

- Turn ignition switch OFF.
- Disconnect high pressure fuel pump harness connector. 2.
- Check the resistance between high pressure fuel pump terminals.

+ High pressu	- ire fuel pump	Condition Temperature °C (°F) 20 – 30 (68 - 86)		Resistance (Approx.)	
Terr	minal			(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
1	2			0.46 - 0.56 Ω	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace high pressure fuel pump. Refer to EM-48, "Removal and Installation".

2.CHECK HIGH PRESSURE FUEL PUMP-2

(P)WITH CONSULT

- Reconnect high pressure fuel pump harness connector.
- Start the engine.
- Check "FUEL PRES SEN V" in "DATA MONITOR" mode of "ECM" using CONSULT.

Monitor item	Condition	Voltage (Approx.)
FUEL PRES SEN V	Engine speed: idle	1,140 – 1,460 mV
I OLL I NEO OLIV	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,140 – 3,060 mV

- 1. Reconnect high pressure fuel pump harness connector.
- Start the engine.
- Check FRP sensor signal voltage.

ECM				V/-l	
		_	Condition	Value (Approx.)	
		ninal		(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
F25	F25 18 44		Engine speed: idle	1,140 – 1,460 mV	
F23 10 44		77	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,140 – 3,060 mV	

EC-221 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

INFOID:0000000011461516

Н

K

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> INSPECTION END

NO >> Replace high pressure fuel pump. Refer to EM-48, "Removal and Installation".

P0096 IAT SENSOR 2

DTC Logic INFOID:0000000011461517

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0096	IAT SENSOR 2 B1 [Intake air temperature (IAT) sensor 2 circuit range/perfor- mance]	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor 1, IAT sensor 2, ECT sensor, FTT sensor, and EOT sensor) shows that the voltage signal of the IAT sensor 2 is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the IAT sensor 2 circuit) IAT sensor 2

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 3.

NO >> GO TO 2.

2. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-224, "Component Function Check".

NOTE:

Use the component function check to check the overall function of the IAT sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-224, "Diagnosis Procedure".

3. PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 60 minutes.
- 2. Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

3. Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

4. Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

EC

D

Е

Α

L

Ν

P0096 IAT SENSOR 2

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-224, "Diagnosis Procedure".

NO >> INSPECTION END

Component Function Check

INFOID:0000000011461518

1. CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR 2

- 1. Turn ignition switch OFF.
- Disconnect turbocharger boost sensor harness connector.
- 3. Check resistance between turbocharger boost sensor terminals as follows.

Turbocharger boost sensor					
+	-	Condition		Resistance ($k\Omega$)	
Terminal					
3	4	Temperature [°C (°F)] 25 (77)		1.80 – 2.20	

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to EC-224, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461519

1. CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR 2

Check intake air temperature sensor 2. Refer to EC-224, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor (with intake temperature sensor 2). Refer to <u>EM-32</u>, <u>"Exploded View"</u>.

Component Inspection

INFOID:0000000011461520

1. CHECK INTAKE AIR TEMPERATURE SENSOR 2

- 1. Turn ignition switch OFF.
- 2. Disconnect turbocharger boost sensor harness connector.
- Check resistance between turbocharger boost sensor terminals as follows.

Turbocharger boost sensor					
+	_	Condition	Resistance (k Ω)		
Terminals					
3	4	Temperature [°C (°F)]	25 (77)	1.80 – 2.20	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to EM-29, <a href="Exploded View".

P0097, P0098 IAT SENSOR 2

DTC Logic INFOID:0000000011461521

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0097	IAT SENSOR 2 B1 (Intake air temperature sensor 2 circuit low input)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the intake air temperature sensor 2 is 0.085 V or less.	Harness or connectors (Intake air temperature sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is)
P0098	IAT SENSOR 2 B1 (Intake air temperature sensor 2 circuit high input)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the intake air temperature sensor 2 is 4.84 V or more.	open or shorted.) (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Crankshaft position sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) (Intake air temperature sensor 2 Turbocharger boost sensor Fuel rail pressure sensor Battery current sensor G sensor Crankshaft position sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-225, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1.CHECK INTAKE AIR TEMPERATURE SENSOR 2 POWER SUPPLY CIRCUIT-I

Turn ignition switch OFF.

Κ

Ν

Р

Α

EC

INFOID:0000000011461522

Revision: 2014 October EC-225 2015 JUKE

P0097, P0098 IAT SENSOR 2

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Disconnect turbocharger boost sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between turbocharger boost sensor harness connector terminals.

Tu				
Connector	+	_	Voltage (Approx.)	
Connector	Terr	ninal	(11 - 7	
F75	F75 1 3			

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2. CHECK INTAKE AIR TEMPERATURE SENSOR 2 SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

+		_		
Turbocharge	r boost sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F75	4	F26	88	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. CHECK INTAKE AIR TEMPERATURE SENSOR 2

Check intake air temperature sensor 2. Refer to EC-227, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to EM-29, <a href="Exploded View".

4. CHECK INTAKE AIR TEMPERATURE SENSOR 2 POWER SUPPLY CIRCUIT-II

Check the voltage between turbocharger boost sensor harness connector terminal and ground.

	+		
Turbocharger boost sensor		_	Voltage (Approx.)
Connector Terminal			, , ,
F75 1		Ground	5 V

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 7.

CHECK INTAKE AIR TEMPERATURE SENSOR 2 GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

P0097, P0098 IAT SENSOR 2

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

+						
Turbocharge	r boost sensor	ECM		r ECM		Continuity
Connector	Terminal	Connector Terminal				
F75	3	F25	44	Existed		

EC

D

Е

Α

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

ECM		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
F25	1			
F23	2	Ground	Existed	
E18	123			
	124			
	127			

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

7. CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connectors and each sensor harness connectors
- 3. Check harness connector for short to power and short to ground, between the following terminals.

ECM		Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1
	68 72	Battery current sensor	F52	1
F26		G sensor	B32	3
F20		CMP sensor	F109	1
		EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

Component Inspection

INFOID:0000000011461523

Ν

Р

1. CHECK INTAKE AIR TEMPERATURE SENSOR 2

- Turn ignition switch OFF.
- 2. Disconnect turbocharger boost sensor harness connector.
- Check resistance between turbocharger boost sensor terminals as follows.

P0097, P0098 IAT SENSOR 2

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Turbocharger boost sensor				
+	_	Condition	Resistance ($k\Omega$)	
Term	ninals			
3	4	Temperature [°C (°F)]	25 (77)	1.80 – 2.20

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to EM-29. <a href="Exploded View".

P0101 MAF SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0101 is displayed with other DTC, first perform the trouble diagnosis for other DTC.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0101	MAF SEN/CIRCUIT-B1 [Mass air flow (MAF) sensor circuit range/performance]	 A high voltage from the sensor is sent to ECM under light load driving condition. A low voltage from the sensor is sent to ECM under heavy load driving condition. 	Harness or connectors (MAF sensor circuit is open or shorted.) Intake air leaks MAF sensor EVAP control system pressure sensor Intake air temperature sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start engine and warm it up to normal operating temperature.
- Drive the vehicle for at least 5 seconds under the following conditions: CAUTION:

Always drive vehicle at safe speed.

Selector lever	Suitable position
Vehicle speed	40 km/h (25 MPH) or more

NOTE:

- The gear must be fixed while driving the vehicle.
- Keep the accelerator pedal as steady as possible during cruising.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-229, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK INTAKE SYSTEM

Check the following for connection.

- · Air duct
- Vacuum hoses
- Intake air passage between air duct and intake manifold

Is the inspection result normal?

YES >> GO TO 2.

NO >> Reconnect the parts.

2.CHECK MASS AIR FLOW (MAF) SENSOR POWER SUPPLY

EC

Α

D

Е

F

Н

- 1

J

ı

N /I

IVI

Ν

INFOID:0000000011461525

Р

.

< DTC/CIRCUIT DIAGNOSIS >

- 1. Turn ignition switch OFF.
- Disconnect MAF sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between MAF sensor harness connector and ground.

-	+		
MAF	sensor	_	Voltage
Connector	Terminal		
F4	5	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.check mass air flow (maf) sensor power supply circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between MAF sensor harness connector and IPDM E/R harness connector.

+		-		
MAF sensor		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F4	5	E14	35	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK MAF SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between MAF sensor harness connector and ECM harness connector.

+		-		
MAF sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F4	4	F25	9	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5}$.CHECK MAF SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between MAF sensor harness connector and ECM harness connector.

+		_		
MAF sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F4	3	F25	13	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts

P0101 MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

6.CHECK INTAKE AIR TEMPERATURE SENSOR 1

Check the intake air temperature sensor 1. Refer to EC-242, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

>> Replace MAF sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded View". NO

7.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check the EVAP control system pressure sensor. Refer to EC-375, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD: Exploded View".

8.CHECK MAF SENSOR

Check the MAF sensor. Refer to EC-231, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace MAF sensor. Refer to <a>EM-27, "Exploded View". NO

Component Inspection

1.CHECK MASS AIR FLOW SENSOR-I

(P)With CONSULT

1. Turn ignition switch OFF.

Reconnect all harness connectors disconnected.

- Start engine and warm it up to normal operating temperature.
- Connect CONSULT and select "DATA MONITOR" mode of "ENGINE".
- Select "MAS A/F SE-B1" and check indication.

Monitor item	Condition	MAS A/F SE-B1
MAS A/F SE-B1	Ignition switch ON (Engine stopped.)	Approx. 0.4 V
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
	Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

- Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- Check the voltage between ECM harness connector and ground.

	Connector + -			
Connector			Condition	Voltage
Connector	Terminal			
			Ignition switch ON (Engine stopped.)	Approx. 0.4 V
F25		0	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
125		2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V	
		Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*	

EC-231 Revision: 2014 October 2015 JUKE

EC

D

Е

F

INFOID:0000000011461526

Н

N

< DTC/CIRCUIT DIAGNOSIS >

*: Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. CHECK FOR THE CAUSE OF UNEVEN AIR FLOW THROUGH MASS AIR FLOW SENSOR

- 1. Turn ignition switch OFF.
- 2. Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.
- Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- Intake valve deposits
- Improper specification of intake air system parts

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK MASS AIR FLOW SENSOR-II

(I) With CONSULT

- 1. Repair or replace malfunctioning part.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Connect CONSULT and select "DATA MONITOR" mode of "ENGINE".
- 4. Select "MAS A/F SE-B1" and check indication.

Monitor item	Condition	MAS A/F SE-B1
MAS A/F SE-B1	Ignition switch ON (Engine stopped.)	Approx. 0.4 V
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
	Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

- 1. Repair or replace malfunctioning part.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Check the voltage between ECM harness connector and ground.

ECM				
Connector	+	_	- Condition	
Connector	Terminal			
			Ignition switch ON (Engine stopped.)	Approx. 0.4 V
F25	13 9	0	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
		2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V	
			Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4. CHECK MASS AIR FLOW SENSOR-III

P0101 MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector and reconnect it again.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode of "ENGINE".
- 5. Select "MAS A/F SE-B1" and check indication.

Monitor item	Condition	MAS A/F SE-B1
	Ignition switch ON (Engine stopped.)	Approx. 0.4 V
MAS A/F SE-B1	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
MAS A/I SE-BI	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
	Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

- Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector and reconnect it again.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the voltage between ECM harness connector and ground.

	ECM			
Connector	+	_	Condition	Voltage
Connector	Terr	minal		
			Ignition switch ON (Engine stopped.)	Approx. 0.4 V
F25	12	13 9	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
123	13		2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
			Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Clean or replace mass air flow sensor. Refer to EM-27, "Exploded View".

EC

Α

D

Е

F

Н

Κ

L

N /

Ν

C

P0102, P0103 MAF SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0102	MAF SEN/CIRCUIT-B1 (Mass air flow sensor circuit low input)	An excessively low voltage from the mass air flow sensor is sent to ECM.	Harness or connectors (Mass air flow sensor circuit is open or shorted.) Intake air leaks Mass air flow sensor
P0103	MAF SEN/CIRCUIT-B1 (Mass air flow sensor circuit high input)	An excessively high voltage from the mass air flow sensor is sent to ECM.	Harness or connectors (Mass air flow sensor circuit is open or shorted.) Mass air flow sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

Which DTC is detected?

P0102 >> GO TO 2.

P0103 >> GO TO 3.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0102

- 1. Start engine and wait at least 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-234, "Diagnosis Procedure".

NO >> INSPECTION END

3.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0103-I

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-234, "Diagnosis Procedure".

NO >> GO TO 4.

4.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0103-II

- 1. Start engine and wait at least 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-234, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461528

1.INSPECTION START

Confirm the detected DTC.

Which DTC is detected?

P0102 >> GO TO 2.

P0103 >> GO TO 3.

P0102, P0103 MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

2. CHECK INTAKE SYSTEM

Check the following for connection.

- Air duct
- Vacuum hoses
- Intake air passage between air duct to intake manifold

Is the inspection result normal?

YES >> GO TO 3.

NO >> Reconnect the parts. Refer to EM-27, "Exploded View".

3.CHECK MAF SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect mass air flow (MAF) sensor harness connector. 2.
- Turn ignition switch ON.
- Check the voltage between MAF sensor harness connector and ground.

	+		
MAF	sensor	_	Voltage
Connector	Terminal		
F4	5	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5. NO >> GO TO 4.

4. CHECK MAF SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between MAF sensor harness connector and IPDM E/R harness connector.

+				
MAF sensor		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F4	5	E14	35	Existed

Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 5}.$ CHECK MAF SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between MAF sensor harness connector and ECM harness connector.

+				
MAF	sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F4	4	F25	9	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK MAF SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between MAF sensor harness connector and ECM harness connector.

EC

D

Е

Н

M

Ν

+				
MAF	sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F4	3	F25	13	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

7. CHECK MAF SENSOR

Check the MAF sensor. Refer to EC-231, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace mass air flow sensor. Refer to EM-27, "Exploded View".

Component Inspection

INFOID:0000000011461529

1. CHECK MASS AIR FLOW SENSOR-I

(II) With CONSULT

- Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode of "ENGINE".
- 5. Select "MAS A/F SE-B1" and check indication.

Monitor item	Condition	MAS A/F SE-B1
MAS A/F SE-B1	Ignition switch ON (Engine stopped.)	Approx. 0.4 V
	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
	Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

- Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the voltage between ECM harness connector and ground.

ECM				
Connector	+	_	Condition	Voltage
Connector	Terminal			
			Ignition switch ON (Engine stopped.)	Approx. 0.4 V
F25	13 9	۵	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
1 20		2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V	
			Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

P0102, P0103 MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> INSPECTION END

NO >> GO TO 2.

2.check for the cause of uneven air flow through mass air flow sensor

Turn ignition switch OFF.

2. Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.

Crushed air ducts

- Malfunctioning seal of air cleaner element

- Uneven dirt of air cleaner element

Intake valve deposits

- Improper specification of intake air system parts

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 3.

3. CHECK MASS AIR FLOW SENSOR-II

(P)With CONSULT

1. Repair or replace malfunctioning part.

2. Start engine and warm it up to normal operating temperature.

3. Connect CONSULT and select "DATA MONITOR" mode of "ENGINE".

4. Select "MAS A/F SE-B1" and check indication.

Monitor item	Condition	MAS A/F SE-B1
	Ignition switch ON (Engine stopped.)	Approx. 0.4 V
MAS A/F SE-B1	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
MAS AVP SE-DI	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
	Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Repair or replace malfunctioning part.

2. Start engine and warm it up to normal operating temperature.

3. Check the voltage between ECM harness connector and ground.

	ECM			
Connector	+	_	Condition	Voltage
Connector	Terminal			
			Ignition switch ON (Engine stopped.)	Approx. 0.4 V
F25	42	13 9	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
FZS	13		2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
			Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4. CHECK MASS AIR FLOW SENSOR-III

(P)With CONSULT

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector and reconnect it again.

EC

Α

Е

D

G

M

Ν

0

P0102, P0103 MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode of "ENGINE".
- 5. Select "MAS A/F SE-B1" and check indication.

Monitor item	Condition	MAS A/F SE-B1
	Ignition switch ON (Engine stopped.)	Approx. 0.4 V
MAS A/F SE-B1	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
MAS AF SE-BT	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
	Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

⋈Without CONSULT

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector and reconnect it again.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the voltage between ECM harness connector and ground.

ECM				
Connector	+	_	Condition	Voltage
Connector	Terr	ninal		
			Ignition switch ON (Engine stopped.)	Approx. 0.4 V
F25	13	9	Idle (Engine is warmed-up to normal operating temperature.)	0.9 - 1.2 V
F25	13	13	2,500 rpm (Engine is warmed-up to normal operating temperature.)	1.5 - 2.0 V
			Idle to about 4,000 rpm	0.9 - 1.2 V to Approx. 2.4 V*

^{*:} Check for linear voltage rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Clean or replace mass air flow sensor. Refer to EM-27, "Exploded View".

P0111 IAT SENSOR 1

DTC Logic INFOID:0000000011461530

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0111	IAT SENSOR 1 B1 [Intake air temperature (IAT) sensor 1 circuit range/performance]	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor 1, IAT sensor 2, ECT sensor, FTT sensor, and EOT sensor) shows that the voltage signal of the IAT sensor 1 is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the IAT sensor 1 circuit) IAT sensor 1

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 3.

NO >> GO TO 2.

2 PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-240, "Component Function Check".

Use the component function check to check the overall function of the IAT sensor 1 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-240, "Diagnosis Procedure".

3.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 60 minutes.
- Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

3. Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

EC-239 Revision: 2014 October 2015 JUKE

Α

EC

D

Е

N

P0111 IAT SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-240, "Diagnosis Procedure".

NO >> INSPECTION END

Component Function Check

INFOID:0000000011461531

1.CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- Check resistance between mass air flow sensor terminals as follows.

Mass air flow sensor + - Terminal		Condition		Resistance (kΩ)					
					1 2		Temperature [°C (°F)]	25 (77)	1.800 – 2.200

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to EC-240, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461532

1. CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR 1

Check intake air temperature sensor 1. Refer to EC-240, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded View.

Component Inspection

INFOID:0000000011461533

1. CHECK INTAKE AIR TEMPERATURE SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- Check resistance between mass air flow sensor terminals as per the following.

Mass air f	low sensor	Condition		
+	_			Resistance ($k\Omega$)
Terminals				
1	2	Temperature [°C (°F)]	25 (77)	1.800 - 2.200

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded View".

P0112, P0113 IAT SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0112, P0113 IAT SENSOR 1

DTC Logic INFOID:0000000011461534

DTC DETECTION LOGIC

5.052.	2011011 20010			
DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	С

IAT SEN/CIRCUIT- B1 An excessively low voltage from the intake air (Intake air temperature P0112 · Harness or connectors temperature sensor 1 is sent to ECM. sensor 1 circuit low input) (Intake air temperature sensor 1 circuit is open or shorted.) IAT SEN/CIRCUIT- B1 An excessively high voltage from the intake air · Intake air temperature sensor 1 P0113 (Intake air temperature temperature sensor 1 is sent to ECM. sensor 1 circuit high input)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2 Perform DTC Confirmation Procedure

- Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-241, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

${f 1}$.CHECK INTAKE AIR TEMPERATURE SENSOR 1 POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect mass air flow sensor (with intake air temperature sensor 1) harness connector.
- Turn ignition switch ON.
- Check the voltage between mass air flow sensor harness connector and ground.

	+		Voltage	
MAF sensor Connector Terminal		_	Voltage (Approx.)	
			(11 /	
F4 2		Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK INTAKE AIR TEMPERATURE SENSOR 1 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between mass air flow sensor harness connector and ECM harness connector.

EC-241 Revision: 2014 October 2015 JUKE

Α

Е

D

F

INFOID:0000000011461535

N

+ MAF sensor		- ECM		Continuity
F4	2	F25	17	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK INTAKE AIR TEMPERATURE SENSOR 1 GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between mass air flow sensor harness connector and ECM harness connector.

+ MAF sensor			_	
		ECM		Continuity
Connector	Terminal	Connector Terminal		
F4	1	F25	9	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO

NO >> Repair or replace error-detected parts.

4. CHECK INTAKE AIR TEMPERATURE SENSOR 1

Check the intake air temperature sensor 1. Refer to EC-242, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to <u>EM-27</u>, "<u>Exploded View</u>".

Component Inspection

INFOID:0000000011461536

1.CHECK INTAKE AIR TEMPERATURE SENSOR 1

- Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- 3. Check resistance between mass air flow sensor terminals as per the following.

Mass air f	low sensor			
+	_	Condition		Resistance ($k\Omega$)
Terminals				
1	2	Temperature [°C (°F)]	25 (77)	1.800 - 2.200

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded View".

P0116 ECT SENSOR

DTC Logic INFOID:0000000011461537

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0116	ECT SEN/CIRC [Engine coolant temperature (ECT) sensor circuit range/per- formance]	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor 1, IAT sensor 2, ECT sensor, FTT sensor, and EOT sensor) shows that the voltage signal of the ECT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the ECT sensor circuit) ECT sensor

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 3.

NO >> GO TO 2.

2 PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-244, "Component Function Check".

Use the component function check to check the overall function of the ECT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-244, "Diagnosis Procedure".

3.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 60 minutes.
- 2. Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

3. Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

Start engine and let it idle for 20 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

EC-243 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

N

< DTC/CIRCUIT DIAGNOSIS >

5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-244, "Diagnosis Procedure".

NO >> INSPECTION END

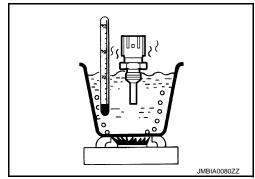
Component Function Check

INFOID:0000000011461538

1. CHECK ENGINE COOLANT TEMPERATURE (ECT) SENSOR

- 1. Turn ignition switch OFF.
- Disconnect ECT sensor harness connector.
- Remove ECT sensor. Refer to <u>CO-24, "Exploded View"</u>.
- 4. Check resistance between ECT sensor terminals by heating with hot water as shown in the figure.

ECT :	sensor			
+	_	Condition		Resistance ($k\Omega$)
Terminal				
		T 1 500	20 (68)	2.37 – 2.63
1	1 2 Temperature [°C (°F)]	50 (122)	0.68 - 1.00	
	(17)]		90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to <u>EC-244, "Diagnosis Procedure"</u>.

Diagnosis Procedure

INFOID:0000000011461539

1. CHECK ENGINE COOLANT TEMPERATURE (ECT) SENSOR

Check ECT sensor. Refer to EC-244, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace ECT sensor. Refer to CO-24, "Exploded View".

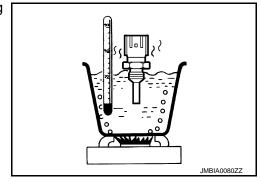
Component Inspection

INFOID:0000000011461540

1.CHECK ENGINE COOLANT TEMPERATURE (ECT) SENSOR

- 1. Turn ignition switch OFF.
- 2. Disconnect ECT sensor harness connector.
- 3. Remove ECT sensor.
- 4. Check resistance between ECT sensor terminals by heating with hot water as shown in the figure.

ECT s	ECT sensor			Resistance	
+	_	Condition		(kΩ)	
Terminal				,	
		Temperature [°C (°F)]	20 (68)	2.37 - 2.63	
1	2		50 (122)	0.68 - 1.00	
		90 (194)		0.236 - 0.260	



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to EM-99, "Exploded View".

P0117, P0118 ECT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

Н

N

Р

INFOID:0000000011461542

P0117, P0118 ECT SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause	
P0117	ECT SEN/CIRC (Engine coolant temperature sensor circuit low input)	An excessively low voltage from the engine coolant temperature sensor is sent to ECM.	Harness or connectors (Engine coelent temporature concer eight)	
P0118	ECT SEN/CIRC (Engine coolant tempera- ture sensor circuit high in- put)	An excessively high voltage from the engine coolant temperature sensor is sent to ECM.	 (Engine coolant temperature sensor circuit is open or shorted.) Engine coolant temperature sensor 	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to <u>EC-245</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect engine coolant temperature (ECT) sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between ECT sensor harness connector and ground.

	+		\/oltogo	
ECT sensor		_	Voltage (Approx.)	
Connector Terminal			(11 /	
F28	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK ENGINE COOLANT TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between ECT sensor harness connector and ECM harness connector.

+		_		
ECT :	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F28	1	F25	14	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK ENGINE COOLANT TEMPERATURE SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between ECT sensor harness connector and ECM harness connector.

+			_	
ECT :	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F28	2	F25	10	Existed

4. Also check harness for short to ground to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK ENGINE COOLANT TEMPERATURE SENSOR

Check the engine coolant temperature sensor. Refer to EC-244, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace engine coolant temperature sensor. Refer to EM-99, "Exploded View".

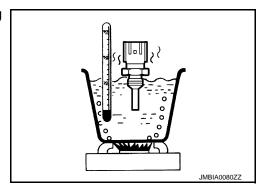
Component Inspection

INFOID:0000000011461543

1.CHECK ENGINE COOLANT TEMPERATURE (ECT) SENSOR

- Turn ignition switch OFF.
- Disconnect ECT sensor harness connector.
- 3. Remove ECT sensor.
- 4. Check resistance between ECT sensor terminals by heating with hot water as shown in the figure.

ECT :	sensor	Condition		Paristana		5
+	_			Resistance $(k\Omega)$		
Terr	minal			, ,		
			20 (68)	2.37 - 2.63		
1	2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00		
			90 (194)	0.236 - 0.260		



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to EM-99, "Exploded View".

P011C IAT SENSOR

DTC Logic INFOID:0000000011461544

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	
P011C	CAT/IAT CRRLTN B1 (Charge air temperature/Intake air temperature correlation)	 ECM detects a state that the temperature difference between intake air temperature sensor 1 and 2 remains 20°C (36°F) or less continuously for 5 seconds or more. ECM detects a state that the difference between the temperature of intake air temperature sensor 2 and its estimated temperature calculated by ECM from intake air temperature 1 and turbocharger boost sensor remains 106°C (191°F) or more continuously for 5 seconds or more. 	,	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2 .PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-247, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

${f 1}$.CHECK INTAKE AIR TEMPERATURE SENSOR 2

Check intake air temperature sensor 2. Refer to EC-248, "Component Inspection (Intake Air Temperature Sensor 2)".

Is the inspection result normal?

YES >> GO TO 2.

>> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to EM-32, NO "Exploded View".

2.CHECK INTAKE AIR TEMPERATURE SENSOR 1

Check intake air temperature sensor 1. Refer to EC-248, "Component Inspection (Intake Air Temperature Sensor 1)".

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded

EC-247 Revision: 2014 October 2015 JUKE

EC

Α

Е

Н

K

INFOID:0000000011461545

M

Ν

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

View".

P011C IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Component Inspection (Intake Air Temperature Sensor 1)

INFOID:0000000011461546

1. CHECK INTAKE AIR TEMPERATURE SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- 3. Check resistance between mass air flow sensor terminals as follows.

Mass air fle	ow sensor 1	Condition		
+	_			Resistance ($k\Omega$)
Terr	minal			
1	2	Temperature [°C (°F)]	25 (77)	1.80 – 2.20

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded View".

Component Inspection (Intake Air Temperature Sensor 2)

INFOID:0000000011461547

1. CHECK INTAKE AIR TEMPERATURE SENSOR 2

- 1. Turn ignition switch OFF.
- 2. Disconnect turbocharger boost sensor harness connector.
- 3. Check resistance between turbocharger boost sensor terminals as follows.

Turbocharge	r boost sensor	Condition		
+	_			Resistance ($k\Omega$)
Terr	minal			
3	4	Temperature [°C (°F)]	25 (77)	1.80 – 2.20

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to EM-32, "Exploded View".

P0122, P0123 TP SENSOR

DTC Logic INFOID:0000000011461548

DTC DETECTION LOGIC

NOTE:

If DTC P0122 or P0123 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-420, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0122	TP SEN 2/CIRC-B1 (Throttle position sensor 2 circuit low input)	An excessively low voltage from the TP sensor 2 is sent to ECM.	Harness or connectors (TP sensor 2 circuit is open or shorted.) Electric throttle control actuator (TP sensor 2)
P0123	TP SEN 2/CIRC-B1 (Throttle position sensor 2 circuit high input)	An excessively high voltage from the TP sensor 2 is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

>> Proceed to EC-249, "Diagnosis Procedure". YES

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK THROTTLE POSITION SENSOR 2 POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect electric throttle control actuator harness connector.
- Turn ignition switch ON.
- Check the voltage between electric throttle control actuator harness connector and ground.

	+		Valta va	
Electric throttle control actuator		_	Voltage (Approx.)	
Connector	Terminal		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
F29	F29 1		5 V	

Is the inspection result normal?

>> GO TO 3. YES

NO >> GO TO 2.

2 .CHECK THROTTLE POSITION SENSOR 2 POWER SUPPLY CIRCUIT

EC-249 Revision: 2014 October 2015 JUKE

EC

Α

D

F

Е

Н

M

INFOID:0000000011461549

Ν

Р

C

< DTC/CIRCUIT DIAGNOSIS >

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

	+	_		
	e control actu- tor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F29	1	F26	62	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE POSITION SENSOR 2 GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector

	+		_	
	e control actu- tor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	4	F26	74	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK THROTTLE POSITION SENSOR 2 INPUT SIGNAL CIRCUIT

Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

	+	-		
	e control actu- tor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	3	F26	76	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5}.$ CHECK THROTTLE POSITION SENSOR

Check the throttle position sensor. Refer to EC-250, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace electric throttle control actuator. Refer to EM-29. "Exploded View".

Component Inspection

INFOID:0000000011461550

1.CHECK THROTTLE POSITION SENSOR

P0122, P0123 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Perform "Throttle Valve Closed Position Learning". Refer to EC-157, "Work Procedure".
- 4. Turn ignition switch ON.
- 5. Set selector lever to D (CVT) or 1st (M/T) position.
- 6. Check the voltage between ECM harness connector terminals as per the following conditions.

ECM					
Connector	+	_	Condition		Voltage
	Terminal				
F26	75	74	Accelerator pedal	Fully released	More than 0.36V
				Fully depressed	Less than 4.75V
	76			Fully released	Less than 4.75V
				Fully depressed	More than 0.36V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

EC

Α

С

D

Е

F

G

Н

K

L

M

Ν

0

P0125 ECT SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0125 is displayed with P0116, first perform the trouble diagnosis for DTC P0116. Refer to <u>EC-243</u>, "DTC Logic".
- If DTC P0125 is displayed with P0117 or P0118, first perform the trouble diagnosis for DTC P0117 or P0118. Refer to <u>EC-245</u>, "<u>DTC Logic"</u>.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0125	ECT SENSOR (Insufficient engine coolant temperature for closed loop fuel control)	 Voltage sent to ECM from the sensor is not practical, even when some time has passed after starting the engine. Engine coolant temperature is insufficient for closed loop fuel control. 	Harness or connectors (High resistance in the circuit) Engine coolant temperature sensor Thermostat

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.CHECK ENGINE COOLANT TEMPERATURE SENSOR FUNCTION

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check that "COOLAN TEMP/S" is above 10°C (50°F).

With GST

Follow the procedure "With CONSULT" above.

Is it above 5°C (41°F)?

YES >> INSPECTION END

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Start engine and run it for 65 minutes at idle speed.
- 2. Check 1st tip DTC.

If "COOLAN TEMP/S" indication increases to more than 10°C (50°F) within 65 minutes, stop engine because the test result will be OK.

CAUTION:

Be careful not to overheat engine.

With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-253, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461552

Α

EC

D

Е

F

Н

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR

Check the engine coolant temperature sensor. Refer to EC-253, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace engine coolant temperature sensor. Refer to CO-24, "Exploded View".

2.CHECK THERMOSTAT OPERATION

When the engine is cold [lower than 70°C (158°F)] condition, grasp lower radiator hose and confirm the engine coolant does not flow.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace thermostat. Refer to <u>CO-22. "Removal and Installation"</u>.

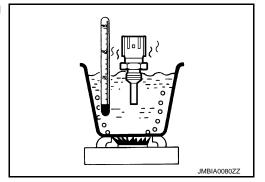
Component Inspection

INFOID:0000000011461553

${\bf 1.} {\sf CHECK\ ENGINE\ COOLANT\ TEMPERATURE\ (ECT)\ SENSOR}$

- 1. Turn ignition switch OFF.
- 2. Disconnect ECT sensor harness connector.
- Remove ECT sensor.
- 4. Check resistance between ECT sensor terminals by heating with hot water as shown in the figure.

ECT sensor				Desire
+	-	Condition		Resistance $(k\Omega)$
Terminal				()
		Temperature [°C (°F)]	20 (68)	2.37 - 2.63
1	2		50 (122)	0.68 - 1.00
			90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to EM-99, "Exploded View".

Κ

Ν

M

0

Р

Revision: 2014 October EC-253 2015 JUKE

P0127 IAT SENSOR

DTC Logic INFOID:000000011461554

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0127	IAT SENSOR-B1 (Intake air temperature too high)	Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signal from engine coolant temperature sensor.	Harness or connectors (Intake air temperature sensor 1 circuit is open or shorted) Intake air temperature sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

This test may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Wait until engine coolant temperature is less than 96°C (205°F)
- Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check the engine coolant temperature.
- If the engine coolant temperature is not less than 96°C (205°F), turn ignition switch OFF and cool down
 engine.

NOTE:

Perform the following steps before engine coolant temperature is above 96°C (205°F).

- 2. Turn ignition switch ON.
- 3. Select "DATA MONITOR" mode of "ENGINE" using CONSULT
- 4. Start engine.
- 5. Hold vehicle speed at more than 70 km/h (43 MPH) for 100 consecutive seconds.

CAUTION:

Always drive vehicle at a safe speed.

6. Check 1st trip DTC.

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-254, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461555

1. CHECK INTAKE AIR TEMPERATURE SENSOR 1

Check the intake air temperature sensor 1. Refer to <a>EC-255, <a>"Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

P0127 IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to <u>EM-27, "Exploded View"</u>.

Component Inspection

INFOID:0000000011461556

1. CHECK INTAKE AIR TEMPERATURE SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- 3. Check resistance between mass air flow sensor terminals as per the following.

	Mass air flow sensor				
	+	_	Condition		Resistance ($k\Omega$)
Ī	Terminals				
Ī	1	2	Temperature [°C (°F)] 25 (77)		1.800 - 2.200

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded View".

Revision: 2014 October EC-255 2015 JUKE

D

Α

EC

C

Е

Н

I

L

K

 \mathbb{N}

Ν

O

Р

[MR FOR NISMO RS MODELS]

P0128 THERMOSTAT FUNCTION

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0128 is displayed with DTC P0300, P0301, P0302, P0303 or P0304, first perform the trouble diagnosis for P0300, P0301, P0302, P0303, P0304. Refer to EC-331, "DTC Logic".

Engine coolant temperature has not risen enough to open the thermostat even though the engine has run long enough.

This is due to a leak in the seal or the thermostat being stuck open.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0128	THERMSTAT FNCTN [Coolant thermostat (coolant temperature below thermostat regulating temperature)]	The engine coolant temperature does not reach to specified temperature even though the engine has run long enough.	Thermostat Leakage from sealing portion of thermostat Engine coolant temperature sensor

DTC CONFIRMATION PROCEDURE

NOTE:

Never refuel before and during the following procedure.

1.PRECONDITIONING-I

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PRECONDITIONING-II

(P)With CONSULT

- 1. Turn ignition switch ON.
- 2. Check the following conditions:

Ambient temperature	-10°C (14°F) or more
A/C switch	OFF
Blower fan switch	OFF

- 3. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check the following conditions:

Is the condition satisfied?

YES >> GO TO 3.

NO >> 1. Satisfy the condition.

2. GO TO 3.

3.perform dtc confirmation procedure-i

(P)With CONSULT

- 1. Start engine.
- 2. Drive the vehicle until the following condition is satisfied.

CALITION

Always drive vehicle at safe speed.

- STEP 1

P0128 THERMOSTAT FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

Drive the vehicle under the conditions instructed below until the difference between "COOLAN TEMP/S" and "FUEL T/TMP SE" becomes at least 23°C (41°F).

COOLAN TEMP/S	65°C (149°F) or less	
FUEL T/TMP SE	Less than the value calculated by subtracting 23°C (41°F) from "COOLAN TEMP/S".*	EC
*: Example		С
COOLAN TEMP/S	FUEL T/TMP SE	
70°C (158°F)	47°C (117°F) or less	D
65°C (149°F)	42°C (108°F) or less	D
60°C (140°F)	37°C (99°F) or less	
T/TMP SE" maintained at NOTE :	(32 MPH) or more with the difference between "COOLAN TEMP/S" 23°C (41°F) or more. as steady as possible during cruising.	" and "FUEL F
- STEP 3	as steady as possible during craising.	
NOTE:	(32 MPH) or more until "COOLAN TEMP/S" increases by 6°C (11°F as steady as possible during cruising.	-). G
Is the condition satisfied?	ac cloudy do possible dailing claiming.	
YES >> GO TO 4.		Н
NO >> GO TO 1.		
4.PERFORM DTC CONFIRM	MATION PROCEDURE-II	
	following condition is satisfied.	J
COOLAN TEMP/S	65°C (149°F) or more	
CAUTION: Always drive vehicle at s 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25	safe speed. 57, "Diagnosis Procedure".	K
CAUTION: Always drive vehicle at s 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION EN	safe speed. 57, "Diagnosis Procedure".	K
CAUTION: Always drive vehicle at s 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25	safe speed. 57, "Diagnosis Procedure". D	FOID:0000000011461558
CAUTION: Always drive vehicle at s 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION END Diagnosis Procedure	safe speed. 57, "Diagnosis Procedure". D	FOID:000000011461558
CAUTION: Always drive vehicle at s 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION ENI Diagnosis Procedure 1.CHECK ENGINE COOLAN	safe speed. 57, "Diagnosis Procedure". D IT TEMPERATURE SENSOR perature sensor. Refer to EC-257, "Component Inspection".	FOID:000000011461558
CAUTION: Always drive vehicle at section 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION ENION Diagnosis Procedure 1.CHECK ENGINE COOLAN Check the engine coolant temple the inspection result normal YES >> GO TO 2.	safe speed. 57, "Diagnosis Procedure". D IT TEMPERATURE SENSOR perature sensor. Refer to EC-257, "Component Inspection". 12	FOID:0000000011461558
CAUTION: Always drive vehicle at section 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION ENION Diagnosis Procedure 1.CHECK ENGINE COOLAN Check the engine coolant temple the inspection result normal YES >> GO TO 2.	safe speed. 57, "Diagnosis Procedure". D IT TEMPERATURE SENSOR perature sensor. Refer to EC-257, "Component Inspection".	FOID:0000000011461558
CAUTION: Always drive vehicle at section 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLAN Check the engine coolant temple the inspection result normal YES >> GO TO 2. NO >> Replace engine coolant Check the thermostat. Refer to	safe speed. 57, "Diagnosis Procedure". D IT TEMPERATURE SENSOR perature sensor. Refer to EC-257, "Component Inspection". 12 oolant temperature sensor. Refer to CO-24, "Exploded View".	L FOID:000000011461558 M N
CAUTION: Always drive vehicle at section 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLAN Check the engine coolant temple the inspection result normal YES >> GO TO 2. NO >> Replace engine coolant Check the thermostat. Refer to 1st the inspection result normal	safe speed. 57, "Diagnosis Procedure". D IT TEMPERATURE SENSOR perature sensor. Refer to EC-257, "Component Inspection". 12 oolant temperature sensor. Refer to CO-24, "Exploded View". oo CO-23, "Inspection". 12	L FOID:0000000011461558
CAUTION: Always drive vehicle at section 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLAN Check the engine coolant temple the inspection result normal YES >> GO TO 2. NO >> Replace engine coolant temple the inspection result normal YES >> INSPECTION END Check the thermostat. Refer to the inspection result normal YES >> INSPECTION END Always drive vehicle at section is a section in the inspection result normal YES >> INSPECTION END	safe speed. 57, "Diagnosis Procedure". D IT TEMPERATURE SENSOR perature sensor. Refer to EC-257, "Component Inspection". 12 oolant temperature sensor. Refer to CO-24, "Exploded View". oo CO-23, "Inspection". 12	L FOID:000000011461558 M N
CAUTION: Always drive vehicle at section 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-25 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLAN Check the engine coolant temple the inspection result normal YES >> GO TO 2. NO >> Replace engine coolant temple the inspection result normal YES -> INSPECTION END Section result normal YES -> INSPECTION END	safe speed. 57, "Diagnosis Procedure". D IT TEMPERATURE SENSOR perature sensor. Refer to EC-257, "Component Inspection". 12 oolant temperature sensor. Refer to CO-24, "Exploded View". O CO-23, "Inspection". 12 D at. Refer to CO-22, "Removal and Installation".	L FOID:000000011461558 M N

Revision: 2014 October EC-257 2015 JUKE

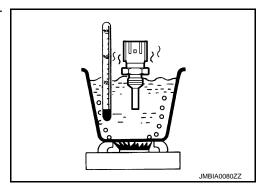
P0128 THERMOSTAT FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- 2. Disconnect engine coolant temperature sensor harness connector.
- 3. Remove engine coolant temperature sensor.
- 4. Check resistance between engine coolant temperature sensor terminals by heating with hot water as shown in the figure.

Engine coolant tem- perature sensor		0 !!!		5 1 1 (1.5)
+	_	Condition		Resistance (k Ω)
Terminal				
		T	20 (68)	2.37 - 2.63
1	2	Temperature [°C (°F)] 50 (122)	0.68 - 1.00	
		(- /1	90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor. Refer to CO-24, "Exploded View".

[MR FOR NISMO RS MODELS]

P0130 A/F SENSOR 1

DTC Logic INFOID:0000000011461560

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal fluctuates according to fuel feedback control.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition		Possible Cause
A/F SENSOR1 (B1) [Air fuel ratio (A/F) sen circuit]	A/F SENSOR1 (B1) [Air fuel ratio (A/F) sensor 1	A)	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly in the range other than approx. 2.2 V.	Harness or connectors (A/F sensor 1 circuit is open or shorted.)
	` ,	В)	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 2.2 V.	• A/F sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Let it idle for 2 minutes.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-260, "Diagnosis Procedure".

NO-1 >> With CONSULT: GO TO 3.

NO-2 >> Without CONSULT: GO TO 7.

3.CHECK AIR FUEL RATIO (A/F) SENSOR 1 FUNCTION

- Select "A/F SEN1 (B1)" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Check "A/F SEN1 (B1)" indication.

Does the indication fluctuates around 2.2 V?

YES >> GO TO 4.

NO >> Proceed to EC-260, "Diagnosis Procedure".

f 4.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-I

- Select "A/F SEN1 (B1) P1276" of "A/F SEN1" in "DTC WORK SUPPORT" mode of "ENGINE" using CON-SULT.
- Touch "START".
- 3. When the following conditions are met, "TESTING" will be displayed on the CONSULT screen.

ENG SPEED	1,150 - 3,200 rpm
VHCL SPEED SE	More than 64 km/h (40 mph)
B/FUEL SCHDL	1.0 - 8.0 msec
Selector lever	D position (CVT) 5th position (M/T)

EC-259 Revision: 2014 October 2015 JUKE

EC

Α

C

D

Е

F

Н

M

N

Р

< DTC/CIRCUIT DIAGNOSIS >

If "TESTING" is not displayed after 20 seconds, retry from step 2.

CAUTION:

Always drive vehicle at a safe speed.

Is "TESTING" displayed on CONSULT screen?

YES >> GO TO 5.

NO >> Check A/F sensor 1 function again. GO TO 3.

 ${f 5.}$ PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-II

Release accelerator pedal fully.

NOTE:

Never apply brake during releasing the accelerator pedal.

Which does "TESTING" change to?

COMPLETED>>GO TO 6.

OUT OF CONDITION>>Retry DTC CONFIRMATION PROCEDURE. GO TO 4.

 $oldsymbol{6}$.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-III

Touch "SELF-DIAG RESULT"

Which is displayed on CONSULT screen?

YES >> INSPECTION END

NO >> Proceed to EC-260, "Diagnosis Procedure".

7 .PERFORM COMPONENT FUNCTION CHECK FOR MALFUNCTION B

Perform Component Function Check. Refer to EC-260, "Component Function Check".

NOTE:

Use component function check to check the overall function of the A/F sensor 1 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-260, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011461561

1.PERFORM COMPONENT FUNCTION CHECK

With GST

- 1. Start engine and warm it up to normal operating temperature.
- 2. Drive the vehicle at a speed of 80 km/h (50 MPH) for a few minutes in the suitable gear position.
- Shift the selector lever to the D position (CVT) or 5th position (M/T), then release the accelerator pedal fully until the vehicle speed decreases to 50 km/h (31 MPH).

CAUTION:

Always drive vehicle at a safe speed.

NOTÉ:

Never apply brake during releasing the accelerator pedal.

- 4. Repeat steps 2 to 3 for five times.
- 5. Stop the vehicle and turn ignition switch OFF.
- 6. Wait at least 10 seconds and restart engine.
- 7. Repeat steps 2 to 3 for five times.
- Stop the vehicle.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-260, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461562

1. CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect A/F sensor 1 harness connector.
- 3. Turn ignition switch ON.

P0130 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

4. Check the voltage between A/F sensor 1 harness connector and ground.

	+		
A/F se	ensor 1	_	Voltage
Connector	Terminal		
F70 4		Ground	Battery voltage

EC

D

Е

F

M

Ν

Р

Α

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and IPDM E/R harness connector.

	+			
A/F se	ensor 1	IPDM E/R		Continuity
Connector Terminal		Connector	Terminal	
F70 4		E14	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check a/f sensor 1 input signal circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+		-		
A/F sensor 1		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F70	1	F25	21	Existed
F70	2	1 23	25	LAISIEU

4. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

	+			
A/F se	ensor 1	_	Continuity	
Connector	Terminal			
F70	1	Ground	Not existed	
F70	2	Glound	Not existed	

	+			
E	CM	_	Continuity	
Connector	Terminal			
F25	21	Ground	Not existed	
123	25	Glound	NOT EXISTED	

Also check harness for short to power.

Is the inspection result normal?

Revision: 2014 October EC-261 2015 JUKE

P0130 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1. Refer to EM-43, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

P0131 A/F SENSOR 1

DTC Logic INFOID:0000000011461563

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal is not inordinately low.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P0131	A/F SENSOR1 (B1) [Air fuel ratio (A/F) sensor 1 circuit low voltage]	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 0 V.	Harness or connectors (A/F sensor 1 circuit is open or shorted.) A/F sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V at idle.

>> GO TO 2.

2.CHECK A/F SENSOR FUNCTION

(P)With CONSULT

- Start engine and warm it up to normal operating temperature.
- Select "A/F SEN1 (B1)" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "A/F SEN1 (B1)" indication.

Follow the procedure "With CONSULT" above.

Is the indication constantly approx. 0 V?

YES >> Proceed to EC-264, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- Turn ignition switch OFF, wait at least 10 seconds and then restart engine.
- Drive and accelerate vehicle to more than 40 km/h (25 MPH) within 20 seconds after restarting engine. **CAUTION:**

Always drive vehicle at a safe speed.

3. Maintain the following conditions for about 20 consecutive seconds.

ENG SPEED	1,000 - 3,200 rpm
VHCL SPEED SE	More than 40 km/h (25 mph)
B/FUEL SCHDL	1.5 - 9.0 msec
Selector lever	Suitable position

NOTE:

- Keep the accelerator pedal as steady as possible during the cruising.
- If this procedure is not completed within 1 minute after restarting engine at step 1, return to step
- Check 1st trip DTC.

EC-263 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

Ν

Р

P0131 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-264, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461564

1. CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect A/F sensor 1 harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between A/F sensor 1 harness connector and ground.

_	,	+		
A/F sensor 1		_	Voltage	
	Connector Terminal			
	F70	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and IPDM E/R harness connector.

+		_		
A/F se	ensor 1	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F70	4	E14	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check a/f sensor 1 input signal circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+		_		
A/F se	ensor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F70	1	F25	21	Existed
	2	123	25	LAISIEU

4. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

P0131 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >				[MR FOR NISMO RS MODELS]
-	+			
A/F se	ensor 1	_	Continuity	
Connector	Terminal			
F70	1	Ground	Not existed	
F70	2	Giodila	Not existed	
-	+			
EC	CM	_	Continuity	
Connector	Terminal			
F25	21	Ground	Not existed	
F25	25	Giodila	Not existed	
5. Also check	harness for sh	nort to power.		
Is the inspection	n result norma	<u>l?</u>		
YES >> GO				
	•	error-detected	parts.	
4.CHECK INTI	ERMITTENT I	NCIDENT		
Perform GI-44,	"Intermittent Ir	ncident".		
Is the inspection	n result norma	l?		

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1. Refer to EM-43, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

K

L

Α

EC

D

Е

F

Н

Ν

0

Р

P0132 A/F SENSOR 1

DTC Logic INFOID:000000011461565

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal is not inordinately high.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P0132	A/F SENSOR1 (B1) [Air fuel ratio (A/F) sensor 1 circuit high voltage]	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 5 V.	Harness or connectors (A/F sensor 1 circuit is open or shorted.) A/F sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V at idle.

>> GO TO 2.

2.CHECK A/F SENSOR FUNCTION

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Select "A/F SEN1 (B1)" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "A/F SEN1 (B1)" indication.

With GST

Follow the procedure "With CONSULT" above.

Is the indication constantly approx. 5 V?

YES >> Proceed to <u>EC-267</u>, "<u>Diagnosis Procedure</u>".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Turn ignition switch OFF, wait at least 10 seconds and then restart engine.
- Drive and accelerate vehicle to more than 40 km/h (25 MPH) within 20 seconds after restarting engine. CAUTION:

Always drive vehicle at a safe speed.

3. Maintain the following conditions for about 20 consecutive seconds.

ENG SPEED	1,000 - 3,200 rpm
VHCL SPEED SE	More than 40 km/h (25 mph)
B/FUEL SCHDL	1.5 - 9.0 msec
Selector lever	Suitable position

NOTE:

- Keep the accelerator pedal as steady as possible during the cruising.
- If this procedure is not completed within 1 minute after restarting engine at step 1, return to step 1.
- 4. Check 1st trip DTC.

With GST

P0132 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Follow the procedure "With CONSULT" above.

Is 1st trip DTC is detected?

YES >> Proceed to EC-267, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461566

Α

D

Е

Н

Ν

1.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect A/F sensor 1 harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between A/F sensor 1 harness connector and ground.

	+			
A/F se	ensor 1	_	Voltage	
Connector	Terminal			
F70	4	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and IPDM E/R harness connector.

+			_	
A/F se	ensor 1	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F70	4	E14	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check a/f sensor 1 input signal circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

	+	_		
A/F se	ensor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F70	1	F25	21	Existed
170	2	1 23	25	LAISIEU

 Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

	+			
A/F se	ensor 1	_	Continuity	
Connector	Terminal			
F70	1	Ground	Not existed	
170	2	Glound	Not existed	
	+			
E	CM	_	Continuity	
Connector	Terminal			
F25	21	Ground	Not existed	
1 23	25	Giodila	NOT EXISTED	

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1. Refer to EM-43, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

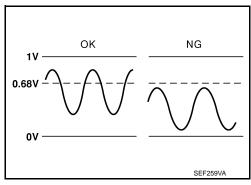
>> INSPECTION END

P0137 H02S2

DTC Logic

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst (manifold) causes the longer switching time. To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the maximum voltage of the sensor is sufficiently high during the various driving condition such as fuel-cut.



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0137	HO2S2 (B1) (Heated oxygen sensor 2 circuit low voltage)	The maximum voltage from the heated oxygen sensor 2 is not reached to the specified voltage.	Harness or connectors (Heated oxygen sensor 2 circuit is open or shorted) Heated oxygen sensor 2 Fuel pressure Fuel injector Intake air leaks

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 5.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30°C (32 to 86°F).

>> GO TO 3.

3.perform dtc confirmation procedure

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 6. Make sure that "COOLAN TEMP/S" indicates more than 70°C (158°F).

 If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches 70°C (158°F).
- 7. Open engine hood.
- 8. Select "HO2S2 (B1) P1147" of "HO2S2" in "DTC WORK SUPPORT" mode of "ENGINE" using CONSULT.

Revision: 2014 October EC-269 2015 JUKE

EC

Α

D

Е

F

G

Н

.1

K

M

Ν

1.4

Р

< DTC/CIRCUIT DIAGNOSIS >

9. Follow the instruction of CONSULT.

NOTE:

It will take at most 10 minutes until "COMPLETED" is displayed.

10. Touch "SELF-DIAG RESULT".

Which is displayed on CONSULT screen?

OK >> INSPECTION END

NG >> Proceed to <u>EC-271</u>, "<u>Diagnosis Procedure</u>".

CAN NOT BE DIAGNOSED>>GO TO 4.

f 4.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

- 1. Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle).
- Perform DTC CONFIRMATION PROCEDURE again.

>> GO TO 3.

5. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-270, "Component Function Check".

NOTE:

Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-271, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011461568

1.PERFORM COMPONENT FUNCTION CHECK-I

Without CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 4. Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

	ECM				
Connector	+	-	Condition Voltage		
Connector	Connector Ter				
F25	29 33		Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.68 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM				
Connector	+	_	Condition	Voltage	
Connector	Terr	minal			
F25	F25 29 33		Keeping engine speed at idle for 10 minutes	The voltage should be above 0.68 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

EC

Е

Н

M

N

INFOID:0000000011461569

3. PERFORM COMPONENT FUNCTION CHECK-III

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM				
Connector	Connector + -		Condition	Voltage	
Terminal		minal			
F25	29	Coasting from 80 km/h (50 MPH 33 D position (CVT), 4th gear posit (M/T)		The voltage should be above 0.68 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-271</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

1. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

- 1. Clear the mixture ratio self-learning value. Refer to EC-161, "Work Procedure".
- Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171. Refer to <u>EC-293, "DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK HO2S2 GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
- 3. Disconnect ECM harness connector.
- 4. Check the continuity between HO2S2 harness connector and ECM harness connector.

+		-		
НО	282	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F69	1	F25	33	Existed

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HO2S2 INPUT SIGNAL CIRCUIT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

+		ſ		
НО	2S2	ECM		Continuity
Connector	Terminal	Connector Terminal		
F69	4	F25	29	Existed

Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

+ HO2S2		_	Continuity
Connector			
F69	4	Ground	Not existed

	+		
E	СМ	_	Continuity
Connector Terminal			
F25	29	Ground	Not existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK HEATED OXYGEN SENSOR 2

Check the heated oxygen sensor 2. Refer to EC-272, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 5.

${f 5.}$ REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2.

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

INFOID:0000000011461570

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

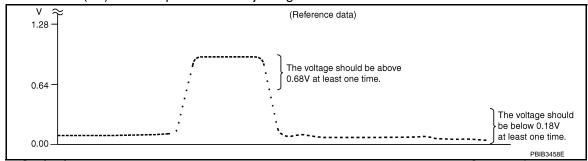
YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK HEATED OXYGEN SENSOR 2

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- Select "FUEL INJECTION" in "ACTIVE TEST" mode of "ENGINE" using CONSULT, and select "HO2S2 (B1)" as the monitor item with CONSULT.
- 7. Check "HO2S2 (B1)" at idle speed when adjusting "FUEL INJECTION" to ± 25%.



"HO2S2 (B1)" should be above 0.68 V at least once when the "FUEL INJECTION" is + 25%. "HO2S2 (B1)" should be below 0.18 V at least once when the "FUEL INJECTION" is – 25%.

P0137 H02S2

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

ls	the	inspection	result	normal?
<u> </u>	1110	HIOPOULOH	1 COUIT	HOHHUI.

YES >> INSPECTION END

NO >> GO TO 6.

3.check heated oxygen sensor 2-1

®Without CONSULT

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 4. Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

ECM + -			Voltage		
		Condition			
Connector	Terminal				
F25	29	33	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4. CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM	M		
Connector	Connector + - Terminal		Condition	Voltage
Connector				
F25	29	33	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

${f 5}$.CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM			
Connector	Connector + - Terminal		Condition	Voltage
Connector				
F25	29	33	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

6. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View". **CAUTION:**

EC-273 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Ν

Р

P0137 H02S2

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Α

EC

C

D

Е

F

Н

K

L

M

Ν

P0138 H02S2

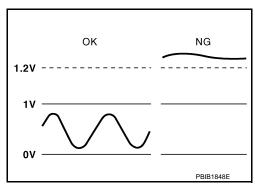
DTC Logic (INFOID:0000000011461571

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst (manifold) causes the longer switching time.

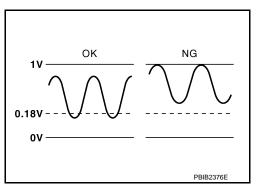
MALFUNCTION A

To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the voltage is unusually high during the various driving condition such as fuel-cut.



MALFUNCTION B

To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the minimum voltage of sensor is sufficiently low during the various driving condition such as fuel-cut.



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition		Possible cause
	HO363 (P4)	A)	An excessively high voltage from the sensor is sent to ECM.	Harness or connectors (The sensor circuit is open or shorted) Heated oxygen sensor 2
P0138 HO2S2 (B1) (Heated oxygen sen circuit high voltage)	(Heated oxygen sensor 2	B)	The minimum voltage from the sensor is not reached to the specified voltage.	Harness or connectors (The sensor circuit is open or shorted) Heated oxygen sensor 2 Fuel pressure Fuel injector

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure for malfunction a

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 4. Let engine idle for 2 minutes.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-277</u>, "<u>Diagnosis Procedure</u>".

NO-1 >> With CONSULT: GO TO 3.

NO-2 >> Without CONSULT: GO TO 5.

$3.\mathsf{PERFORM}$ DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B

NOTE:

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30°C (32 to 86°F).

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Make sure that "COOLAN TEMP/S" indication is more than 70°C (158°F).

If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches 70°C (158°F).

- 7. Open engine hood.
- 8. Select "HO2S2 (B1) P1146" of "HO2S2" in "DTC WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 9. Follow the instruction of CONSULT.

NOTE:

It will take at most 10 minutes until "COMPLETED" is displayed.

10. Touch "SELF-DIAG RESULT".

Which is displayed on CONSULT

OK >> INSPECTION END

NG >> Proceed to EC-277, "Diagnosis Procedure".

CAN NOT BE DIAGNOSED>>GO TO 4.

f 4. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B AGAIN

- 1. Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle).
- Perform DTC confirmation procedure again.

>> GO TO 3.

5.PERFORM COMPONENT FUNCTION CHECK FOR MALFUNCTION B

Perform component function check. Refer to EC-277, "Diagnosis Procedure".

NOTE:

Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-277, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011461572

1.PERFORM COMPONENT FUNCTION CHECK-I

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

Р

	ECM				
Cannadar	+	-	Condition	Voltage	
Connector -	Terminal				
F25	29	33	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.68 V at least once during this procedure.	-
the inspec	tion result no	ormal?			
۱O >> 0	NSPECTION GO TO 2.				
.PERFORI	M COMPON	IENT FUN	CTION CHECK-II		
neck the vo	oltage betwe	en ECM h	arness connector and ground as	s per the following condition.	
					_
T	ECM				
Connector	+	_	Condition	Voltage	
	Term	ninal			_
F25	29	33	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.68 V at least once during this procedure.	
the inence	4i a.m. maa.ul4 m.	10			
YES >> I NO >> 0	tion result no INSPECTION GO TO 3. M COMPON	N END	CTION CHECK-III		
YES >> I NO >> 0 .PERFORI	NSPECTION GO TO 3. M COMPON	N END	CTION CHECK-III arness connector and ground as	s per the following condition.	
YES >> I NO >> 0 PERFORI	NSPECTION GO TO 3. M COMPON	N END		s per the following condition.	
YES >> I NO >> 0 PERFORI heck the vo	NSPECTION GO TO 3. M COMPON Oltage betwe	N END		s per the following condition. Voltage	
YES >> I NO >> 0 .PERFORI	NSPECTION GO TO 3. M COMPON oltage betwe	N END JENT FUN en ECM ha	arness connector and ground as		•
YES >> I NO >> 0 PERFORI	NSPECTION GO TO 3. M COMPON obliage betwe ECM +	N END JENT FUN en ECM ha	arness connector and ground as		<u> </u>
YES >> I NO >> 0 3.PERFORI Check the vo	NSPECTION GO TO 3. M COMPON oltage betwe ECM + Term 29 tion result no	N END IENT FUN en ECM had innal 33 ormal? N END	Condition Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position	Voltage The voltage should be above 0.68 V	- -
YES >> I NO >> 0 PERFORI Theck the vo	NSPECTION GO TO 3. M COMPON oltage betwe ECM + Term 29 tion result no	N END JENT FUN en ECM had animal animal animal? N END EC-277, "D	Condition Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	Voltage The voltage should be above 0.68 V at least once during this procedure.	- - - FOID:0000000011461573
YES >> I NO >> 0 PERFORI Theck the vo	NSPECTION GO TO 3. M COMPON Ditage betwe ECM + Term 29 tion result not not not not not not not not not no	N END JENT FUN en ECM had animal animal animal animal cormal? N END EC-277, "D	Condition Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	Voltage The voltage should be above 0.68 V at least once during this procedure.	- - - - - - - - - - - - - - - - - - -
YES >> INO >> CONNECTOR INSPECT	INSPECTION GO TO 3. M COMPON Ditage betwe ECM + Term 29 tion result no INSPECTION Proceed to E Procedur TION START	N END IENT FUN en ECM had all assume a second a	Condition Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	Voltage The voltage should be above 0.68 V at least once during this procedure.	- FOID:000000011461573
YES >> INO >> CONNECTOR INSPECT	INSPECTION GO TO 3. M COMPON Ditage betwe ECM + Term 29 Ition result not proceed to E Procedur TON START detected manuation is detected.	N END IENT FUN en ECM had - ninal 33 ormal? N END EC-277, "D	Condition Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T) iagnosis Procedure".	Voltage The voltage should be above 0.68 V at least once during this procedure.	- FOID:000000011461573
YES >> INO >> CONNECTOR INSPECT CONFIRM the content of the content of the content of the confirm the confirmation and the confirmati	INSPECTION GO TO 3. M COMPON Ditage betwe ECM + Term 29 Ition result not proceed to E Procedur TON START detected main anction is detected GO TO 2.	N END IENT FUN en ECM had - ninal 33 ormal? N END EC-277, "D	Condition Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T) iagnosis Procedure".	Voltage The voltage should be above 0.68 V at least once during this procedure.	FOID:000000011461573
YES >> INO >> 0 3. PERFORI Check the volume Connector F25 Sthe inspector YES >> INO >> F Diagnosis INSPECT Confirm the control of the con	INSPECTION GO TO 3. M COMPON Ditage betwee ECM + Term 29 tion result not NSPECTION Procedur ION START detected mainction is detected mainction is detected GO TO 2. GO TO 7.	N END JENT FUN en ECM had and animal 33 ormal? N END EC-277, "D Te Ifunction (A ected?	Condition Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T) iagnosis Procedure".	Voltage The voltage should be above 0.68 V at least once during this procedure.	FOID:000000011461573

Turn ignition switch OFF.
 Disconnect heated oxyge

2. Disconnect heated oxygen sensor 2 harness connector.

3. Check connectors for water.

Water should not exist.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HO2S2 GROUND CIRCUIT

- 1. Disconnect ECM harness connector.
- 2. Check the continuity between HO2S2 harness connector and ECM harness connector.

+			_	
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F69	1	F25	33	Existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK HO2S2 INPUT SIGNAL CIRCUIT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

+			_	
НС	HO2S2		ECM	
Connector	Terminal	Connector	Terminal	
F69	4	F25	29	Existed

Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

	+		
НО	2S2	_	Continuity
Connector	Terminal		
F69	4	Ground	Not existed

	+		
E	СМ	_	Continuity
Connector	Terminal		
F25	29	Ground	Not existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK HEATED OXYGEN SENSOR 2

Check the heated oxygen sensor 2. Refer to EC-280, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 6.

6.REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

7.clear the mixture ratio self-learning value

- Clear the mixture ratio self-learning value. Refer to EC-161, "Work Procedure".
- 2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0172 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0172. Refer to EC-275, "DTC Logic".

NO

8.CHECK HO2S2 GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 harness connector.
- Disconnect ECM harness connector.
- Check the continuity between HO2S2 harness connector and ECM harness connector.

+		-		
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F69	1	F25	33	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

9. CHECK HO2S2 INPUT SIGNAL CIRCUIT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

+		_		
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F69	4	F25	29	Existed

Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

	+		
НО	2S2	_	Continuity
Connector	Terminal		
F69	4	Ground	Not existed

_		+		Continuity	
	E	СМ	_		
	Connector Terminal				
_	F25	29	Ground	Not existed	

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

10.check heated oxygen sensor 2

Check the heated oxygen sensor 2. Refer to EC-280, "Component Inspection".

Is the inspection result normal?

EC-279 Revision: 2014 October 2015 JUKE

EC

Α

Е

K

L

N

< DTC/CIRCUIT DIAGNOSIS >

YES >> Check intermittent incident. Refer to GI-44. "Intermittent Incident".

NO >> GO TO 11.

11. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

INFOID:0000000011461574

1. INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

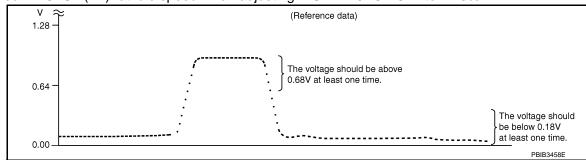
YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK HEATED OXYGEN SENSOR $_{ m 2}$

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Select "FUEL INJECTION" in "ACTIVE TEST" mode of "ENGINE" using CONSULT, and select "HO2S2 (B1)" as the monitor item with CONSULT.
- 7. Check "HO2S2 (B1)" at idle speed when adjusting "FUEL INJECTION" to ± 25%.



"HO2S2 (B1)" should be above 0.68 V at least once when the "FUEL INJECTION" is + 25%. "HO2S2 (B1)" should be below 0.18 V at least once when the "FUEL INJECTION" is – 25%.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

3.CHECK HEATED OXYGEN SENSOR 2-I

- Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

Α

EC

D

Е

F

Р

ECM				
Connector	+	-	Condition	Voltage
Connector	Terminal			
F25	29	33	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4. CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	-	Condition	Voltage
Connector	Terminal			
F25	29	33	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

5.CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	-	Condition	Voltage
Connector	Terminal			
F25	29	33	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

Revision: 2014 October

6.REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

• Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.

 Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

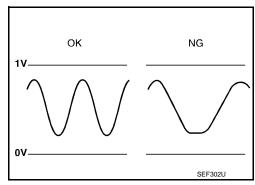
EC-281 2015 JUKE

P0139 HO2S2

DTC Logic

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst 1 causes the longer switching time. To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the switching response of the sensor's voltage is faster than specified during various driving conditions such as fuel cut.



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0139	HO2S2 (B1) (Heated oxygen sensor 2 circuit slow response)	The switching time between rich and lean of a heated oxygen sensor 2 signal delays more than the specified time computed by ECM.	 Harness or connectors (The sensor circuit is open or shorted) Heated oxygen sensor 2 Fuel system EVAP system Intake air system

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 7.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30°C (32 to 86°F).

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to the normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- 5. Turn ignition switch OFF and wait at least 10 seconds.
- 6. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 7. Let engine idle for 1 minute.
- 8. Make sure that "COOLAN TEMP/S" indicates more than 70°C (158°F).
- Drive the vehicle in a proper at 60 km/h (38MPH) and maintain the speed. CAUTION:

Always drive vehicle at a safe speed.

< DTC/CIRCUIT DIAGNOSIS >

10. Release the accelerator pedal fully at least 5 seconds.

CAUTION:

- Enable engine brake.
- Always drive carefully.
- Never apply brake when releasing the accelerator pedal.
- 11. Repeat step 9 and 10 at least 8 times.
- 12. Check the following item of "DATA MONITOR".

Data monitor item	Status
HO2 S2 DIAG1 (B1)	CMPLT
HO2 S2 DIAG2 (B1)	OIVII EI

Is "CMPLT" displayed on CONSULT screen?

YES >> GO TO 6.

NO-1: "CMPLT" is not displayed on DIAG 1>>Perform DTC confirmation procedure again.

NO-2: "CMPLT" is not displayed on DIAG 2>>GO TO 4.

4.PERFORM DTC WORK SUPPORT

- 1. Open engine hood.
- Select "HO2S2 (B1) P0139" in "DTC WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Start engine and follow the instruction of CONSULT display.

NOTE:

It will take at most 10 minutes until "COMPLETED" is displayed.

Is "COMPLETED" displayed on CONSULT screen?

YES >> GO TO 6.

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

- Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle).
- Perform DTC confirmation procedure again.

>> GO TO 3.

6.PERFORM SELF-DIAGNOSIS

(P)With CONSULT

Perform ECM self-diagnosis.

Is DTC "P0139" detected?

>> Proceed to EC-284, "Diagnosis Procedure".

NO >> INSPECTION END

/ .PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-283, "Component Function Check".

NOTE:

Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

>> Proceed to EC-284, "Diagnosis Procedure". NO

Component Function Check

1.PERFORM COMPONENT FUNCTION CHECK-I

- Start engine and warm it up to normal operating temperature. 1.
- Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- Check the voltage between ECM harness connector and ground as per the following condition.

EC-283 Revision: 2014 October 2015 JUKE

EC

Α

Е

Н

INFOID:0000000011461576

ECM					
Connector	+	_	Condition	Voltage	
Connector	Terminal				
F25	29	33	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.68 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	_	Condition	Voltage
Connector	Terminal			
F25	F25 29 33		Keeping engine speed at idle for 10 minutes	The voltage should be above 0.68 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3.PERFORM COMPONENT FUNCTION CHECK-III

Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	_	Condition	Voltage
Connector	Terminal			
F25	29	33	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.68 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-271, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461577

1. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

- 1. Clear the mixture ratio self-learning value. Refer to EC-161, "Work Procedure".
- Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171 or P0172 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171 or P0172. Refer to <u>EC-293, "DTC Logic"</u> or <u>EC-297, "DTC Logic"</u>.

NO >> GO TO 2.

2.CHECK HO2S2 GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect heated oxygen sensor 2 harness connector.
- 3. Disconnect ECM harness connector.
- 4. Check the continuity between HO2S2 harness connector and ECM harness connector.

Α

EC

D

Е

Ν

+		_		
НО	2S2	ECM		Continuity
Connector	Terminal	Connector Terminal		
F69	1	F25	33	Existed

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HO2S2 INPUT SIGNAL CIRCUIT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

+		-		
НО	2S2	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F69	4	F25	29	Existed

2. Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

	+		
НО	2S2	_	Continuity
Connector Terminal			
F69	4	Ground	Not existed

	+		
E	СМ	_	Continuity
Connector	Terminal		
F25	29	Ground	Not existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK HEATED OXYGEN SENSOR 2

Check the heated oxygen sensor 2. Refer to EC-286, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 5.

5. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

INFOID:0000000011461578

1. INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

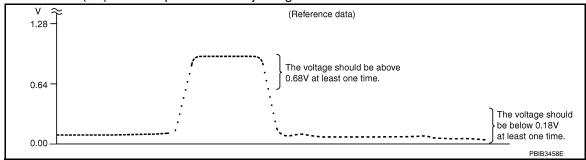
YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK HEATED OXYGEN SENSOR 2

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Select "FUEL INJECTION" in "ACTIVE TEST" mode of "ENGINE" using CONSULT, and select "HO2S2 (B1)" as the monitor item with CONSULT.
- 7. Check "HO2S2 (B1)" at idle speed when adjusting "FUEL INJECTION" to \pm 25%.



"HO2S2 (B1)" should be above 0.68 V at least once when the "FUEL INJECTION" is + 25%. "HO2S2 (B1)" should be below 0.18 V at least once when the "FUEL INJECTION" is – 25%.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

3.CHECK HEATED OXYGEN SENSOR 2-I

- 1. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	-	Condition	Voltage
Terminal				
F25	29	33	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4. CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector and ground as per the following condition.

P0139 HO2S2

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

ECM				
Connector	+	_	Condition	Voltage
Connector	Terminal			
F25	29	33	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

5. CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	_	Condition	Voltage
Terminal				
F25	29	33	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.68 V at least once during this procedure. The voltage should be below 0.18 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

6.REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Α

EC

D

Е

F

Κ

L

Ν

O

Р

P014C, P014D, P015A, P015B A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P014C, P014D, P015A, P015B A/F SENSOR 1

DTC Logic

DTC DETECTION LOGIC

To judge malfunctions, this diagnosis measures response time of the A/F signal computed by ECM from the A/F sensor 1 signal. The time is compensated by engine operating (speed and load), fuel feedback control constant, and the A/F sensor 1 temperature index. Judgment is based on whether the compensated time (the A/F signal cycling time index) is inordinately long or not.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible Cause
P014C	Air fuel ratio (A/F) sensor 1 (bank 1)	The response time of a A/F sen-	
P014D	circuit slow response	sor 1 signal delays more than the specified time computed by ECM.	 Harness or connectors (The A/F sensor 1 circuit is open or shorted.) A/F sensor 1
P015A	Air fuel ratio (A/F) sensor 1 (bank 1)		
P015B	circuit delayed response	ECIVI.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 6.

2.PERFORM DTC CONFIRMATION PROCEDURE-1

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 6. Let engine idle for 1 minute.
- 7. Increase the engine speed up to about 3,600 rpm and keep it for 10 seconds.
- 8. Fully release accelerator pedal and then let engine idle for about 1 minute.
- 9. Check the items status of "DATA MONITOR" as follows.

NOTE:

If "PRSNT" changed to "ABSNT", refer to EC-260, "Component Function Check".

Data monitor item	Status
A/F SEN1 DIAG3 (B1)	PRSNT

Is "PRSNT" displayed on CONSULT screen?

YES >> GO TO 4. NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-2

(II) With CONSULT

Perform DTC confirmation procedure-1 again.

Is "PRSNT" displayed on CONSULT screen?

YES >> GO TO 4.

NO >> Refer to EC-260, "Component Function Check".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

4. PERFORM DTC CONFIRMATION PROCEDURE-2

With CONSULT

- 1. Wait for about 20 seconds at idle.
- Check the items status of "DATA MONITOR" as follows.

If "CMPLT" changed to "INCMP", refer to EC-260, "Component Function Check".

Data monitor item	Status
A/F SEN1 DIAG1 (B1)	CMPLT
A/F SEN1 DIAG2 (B1)	CIVIFLI

Is "CMPLT" displayed on CONSULT screen?

YES >> GO TO 5.

NO >> Refer to EC-260, "Component Function Check".

5. PERFORM SELF-DIAGNOSIS

(P)With CONSULT

Check the "SELF-DIAG RESULT".

Is any DTC detected?

YES >> Proceed to EC-290, "Diagnosis Procedure".

NO >> INSPECTION END

O.CHECK AIR-FUEL RATIO SELF-LEARNING VALUE

■With GST

- 1. Start engine and warm it up to normal operating temperature.
- 2. Select Service \$01 with GST.
- Calculate the total value of "Short term fuel trim" and "Long term fuel trim" indications.

Is the total percentage within $\pm 15\%$?

YES >> GO TO 8.

NO >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- Intake air leaks
- Exhaust gas leaks
- Incorrect fuel pressure
- Lack of fuel
- Fuel injector
- Incorrect PCV hose connection
- PCV valve
- Mass air flow sensor

>> Repair or replace malfunctioning part.

8.perform dtc confirmation procedure

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Increase the engine speed up to about 3,600 rpm and keep it for 10 seconds.
- 7. Fully release accelerator pedal and then let engine idle for about 1 minute.
- 8. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-290, "Diagnosis Procedure".

NO >> INSPECTION END

EC

Е

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011461580

1. CHECK GROUND CONNECTION

- 1. Turn ignition switch OFF.
- 2. Check ground connection M95. Refer to Ground Inspection in GI-47, "Circuit Inspection".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

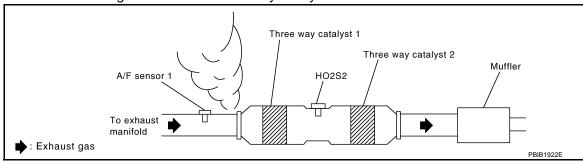
2.retighten A/F sensor 1

Loosen and retighten the A/F sensor 1. Refer to <u>EM-34, "2WD : Exploded View"</u> (FOR 2WD MODELS), <u>EM-36, "AWD : Exploded View"</u> (FOR AWD MODELS).

>> GO TO 3.

3. CHECK EXHAUST GAS LEAK

- Start engine and run it at idle.
- 2. Listen for an exhaust gas leak before three way catalyst 1.



Is exhaust gas leak detected?

YES >> Repair or replace.

NO >> GO TO 4.

4. CHECK FOR INTAKE AIR LEAK

Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

YES >> Repair or replace.

NO >> GO TO 5.

5. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

- 1. Clear the mixture ratio self-learning value. Refer to EC-161, "Work Procedure".
- 2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171or P0172 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171or P0172. Refer to <u>EC-293, "DTC Logic"</u> or <u>EC-297, "DTC Logic"</u>.

NO >> GO TO 6.

f 6.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- Disconnect A/F sensor 1 harness connector.
- Turn ignition switch ON.
- 3. Check the voltage between A/F sensor 1 harness connector and ground.

A/F se	A/F sensor 1		Voltage
Connector	Terminal	Ground	voltage
F70	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 8.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> GO TO 7.

7.DETECT MALFUNCTIONING PART

Check the following.

- Harness connectors E8. F1
- IPDM E/R harness connector E14
- 20 A fuse (No. 43)
- Harness for open or short between A/F sensor 1 and fuse

>> Repair or replace harness or connectors.

8.check a/f sensor 1 input signal circuit for open and short

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

A/F ser	A/F sensor 1 ECM		Continuity	
Connector	Terminal	Connector	Terminal	Continuity
F70	1	F25	21	Existed
	2	123	25	LXISIBU

4. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

A/F sensor 1		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
F70	1	Ground	Not existed	
170	2	Ground	NOT EXISTED	

ECM		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
F25	21	Ground	Not existed	
125	25	Glound	Not existed	

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 9.

>> Repair open circuit, short to ground or short to power in harness or connectors. NO

9. CHECK AIR FUEL RATIO (A/F) SENSOR 1 HEATER

Refer to EC-200, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 13.

10.CHECK MASS AIR FLOW SENSOR

Check mass air flow sensor.

Refer to EC-231, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace malfunctioning mass air flow sensor. Refer to EM-27, "Exploded View".

11. CHECK PCV VALVE

Refer to EM-59, "Exploded View".

Is the inspection result normal?

EC-291 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

M

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 12.

NO >> Repair or replace PCV valve.

12. CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 13.

NO >> Repair or replace.

13.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to <u>EM-34, "2WD : Exploded View"</u> (FOR 2WD MODELS), <u>EM-36, "AWD : Exploded View"</u> (FOR AWD MODELS).

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0171 FUEL INJECTION SYSTEM FUNCTION

DTC Logic INFOID:0000000011461581

DTC DETECTION LOGIC

With the Air/Fuel Mixture Ratio Self-Learning Control, the actual mixture ratio can be brought closely to the theoretical mixture ratio based on the mixture ratio feedback signal from the A/F sensors 1. The ECM calculates the necessary compensation to correct the offset between the actual and the theoretical ratios.

In case the amount of the compensation value is extremely large (The actual mixture ratio is too lean.), the ECM judges the condition as the fuel injection system malfunction and lights up the MIL (2 trip detection logic).

Sensor	Input signal to ECM	ECM function	Actuator
A/F sensor 1	Density of oxygen in exhaust gas (Mixture ratio feedback signal)	Fuel injection control	Fuel injector

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0171	FUEL SYS-LEAN-B1 (Fuel injection system too lean)	 Fuel injection system does not operate properly. The amount of mixture ratio compensation is too large. (The mixture ratio is too lean.) 	 Intake air leaks A/F sensor 1 Fuel injector Exhaust gas leaks Incorrect fuel pressure Lack of fuel Mass air flow sensor Incorrect PCV hose connection

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

- Clear the mixture ratio self-learning value. Refer to EC-161, "Work Procedure".
- 2. Start engine.

Is it difficult to start engine?

YES >> GO TO 3.

NO >> GO TO 4.

3. RESTART ENGINE

If it is difficult to start engine, the fuel injection system has a malfunction, too.

Crank engine while depressing accelerator pedal.

NOTE:

When depressing accelerator pedal three-fourths (3/4) or more, the control system does not start the engine. Do not depress accelerator pedal too much.

Does engine start?

YES >> Proceed to EC-294, "Diagnosis Procedure".

NO >> Check exhaust and intake air leak visually.

$oldsymbol{4}_{ ext{-}}$ PERFORM DTC CONFIRMATION PROCEDURE-II

- Start engine and let it idle for at least 5 minutes.
- 2. Check 1st trip DTC.

EC

Α

D

Е

F

Н

K

L

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is 1st trip DTC detected?

YES >> Proceed to EC-294, "Diagnosis Procedure".

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE-III

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine.
- 3. Maintain the following conditions for at least 10 consecutive minutes. Hold the accelerator pedal as steady as possible.

VHCL SPEED SE 50 - 120 km/h (31 - 75 MPH)

CAUTION:

Always drive vehicle at a safe speed.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-294, "Diagnosis Procedure".

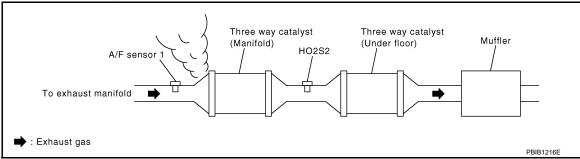
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461582

1. CHECK EXHAUST GAS LEAK

- 1. Start engine and run it at idle.
- 2. Listen for an exhaust gas leak before three way catalyst (manifold).



Is exhaust gas leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 2.

2.CHECK FOR INTAKE AIR LEAK

- 1. Listen for an intake air leak after the mass air flow sensor.
- Check PCV hose connection.

Intake air leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 3.

3.check a/f sensor 1 input signal circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect corresponding A/F sensor 1 harness connector.
- 3. Disconnect ECM harness connector.
- 4. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

	+		_	
A/F sensor 1		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F70	1	F25	21	Existed
170	2	125	25	LXISIGU

[MR FOR NISMO RS MODELS] < DTC/CIRCUIT DIAGNOSIS > Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground. Α EC A/F sensor 1 Continuity Connector **Terminal** F70 Ground Not existed 2 D + **ECM** Continuity Connector **Terminal** Е 21 F25 Ground Not existed 25 Also check harness for short to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. **4.**CHECK FUEL PRESSURE Check fuel pressure. Refer to EC-162, "Work Procedure". Н Is the inspection result normal? YES >> GO TO 6. NO >> GO TO 5. $oldsymbol{5}$. DETECT MALFUNCTIONING PART Check fuel hoses and fuel tubes for clogging. Refer to <a>EM-53, "Exploded View". Is the inspection result normal? YES >> Replace "fuel filter and fuel pump assembly". Refer to FL-5, "2WD: Exploded View" (2WD) or FL-9, "AWD: Exploded View" (AWD). NO >> Repair or replace error-detected parts. $\mathsf{6}.$ CHECK MASS AIR FLOW SENSOR With CONSULT Install all removed parts. Check "MASS AIR FLOW" in "DATA MONITOR" mode of "ENGINE" using CONSULT. For specification, refer to EC-579, "Mass Air Flow Sensor". 1. Install all removed parts. Check mass air flow sensor signal in Service \$01 with GST. Ν For specification, refer to EC-579, "Mass Air Flow Sensor". Is the measurement value within the specification? YES >> GO TO 7. >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or NO grounds. Refer to EC-234, "DTC Logic".

7.CHECK FUNCTION OF FUEL INJECTOR

(P)With CONSULT

- Start engine.
- Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- Make sure that each circuit produces a momentary engine speed drop.

Without CONSULT

Let engine idle.

< DTC/CIRCUIT DIAGNOSIS >

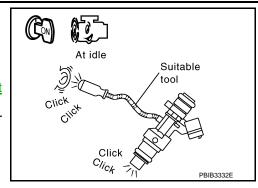
[MR FOR NISMO RS MODELS]

2. Listen to each fuel injector operating sound.

Clicking noise should be heard.

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to <u>GI-44, "Intermittent Incident"</u>.
- NO >> Perform trouble diagnosis for "FUEL INJECTOR", refer to EC-529, "Component Function Check".



< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0172 FUEL INJECTION SYSTEM FUNCTION

DTC Logic INFOID:0000000011461583

DTC DETECTION LOGIC

With the Air/Fuel Mixture Ratio Self-Learning Control, the actual mixture ratio can be brought closely to the theoretical mixture ratio based on the mixture ratio feedback signal from the A/F sensors 1. The ECM calculates the necessary compensation to correct the offset between the actual and the theoretical ratios.

In case the amount of the compensation value is extremely large (The actual mixture ratio is too rich.), the ECM judges the condition as the fuel injection system malfunction and lights up the MIL (2 trip detection logic).

Sensor	Input signal to ECM	ECM function	Actuator
A/F sensor 1	Density of oxygen in exhaust gas (Mixture ratio feedback signal)	Fuel injection control	Fuel injector

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0172	FUEL SYS-RICH-B1 (Fuel injection system too rich)	Fuel injection system does not operate properly. The amount of mixture ratio compensation is too large. (The mixture ratio is too rich.)	A/F sensor 1 Fuel injector Exhaust gas leaks Incorrect fuel pressure Mass air flow sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

- Clear the mixture ratio self-learning value. Refer to EC-161, "Work Procedure".
- 2. Start engine.

Is it difficult to start engine?

YES >> GO TO 3.

NO >> GO TO 4.

3.restart engine

If it is difficult to start engine, the fuel injection system has a malfunction, too.

Crank engine while depressing accelerator pedal.

When depressing accelerator pedal three-fourths (3/4) or more, the control system does not start the engine. Do not depress accelerator pedal too much.

Does engine start?

YES >> Proceed to EC-298, "Diagnosis Procedure".

>> Check exhaust and intake air leak visually. NO

4. PERFORM DTC CONFIRMATION PROCEDURE-II

- Start engine and let it idle for at least 5 minutes.
- Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-298, "Diagnosis Procedure". YES

NO >> GO TO 5.

EC-297 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

M

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

5. PERFORM DTC CONFIRMATION PROCEDURE-III

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine.
- 3. Maintain the following conditions for at least 10 consecutive minutes. Hold the accelerator pedal as steady as possible.

VHCL SPEED SE 50 - 120 km/h (31 - 75 MPH)

CAUTION:

Always drive vehicle at a safe speed.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-298, "Diagnosis Procedure".

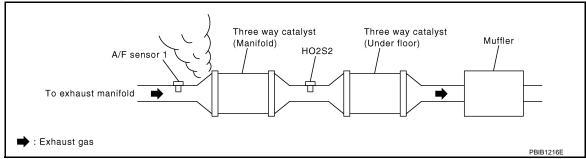
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461584

1. CHECK EXHAUST GAS LEAK

- Start engine and run it at idle.
- Listen for an exhaust gas leak before three way catalyst (manifold).



Is exhaust gas leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 2.

2 . CHECK FOR INTAKE AIR LEAK

- 1. Listen for an intake air leak after the mass air flow sensor.
- 2. Check PCV hose connection.

Intake air leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 3.

3.CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect corresponding A/F sensor 1 harness connector.
- 3. Disconnect ECM harness connector.
- 4. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

	+ -			
A/F se	ensor 1	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F70	1	F25	21	Existed
170	2	123	25	LAISIEU

Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+			
A/F se	ensor 1	_	Continuity	
Connector	Terminal			
F70	1	0	Nick of State I	
F70	2	Ground	Not existed	
	+			
E	CM	_	Continuity	
Connector	Terminal			
F25	21 25	Ground	Not existed	
Also check	harness for she	ort to power.		
	n result normal	•		
'ES >> GC	TO 4.			
	· ·	error-detected p	oarts.	
CHECK FU	EL PRESSURE			
eck fuel pres	sure. Refer to	EC-162, "Work	Procedure".	
the inspectio	n result normal	<u>?</u>		
	TO 6.			
	TO 5.			
	ALFUNCTIONI			
			Refer to EM-53	"Exploded View".
•	n result normal	_		. 5. 5. 10.14.5. 5. 1. 1.14.5. 11 (01.15)
		and fuel pump ed View" (AWD)		er to FL-5, "2WD: Exploded View" (2WD) or FL-
		error-detected p		
.CHECK MA	SS AIR FLOW	SENSOR		
With CONSU				
	emoved parts.			
				"ENGINE" using CONSULT.
For specific With GST	auon, reier to <u>t</u>	EC-579, "Mass	All Flow Seliso	-
Install all re	emoved parts.			
		or signal in Serv		
•	·	EC-579, "Mass in the specifica		-
	nient value with TO 7.	mi uie specifica	uoii:	
NO >> Ch	eck connectors	for rusted term EC-234, "DTC I		onnections in the mass air flow sensor circuit or
	NCTION OF FU		-	
With CONSU) Start engin	/ 1			
Perform "P	e. OWER BALAN	CE" in "ACTIVE it produces a m		f "ENGINE" using CONSULT.

Without CONSULT 1. Let engine idle.

< DTC/CIRCUIT DIAGNOSIS >

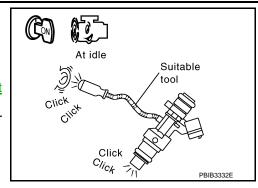
[MR FOR NISMO RS MODELS]

2. Listen to each fuel injector operating sound.

Clicking noise should be heard.

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to <u>GI-44, "Intermittent Incident"</u>.
- NO >> Perform trouble diagnosis for "FUEL INJECTOR", refer to EC-529, "Component Function Check".



[MR FOR NISMO RS MODELS]

P0181 FTT SENSOR

DTC Logic INFOID:0000000011461585

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition		Possible cause
		A)	Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signals from ECT sensor and intake air temperature sensor 1.	Harness or connectors (FTT sensor circuit is open or shorted) FTT sensor Combination meter
P0181	FTT SENSOR [Fuel tank temperature (FTT) sensor circuit range/perfor- mance]	B)	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor 1, IAT sensor 2, ECT sensor, EOT sensor, and FTT sensor) shows that the voltage signal of the FTT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the FTT sensor circuit) FTT sensor

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 7.

NO >> GO TO 2.

2.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 3.

${f 3.}$ PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A-I

- Turn ignition switch ON and wait at least 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-303, "Diagnosis Procedure".

NO >> GO TO 4.

4. CHECK ENGINE COOLANT TEMPERATURE

(P)With CONSULT

- Select "COOLAN TEMP/S" in "DATA MONITOR" of "ENGINE" using CONSULT.
- Check "COOLAN TEMP/S" value.

Follow the procedure "With CONSULT" above.

"COOLAN TEMP/S" less than 60°C (140°F)?

YES >> INSPECTION END

NO >> GO TO 5.

$oldsymbol{5}$ PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A-II

(P)With CONSULT

Cool engine down until "COOLAN TEMP/S" is less than 60°C (140°F).

EC-301 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

K

L

Ν

P0181 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Wait at least 10 seconds.
- Check 1st trip DTC.

With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-303, "Diagnosis Procedure".

NO >> GO TO 6.

6.PERFORM COMPONENT FUNCTION CHECK (FOR MALFUNCTION B)

Perform component function check. Refer to EC-302, "Component Function Check".

NOTE:

Use the component function check to check the overall function of the FTT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-303, "Diagnosis Procedure".

7.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- · Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 8.

8.PERFORM DTC CONFIRMATION PROCEDURE B

- 1. Start engine and let it idle for 60 minutes.
- Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

3. Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

4. Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-303, "Diagnosis Procedure".

NO >> INSPECTION END

Component Function Check

INFOID:0000000011461586

1. CHECK FUEL TANK TEMPERATURE (FTT) SENSOR

- 1. Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit and fuel pump harness connector.
- Remove fuel level sensor unit. Refer to <u>FL-5</u>, "<u>2WD</u>: <u>Exploded View</u>"(2WD), <u>FL-9</u>, "<u>AWD</u>: <u>Exploded View</u>"(AWD).

P0181 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

D

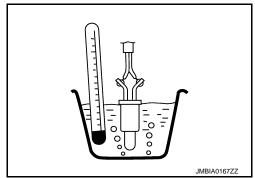
Ν

Р

INFOID:0000000011461587

4. Check resistance between fuel level sensor unit and fuel pump terminals by heating with hot water as shown in the figure.

Fuel level sensor unit and fuel pump		Condition		5 1
+	_	Condition		Resistance (kΩ)
Terminal				
4	5	Temperature [°C	20 (68)	2.3 – 2.7
4	3	(°F)]	50 (122)	0.79 - 0.90



Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to <u>EC-303</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

1. INSPECTION START

Confirm the detected malfunction (A or B). Refer to EC-301, "DTC Logic".

Which malfunction is detected?

A >> GO TO 2.

B >> GO TO 6.

2.CHECK DTC WITH COMBINATION METER

Check DTC with combination meter. Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Proceed to MWI-50, "Component Function Check".

3.check fuel tank temperature (ftt) sensor power

- 1. Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit and fuel pump harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between fuel level sensor unit and fuel pump harness connector and ground.

	+		\
Fuel level sensor	unit and fuel pump	_	Voltage (Approx.)
Connector	Connector Terminal		(- /
B46	4	Ground	5 V

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK FUEL TANK TEMPERATURE (FTT) SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between fuel level sensor unit and fuel pump harness connector and ECM harness connector.

+		-		
Fuel level sensor unit and fuel pump		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B46	4	F26	84	Existed

4. Also check harness for short to ground and to power.

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

5. CHECK FTT SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect combination meter harness connector.
- Check the continuity between fuel level sensor unit and fuel pump harness connector and combination meter harness connector.

+		-		
Fuel level sensor unit and fuel pump		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
B46	5	M34	24	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO

NO >> Repair or replace error-detected parts.

6.CHECK FUEL TANK TEMPERATURE (FTT) SENSOR

Check the FTT sensor. Refer to EC-304, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace fuel level sensor unit and fuel pump. Refer to <u>FL-5, "2WD : Exploded View"</u>(2WD), <u>FL-9, "AWD : Exploded View"</u>(AWD).

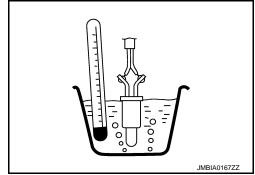
Component Inspection

INFOID:0000000011461588

1. CHECK FUEL TANK TEMPERATURE (FTT) SENSOR

- 1. Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit and fuel pump harness connector.
- Remove fuel level sensor unit. Refer to FL-5, "2WD: Exploded View" (2WD), FL-9, "AWD: Exploded View" (AWD).
- 4. Check resistance between fuel level sensor unit and fuel pump terminals by heating with hot water as shown in the figure.

Fuel level sensor unit and fuel pump		Condition		D with a set (10)
+	_	Condition		Resistance ($k\Omega$)
Terminal				
4	5	Temperature	20 (68)	2.3 – 2.7
4	3	[°C (°F)]	50 (122)	0.79 - 0.90



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace fuel level sensor unit and fuel pump. Refer to FL-5, "2WD: Exploded View".

P0182, P0183 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

D

INFOID:0000000011461590

M

Ν

Р

P0182, P0183 FTT SENSOR

DTC Logic (INFOID:0000000011461589)

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	
P0182	FTT SEN/CIRCUIT (Fuel tank temperature sensor circuit low input)	An excessively low voltage from the sensor is sent to ECM.	Harness or connectors (The FTT sensor circuit is open or shorted.)	
P0183	FTT SEN/CIRCUIT (Fuel tank temperature sensor circuit high input)	An excessively high voltage from the sensor is sent to ECM.	Fuel tank temperature sensor Combination meter	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-305, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK DTC WITH COMBINATION METER

Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to MWI-50, "Component Function Check".

2.CHECK FUEL TANK TEMPERATURE (FTT) SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit and fuel pump harness connector.
- Turn ignition switch ON.
- Check the voltage between fuel level sensor unit and fuel pump harness connector and ground.

	+		
	sor unit and fuel mp	_	Voltage (Approx.)
Connector	Terminal		
B46	4	Ground	5 V

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 3.

P0182, P0183 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

${f 3.}$ CHECK FUEL TANK TEMPERATURE (FTT) SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between fuel level sensor unit and fuel pump harness connector and ECM harness connector

+		_		
Fuel level sensor unit and fuel pump		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B46	4	F26	84	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK FUEL TANK TEMPERATURE (FTT) SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect combination meter harness connector.
- Check the continuity between fuel level sensor unit and fuel pump harness connector and combination meter harness connector.

+		-		
Fuel level sensor unit and fuel pump		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
B46	5	M34	24	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5.}$ CHECK FUEL TANK TEMPERATURE (FTT) SENSOR

Check the FTT sensor. Refer to EC-306, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace "fuel level sensor unit and fuel pump". Refer to <u>FL-5, "2WD : Exploded View"(2WD)</u>, <u>FL-9, "AWD : Exploded View"(AWD)</u>.

Component Inspection

INFOID:0000000011461591

1. CHECK FUEL TANK TEMPERATURE (FTT) SENSOR

- Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit and fuel pump harness connector.
- 3. Remove fuel level sensor unit. Refer to <u>FL-5, "2WD : Exploded View"(2WD)</u>, <u>FL-9, "AWD : Exploded View"(AWD)</u>.

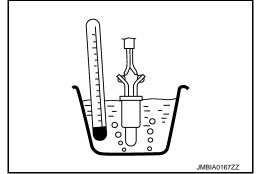
P0182, P0183 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

4. Check resistance between fuel level sensor unit and fuel pump terminals by heating with hot water as shown in the figure.

Fuel level sensor unit and fuel pump		Condition		
+	-	Condition		Resistance (kΩ)
Terminal				
4	5	Temperature	20 (68)	2.3 – 2.7
4	5	[°C (°F)]	50 (122)	0.79 - 0.90



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace fuel level sensor unit and fuel pump. Refer to FL-5, "2WD : Exploded View".

Α

EC

С

 D

Е

F

G

Н

Κ

L

M

Ν

0

INFOID:0000000011461593

P0190, P0192, P0193 FRP SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0193 is displayed with DTC P0190 or P119C, perform the trouble diagnosis for DTC P0190 or P119C. Refer to <u>EC-113</u>, "DTC Index".

	T		
DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0190	FUEL PRES SEN/CIRCUIT (Fuel rail pressure sensor circuit low input and high in- put)	Signal voltage from the fuel rail pressure sensor remains at more than 4.84 V / less than 0.2 V for 5 seconds or more.	Harness or connectors (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or short-
P0192	FRP SEN/CIRC (Fuel rail pressure sensor circuit low input)	Signal voltage from the fuel rail pressure sensor remains at less than 0.37 V for 5 seconds or more.	ed.) (G sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted.)
P0193	FRP SEN/CIRC (Fuel rail pressure sensor circuit high input)	Signal voltage from the fuel rail pressure sensor remains at more than 4.06 V for 5 seconds or more.	(Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) Fuel rail pressure sensor Battery current sensor G sensor Camshaft position sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine ON and wait at least 60 seconds.
- Check DTC or 1st trip DTC.

Is DTC or 1st trip DTC detected?

YES >> Proceed to EC-308, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

NOTE:

Turning the ignition switch ON with FRP sensor harness connector disconnected causes ECM to detect DTC P0190. Be sure to erase the DTC when the diagnosis procedure.

P0190, P0192, P0193 FRP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

1.CHECK FUEL RAIL PRESSURE (FRP) SENSOR POWER SUPPLY-I

- 1. Turn ignition switch OFF.
- 2. Disconnect FRP sensor connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between FRP sensor harness connector terminals.

	FRP sensor	V 16		
Connector	+	_	Voltage (Approx.)	
Connector	tern	ninal	,	
F5	1	3	5 V	

<u>Inspection result normal?</u>

YES >> GO TO 6.

NO >> GO TO 2.

2. CHECK FRP SENSOR POWER SUPPLY-II

Check the voltage between FRP sensor harness connector and the ground.

	+		\/altaga	
FRP	sensor	_	Voltage (Approx.)	
Connector Terminal			, , ,	
F5	1	Ground	5 V	

Is inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.check sensor power supply circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

E	CM	Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1
	68	Battery current sensor	F52	1
F26		G sensor	B32	3
F20	72	CMP sensor	F109	1
12		EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK FRP SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

EC

D

Е

J

_

M

Ν

(

INFOID:0000000011461594

+		,		
FRP sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
F5	3	F25	44	Existed

Also check harness for short to power.

Is inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and the ground.

E	CM	Ground	Continuity	
Connector	Terminal	Giodila	Continuity	
F25	1			
1 23	2		Existed	
	123	Ground		
E18	124			
	127			

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

6. CHECK FRP SENSOR SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

+		-		
FRP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F5	2	F25	18	Existed

4. Also check harness for short to ground and to power.

Is inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

.CHECK FRP SENSOR

Check the FRP sensor. Refer to EC-310, "Component Inspection".

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

Component Inspection

1. CHECK FRP SENSOR

(P)WITH CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect harness connector disconnected.
- Start the engine.
- 4. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.

P0190, P0192, P0193 FRP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

5. Check that the "FUEL PRES SEN V" indication.

Monitor Item	Condition	Values/Status
FUEL PRES SEN V	Engine speed: Idle	1,140 – 1,460 mV
	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

NWITHOUT CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect harness connector disconnected.
- 3. Start the engine.
- 4. Check FRP sensor signal voltage.

	ECM			.,,
Connector	+	_	Condition	Value (Approx.)
Connector	Tern	ninal		(/ ippi ox.)
F25	18	44	[Engine is running]Warm-up conditionIdle speed	1.14– 1.46 V
F23	10	44	[Engine is running]Warm-up conditionRevving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Replace FRP sensor. Refer to EM-53, "Exploded View".

Α

EC

D

F

Е

G

Н

J

Κ

L

M

Ν

0

P0196 EOT SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0196 is displayed with DTC P0197 or P0198, first perform the trouble diagnosis for DTC P0197 or P0198. Refer to <u>EC-316</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition		Possible cause
		A)	Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signals from EOT sensor and intake air temperature sensor 1.	Harness or connectors (EOT sensor circuit is open or shorted) EOT sensor
P0196	EOT SENSOR [Engine oil temperature (EOT) sensor circuit range/performance]	В)	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor1, IAT sensor 2, ECT sensor, FTT sensor, and EOT sensor) shows that the signal voltage of the EOT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the EOT sensor circuit) EOT sensor

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 6.

NO >> GO TO 2.

2.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 3.

${f 3.}$ PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A-I

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and let it idle for 5 minutes and 10 seconds.
- 6. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-314, "Diagnosis Procedure".

NO >> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A-II

(P)With CONSULT

- 1. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Check that "COOLAN TEMP/S" indicates above 80°C (176°F). If it is above 80°C (176°F), go to the following steps.

P0196 EOT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

If it is below 80°C (176°F), warm engine up until "COOLAN TEMP/S" indicates more than 80°C (176°F). Then perform the following steps.

- 3. Turn ignition switch OFF and soak the vehicle in a cool place.
- 4. Turn ignition switch ON.

NOTE:

Do not turn ignition switch OFF until step 8.

- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check the following.

COOLAN TEMP/S	Below 40°C (104°F)
INT/A TEMP SE	Below 40°C (104°F)
Difference between "COOLAN TEMP/S" and "INT/A TEMP SE"	Within 6°C (11°F)

If they are within the specified range, perform the following steps.

If they are out of the specified range, soak the vehicle to meet the above conditions. Then perform the following steps.

NOTE:

- · Do not turn ignition switch OFF.
- If it is supposed to need a long period of time, do not deplete the battery.
- 7. Start engine and let it idle for 5 minutes.
- 8. Check 1st trip DTC.

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-314, "Diagnosis Procedure".

NO >> GO TO 5.

${f 5.}$ PERFORM COMPONENT FUNCTION CHECK (FOR MALFUNCTION B)

Perform component function check. Refer to EC-314, "Component Function Check".

NOTE:

Use the component function check to check the overall function of the EOT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-314, "Diagnosis Procedure".

6.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 7.

.PERFORM DTC CONFIRMATION PROCEDURE B

- Start engine and let it idle for 60 minutes.
- Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

Turn ignition switch OFF and soak the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during soaking.

NOTE:

The vehicle must be cooled with the hood open.

EC-313 Revision: 2014 October 2015 JUKE

EC

Α

D

F

Н

K

N

< DTC/CIRCUIT DIAGNOSIS >

Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-314, "Diagnosis Procedure".

NO >> INSPECTION END

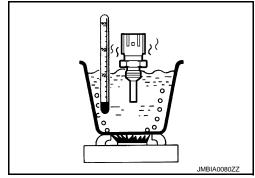
Component Function Check

INFOID:0000000011461599

1. CHECK ENGINE OIL TEMPERATURE (EOT) SENSOR

- 1. Turn ignition switch OFF.
- 2. Disconnect EOT sensor harness connector.
- 3. Remove EOT sensor. Refer to EM-113, "Exploded View".
- 4. Check resistance between EOT sensor terminals by heating with hot water as shown in the figure.

EOT sensor				
+	_	Condition		Resistance (k Ω)
Terr	ninal			
		T	20 (68)	2.37 – 2.63
1	2	Temperature [°C (°F)]	50 (122)	0.68 – 1.00
	(· /)	90 (194)	0.236 - 0.260	



Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to EC-314, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461600

${f 1}$.CHECK ENGINE OIL TEMPERATURE (EOT) SENSOR

Check EOT sensor. Refer to EC-314, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EOT sensor. Refer to EM-113, "Exploded View".

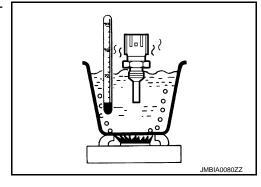
Component Inspection

INFOID:0000000011461601

1. CHECK ENGINE OIL TEMPERATURE SENSOR

- 1. Turn ignition switch OFF.
- 2. Disconnect engine oil temperature sensor harness connector.
- 3. Remove engine oil temperature sensor.
- 4. Check resistance between engine oil temperature sensor terminals by heating with hot water as shown in the figure.

Engine oil temperature sensor		Condition		Resistance (k Ω)
+ -				
Terminal				
			20 (68)	2.37 - 2.63
1	2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00
		1 - ()1	90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> INSPECTION END

P0196 EOT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> Replace engine oil temperature sensor. Refer to EM-113, "Exploded View".

EC

Α

D

С

Е

F

G

Н

J

Κ

L

M

Ν

0

Ρ

[MR FOR NISMO RS MODELS]

P0197, P0198 EOT SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC Detecting Condition	Possible Cause
P0197	EOT SEN/CIRC (Engine oil temperature sensor circuit low input)	An excessively low voltage from the engine oil temperature sensor is sent to ECM.	Harness or connectors (EOT sensor circuit is open or shorted.)
P0198	EOT SEN/CIRC (Engine oil temperature sensor circuit high input)	An excessively high voltage from the engine oil temperature sensor is sent to ECM.	Engine oil temperature sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-316, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461603

1. CHECK ENGINE OIL TEMPERATURE SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect engine oil temperature (EOT) sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between EOT sensor harness connector and ground.

	+		Valtage
EOT :	sensor	_	Voltage (Approx.)
Connector	Connector Terminal		, , ,
F43	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK ENGINE OIL TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between EOT sensor harness connector and ECM harness connector.

P0197, P0198 EOT SENSOR

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

+		_		
EOT sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
F43	3	F25 39		Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check eot sensor ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between EOT sensor harness connector and ECM harness connector.

+		-		
EOT s	ensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F43	1	F25	44	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK ENGINE OIL TEMPERATURE SENSOR

Check the engine oil temperature sensor. Refer to EC-314, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

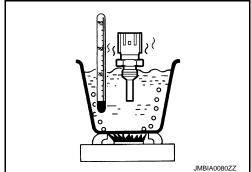
NO >> Replace engine oil temperature sensor. Refer to EM-113, "Exploded View".

Component Inspection

1. CHECK ENGINE OIL TEMPERATURE SENSOR

- Turn ignition switch OFF.
- Disconnect engine oil temperature sensor harness connector.
- 3. Remove engine oil temperature sensor.
- Check resistance between engine oil temperature sensor terminals by heating with hot water as shown in the figure.

Engine oil temperature sensor		Condition		
+	-	Condition		Resistance (kΩ)
Terr	Terminal			
		T	20 (68)	2.37 - 2.63
1	2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00
			90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine oil temperature sensor. Refer to EM-113, "Exploded View".

Revision: 2014 October EC-317 2015 JUKE

EC

Α

C

D

Е

.J

INFOID:0000000011461604

L

M

Ν

0

P0201, P0202, P0203, P0204 FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0201, P0202, P0203, P0204 FUEL INJECTOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0201	INJECTOR CIRC-CYL1 (No.1 fuel injector circuit)	ECM detects No. 1 injector circuit is open or shorted.	
P0202	INJECTOR CIRC-CYL2 (No. 2 fuel injector circuit)	ECM detects No. 2 injector circuit is open or shorted.	The fuel injector circuit is open or shorted Fuel injector
P0203	INJECTOR CIRC-CYL3 (No. 3 fuel injector circuit)	ECM detects No. 3 injector circuit is open or shorted.	• ECM
P0204	INJECTOR CIRC-CYL4 (No. 4 fuel injector circuit)	ECM detects No. 4 injector circuit is open or shorted.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, conform that battery voltage is 11 V or more at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Start the engine and let it idle at least 30 seconds.
- 3. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-318, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461606

1.PERFORM TROUBLE DIAGNOSIS FOR INJECTOR

Perform trouble diagnosis for injector. Refer to <a>EC-529, <a>"Component Function Check".

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

P0222, P0223 TP SENSOR

DTC Logic INFOID:0000000011461607

DTC DETECTION LOGIC

NOTE:

If DTC P0222 or P0223 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-342, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	
P0222	TP SEN 1/CIRC-B1 (Throttle position sensor 1 circuit low input)	An excessively low voltage from the TP sensor 1 is sent to ECM.	Harness or connectors (TP sensor 1 circuit is open or shorted.)	
P0223	TP SEN 1/CIRC-B1 (Throttle position sensor 1 circuit high input)	An excessively high voltage from the TP sensor 1 is sent to ECM.	Electric throttle control actuator (TP sensor 1)	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

>> Proceed to EC-319, "Diagnosis Procedure". YES

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK THROTTLE POSITION SENSOR 1 POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect electric throttle control actuator harness connector.
- Turn ignition switch ON.
- Check the voltage between electric throttle control actuator harness connector and ground.

	+		Valta va
Electric throttle	control actuator	_	Voltage (Approx.)
Connector	Connector Terminal		, , ,
F29 1		Ground	5 V

Is the inspection result normal?

>> GO TO 3. YES

NO >> GO TO 2.

2.check throttle position sensor 1 power supply circuit

EC-319 Revision: 2014 October 2015 JUKE

EC

Α

D

C

Е

F

Н

M

INFOID:0000000011461608

Ν

P0222, P0223 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		-		
Electric throttle control actuator		ECM		Continuity
Connector	Terminal	Connector Terminal		
F29	1	F26	62	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check throttle position sensor 1 ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector

	+		_	
Electric throttle control actu- ator		ECM		Continuity
Connector	Terminal	Connector Terminal		
F29	4	F26 74		Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK THROTTLE POSITION SENSOR 1 INPUT SIGNAL CIRCUIT

Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

	+			
Electric throttle control actu- ator		ECM		Continuity
Connector	Terminal	Connector Terminal		
F29	2	F26 75		Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

${f 5.}$ CHECK THROTTLE POSITION SENSOR

Check the throttle position sensor. Refer to EC-321, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

P0222, P0223 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Component Inspection

INFOID:0000000011461609

1. CHECK THROTTLE POSITION SENSOR

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Perform "Throttle Valve Closed Position Learning". Refer to EC-157, "Work Procedure".
- 4. Turn ignition switch ON.
- 5. Set selector lever to D (CVT) or 1st (M/T) position.
- 6. Check the voltage between ECM harness connector terminals as per the following conditions.

ECM						
Connector	+	_	Condition		Condition Voltage	
Comilector	Terr	ninal				
F26	7 <u>4</u>		Accelerator	Fully released	More than 0.36V	
		74		Fully depressed	Less than 4.75V	
		pedal	Fully released	Less than 4.75V		
			Fully depressed	More than 0.36V		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

EC

Α

·

С

D

Е

F

Н

. [

Κ

L

M

Ν

0

P0234 TC SYSTEM

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0234 is displayed with DTC P0237 or P0238, first perform the trouble diagnosis for DTC P0237 or P0238. Refer to <u>EC-328</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause		
P0234	TC SYSTEM-B1 (Turbocharger overboost condition)	Turbocharger boost is higher than the target value.	Turbocharger boost sensor Turbocharger boost control solenoid valve Exhaust manifold and turbocharger assembly Disconnection, looseness or improper connection of boost control actuator hose		

DTC CONFIRMATION PROCEDURE

1.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-322, "Component Function Check".

NOTE:

Use component function check to check the overall function of the turbocharger system circuit. During this check, DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-323, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011461611

1. CHECK BOOST CONTROL ACTUATOR HOSE

Check disconnection, looseness or improper connection of hose between turbocharger boost control solenoid valve and boost control actuator.

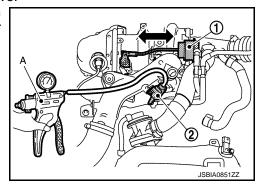
Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to EC-323, "Diagnosis Procedure".

2. PERFORM COMPONENT FUNCTION CHECK

- 1. Turn ignition switch OFF.
- 2. Disconnect turbocharger boost control solenoid valve harness connector.
- 3. Disconnect of hose between turbocharger boost control solenoid valve and compressor outlet pipe.
- 4. Install pressure pump to turbocharger boost control solenoid valve.
- Check that the rod of the boost control actuator activates when supplying pressure and battery voltage to the turbocharger boost control solenoid valve as per the following conditions.



IMR FOR NISMO RS MODELS1

< DTC/CIRCL	JIT DIAGNO	SIS >		[MR FOR NISMO RS MODELS]	
	Turbocharger boost control solenoid valve				
	Condition			Operation	
	Supply pressure [73 kPa (730 mbar, 548 mmHg, 21.56 inHg)] with battery voltage to terminals 1 and 2			Boost control actuator rod operates	
	pressure [73 kP voltage to terminate of the control		Hg, 21.56 inHg)] without	Boost control actuator rod not operates	
CAUTION Do not su		re over 83 kPa (8	30 mbar, 623 mmHg	g, 24.51 inHg)	
s the inspection	on result norn	nal?		-	
	SPECTION E	END -323, "Diagnosis P	Procedure"		
Diagnosis F		OZO, Diagnoolo i		INFOID:000000011461612	
		ROL ACTUATOR F	IOSE		
Check disconralive and boos			connection of hose b	etween turbocharger boost control solenoid	
s the inspection		nal?			
	O TO 2. epair or replac	ce error-detected	parts.		
		•		ALVE POWER SUPPLY	
	on switch OF				
2. Disconne	ct turbocharge	er boost control so	lenoid valve harness	s connector.	
	on switch ON voltage betw		boost control soleno	id valve harness connector and ground.	
				3	
	+				
•	ooost control sole d valve	e- _	Voltage		
Connector	Terminal				
F54	2	Ground	Battery voltage		
s the inspection	on result norn	nal?			
	O TO 4. O TO 3.				
			TDOL COLENOID V	ALVE DOWED CUDDLY CIDCUIT	
			TRUL SOLENOID W	ALVE POWER SUPPLY CIRCUIT	
	on switch OF	r. narness connector			
Check the	continuity be			noid valve harness connector and IPDM E/R	
harness c	onnector.				
+					
	post control	_			
solenoid		IPDM E/R	Continuity		
Turbocharger be solenoid	valve	IPDM E/R			

solenoid valve			IPDM E/R		Continuity
	Connector	Terminal	Connector	Terminal	
	F54	2	E14	36	Existed

Also check harness for short to ground and short.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit. >> Repair or replace error-detected parts. YES

NO

4. Check turbocharger boost control solenoid valve output signal circuit

P0234 TC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between turbocharger boost control solenoid valve harness connector and ECM harness connector.

	+	-		Continuity	
_	r boost control id valve	ECM			
Connector	Terminal	Connector	Terminal		
F54	1	F26	73	Existed	

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5.}$ CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

Check the turbocharger boost control solenoid valve. Refer to EC-206, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace turbocharger boost control solenoid valve. Refer to EM-39, "Exploded View".

6. CHECK BOOST CONTROL ACTUATOR

Check the boost control actuator. Refer to EM-40, "Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace exhaust manifold and turbocharger assembly. Refer to EM-39, "Exploded View".

7.CHECK TURBOCHARGER BOOST SENSOR

Check the turbocharger boost sensor. Refer to EC-330, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor. Refer to EM-32, "Exploded View".

P0235 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0235 TC BOOST SENSOR

DTC Logic INFOID:0000000011698854

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0235	TURBO BOOST SENSOR (Turbocharger/supercharger boost sensor A circuit)	An excessively low voltage from the turbocharger boost sensor is sent to ECM.	, ,

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-325, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK TURBOCHARGER BOOST SENSOR POWER SUPPLY

- Disconnect turbocharger boost sensor harness connector.
- Turn ignition switch ON.
- Check the voltage between turbocharger boost sensor harness connector and ground.

	+		\	
Turbocharge	boost sensor	_	Voltage (Approx.)	
Connector	Terminal		() 1 - 7	
F75 1		Ground	5 V	

Is the inspection result normal?

>> GO TO 3. NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check harness connector for short to power and short to ground, between the following terminals.

EC-325 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

INFOID:0000000011698855

Ν

Р

< DTC/CIRCUIT DIAGNOSIS >

ECM		Sensor			
Connector	Terminal	Name	Connector	Terminal	
		FRP sensor	F5	1	
F25	39	EOP sensor	F43	3	
		Turbocharger boost sensor	F75	1	
00	68	Battery current sensor	F52	1	
F26	00	G sensor	B32	3	
F20	72	CMP sensor		F109	1
		EVT control position sensor	F110	1	
E18	118	APP sensor 2	E101	5	

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected part.

${f 3.}$ CHECK TURBOCHARGER BOOST SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

+		-		
Turbocharger boost sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
F75	3	F25	44	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK TURBOCHARGER BOOST SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

	+			
Turbocharger boost sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
F75	2	F25	41	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK TURBOCHARGER BOOST SENSOR

Check the turbocharger boost sensor. Refer to EC-326, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor. Refer to EM-39, "Exploded View".

Component Inspection

INFOID:0000000011698856

1. CHECK TURBOCHARGER BOOST SENSOR

1. Turn ignition switch OFF.

P0235 TC BOOST SENSOR

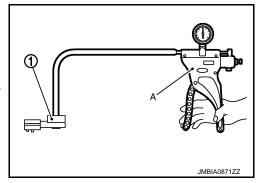
< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 2. Remove turbocharger boost sensor with its harness connector.
- 3. Install pressure pump (A) to turbocharger boost sensor ①. CAUTION:

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminals as per the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

ECM			O Title ID and O Delating to the	Mallana	
Connector	+	I	Condition [Pressure (Relative to atmospheric pressure)]	Voltage (Approx.)	
	Terminal		, , , , , , , , , , , , , , , , , , , ,	(FF :)	
F25	41	44	0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V	
	41 44 -		40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	2.67 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to EM-39, "Exploded View".

Α

EC

С

D

Е

F

G

Н

Κ

L

M

Ν

0

Р

P0237, P0238 TC BOOST SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0237	TC BOOST SEN/CIRC-B1 (Turbocharger boost sensor circuit low input)	An excessively low voltage from the turbocharger boost sensor is sent to ECM.	Harness or connectors (Turbocharger boost sensor circuit is open or shorted.)
P0238	TC BOOST SEN/CIRC-B1 (Turbocharger boost sensor circuit high input)	An excessively high voltage from the turbocharger boost sensor is sent to ECM.	(Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) Turbocharger boost sensor Fuel rail pressure sensor Battery current sensor G sensor Camshaft position sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-328, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461614

1. CHECK TURBOCHARGER BOOST SENSOR POWER SUPPLY

- Disconnect turbocharger boost sensor harness connector.
- Turn ignition switch ON.
- 3. Check the voltage between turbocharger boost sensor harness connector and ground.

P0237, P0238 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+		
Turbocharge	boost sensor	_	Voltage (Approx.)
Connector Terminal			, , ,
F75	F75 1		5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

ECM		Sensor			
Connector	Terminal	Name	Connector	Terminal	
		FRP sensor	F5	1	
F25	39	EOP sensor	F43	3	
		Turbocharger boost sensor	F75	1	
F26	68	Battery current sensor	F52	1	
	00	G sensor	B32	3	
	72	CMP sensor	F109	1	
	12	EVT control position sensor	F110	1	
E18	118	APP sensor 2	E101	5	

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK TURBOCHARGER BOOST SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

	+		_	
Turbocharger boost sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
F75	3	F25	44	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK TURBOCHARGER BOOST SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

	+	_		
Turbocharger boost sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
F75	2	F25	41	Existed

2. Also check harness for short to ground and to power.

EC

Α

D

Е

G

F

Н

Κ

L

N

N

Ν

P0237, P0238 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK TURBOCHARGER BOOST SENSOR

Check the turbocharger boost sensor. Refer to EC-330, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor. Refer to EM-39, "Exploded View".

Component Inspection

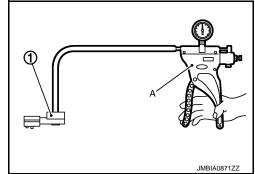
INFOID:0000000011461615

1. CHECK TURBOCHARGER BOOST SENSOR

- Turn ignition switch OFF.
- Remove turbocharger boost sensor with its harness connector.
- Install pressure pump (A) to turbocharger boost sensor (1). CAUTION:

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminals as per the following conditions.



NOTE:

- · Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

ECM			0 10 10 10	Valtage	
Connector + Term		-	Condition [Pressure (Relative to atmospheric pressure)]	Voltage (Approx.)	
		ninal	, , , , , , , , , , , , , , , , , , , ,	(11 /	
F25	41	44	0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V	
	41 44	40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	2.67 V		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to EM-39, "Exploded View".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0300, P0301, P0302, P0303, P0304 MISFIRE

DTC Logic INFOID:0000000011461616

DTC DETECTION LOGIC

When a misfire occurs, engine speed will fluctuate. If the engine speed fluctuates enough to cause the crankshaft position (CKP) sensor (POS) signal to vary, ECM can determine that a misfire is occurring.

Sensor	Input signal to ECM	ECM function
Crankshaft position sensor (POS)	Engine speed	On board diagnosis of misfire

The misfire detection logic consists of the following two conditions.

1. One Trip Detection Logic (Three Way Catalyst Damage)

On the 1st trip, when a misfire condition occurs that can damage the three way catalyst (TWC) due to overheating, the MIL will blink.

When a misfire condition occurs, the ECM monitors the CKP sensor signal every 200 engine revolutions for a change.

When the misfire condition decreases to a level that will not damage the TWC, the MIL will turn off. If another misfire condition occurs that can damage the TWC on a second trip, the MIL will blink. When the misfire condition decreases to a level that will not damage the TWC, the MIL will remain on. If another misfire condition occurs that can damage the TWC, the MIL will begin to blink again.

Two Trip Detection Logic (Exhaust quality deterioration)

For misfire conditions that will not damage the TWC (but will affect vehicle emissions), the MIL will only light when the misfire is detected on a second trip. During this condition, the ECM monitors the CKP sensor signal every 1,000 engine revolutions.

A misfire malfunction can be detected on any one cylinder or on multiple cylinders.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0300	MULTI CYL MISFIRE (Multiple cylinder misfire detected)	Multiple cylinder misfire.	Improper spark plug Insufficient compression
P0301	CYL 1 MISFIRE (No.1 cylinder misfire detected)	No. 1 cylinder misfires.	Incorrect fuel pressure Fuel Injector circuit is open or shorted
P0302	CYL 2 MISFIRE (No. 2 cylinder misfire detected)	No. 2 cylinder misfires.	Fuel injector Intake air leak Ignition signal circuit is open or shorted
P0303	CYL 3 MISFIRE (No. 3 cylinder misfire detected)	No. 3 cylinder misfires.	Lack of fuel Signal plate
P0304	CYL 4 MISFIRE (No. 4 cylinder misfire detected)	No. 4 cylinder misfires.	A/F sensor 1 Incorrect PCV hose connection

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Restart engine and let it idle for about 15 minutes.
- Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-332, "Diagnosis Procedure".

EC-331 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and drive the vehicle as per the similar conditions to (1st trip) Freeze Frame Data for a certain time. Refer to the table below.

Hold the accelerator pedal as steady as possible.

The similar conditions to (1st trip) Freeze Frame Data means the vehicle operation that the following conditions should be satisfied at the same time.

CAUTION:

Always drive vehicle in safe manner according to traffic conditions and obey all traffic laws when driving.

Engine speed	Engine speed in the freeze frame data \pm 400 rpm
Vehicle speed in the freeze frame data \pm 10 km/h (6 MPH)	
Engine coolant temperature (T) condition	When the freeze frame data shows lower than 70°C (158°F), T should be lower than 70°C (158°F).
	When the freeze frame data shows higher than or equal to 70°C (158°F), T should be higher than or equal to 70°C (158°F).

The time to driving varies according to the engine speed in the freeze frame data.

Engine speed	Time
Around 1,000 rpm	Approximately 10 minutes
Around 2,000 rpm	Approximately 5 minutes
More than 3,000 rpm	Approximately 3.5 minutes

3. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-332, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461617

1. CHECK FOR INTAKE AIR LEAK AND PCV HOSE

- 1. Start engine and run it at idle speed.
- Listen for the sound of the intake air leak.
- 3. Check PCV hose connection.

Is intake air leak detected?

YES >> Discover air leak location and repair.

NO >> GO TO 2.

2. CHECK FOR EXHAUST SYSTEM CLOGGING

Stop engine and visually check exhaust tube, three way catalyst and muffler for dents.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 3.

YES-2 >> Without CONSULT: GO TO 4.

NO >> Repair or replace it.

3. PERFORM POWER BALANCE TEST

(II) With CONSULT

- Start engine.
- Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Make sure that each circuit produces a momentary engine speed drop.

Is the inspection result normal?

YES >> GO TO 9. NO >> GO TO 4.

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

4. CHECK FUNCTION OF FUEL INJECTOR

- 1. Start engine and let engine idle.
- Listen to each fuel injector operating sound.

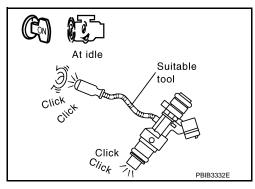
Clicking noise should be heard.

Is the inspection result normal?

YES >> GO TO 5.

NO

>> Perform trouble diagnosis for FUEL INJECTOR. Refer to EC-529, "Diagnosis Procedure".



5. CHECK FUNCTION OF IGNITION COIL-I

CAUTION:

Do the following procedure in the place where ventilation is good without the combustible.

- Turn ignition switch OFF.
- 2. Remove fuel pump fuse in IPDM E/R to release fuel pressure.

NOTE:

Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

- Start engine. 3.
- 4. After engine stalls, crank it two or three times to release all fuel pressure.
- Turn ignition switch OFF.
- 6. Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils.
- 7. Remove ignition coil and spark plug of the cylinder to be checked.
- 8. Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
- 9. Connect spark plug and harness connector to ignition coil.
- 10. Fix ignition coil using a rope etc. with gap of 13 17 mm (0.52 -0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
- 11. Crank engine for about 3 seconds, and check whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

CAUTION:

- Do not approach to the spark plug and the ignition coil within 50 cm (19.7 in). Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.
- It might cause to damage the ignition coil if the gap of more than 17 mm (0.66 in) is taken.

When the gap is less than 13 mm (0.52 in), the spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 6.

$oldsymbol{6}$.CHECK FUNCTION OF IGNITION COIL-II

- Turn ignition switch OFF.
- Disconnect spark plug and connect a known-good spark plug. 2.
- Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

Is the inspection result normal?

13 - 17 mm (0.52-0.66 in) Grounded metal portion (Cylinder head, cylinder block, etc.) .IMBIA0066GB

M

Α

EC

D

Е

Н

Ν

EC-333 Revision: 2014 October 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 7.

NO >> Check ignition coil, power transistor and their circuits. Refer to EC-542, "Diagnosis Procedure".

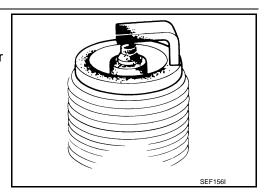
7.CHECK SPARK PLUG

Check the initial spark plug for fouling, etc.

Is the inspection result normal?

YES >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to EM-25, "Inspection".

NO >> Repair or clean spark plug. Then GO TO 8.



8. CHECK FUNCTION OF IGNITION COIL-III

- 1. Reconnect the initial spark plugs.
- 2. Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded portion.

Spark should be generated.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace spark plug(s) with standard type one(s). For spark plug type. Refer to <u>EM-24</u>, "<u>Removal and Installation</u>".

9. CHECK COMPRESSION PRESSURE

Check compression pressure. Refer to EM-17, "Inspection".

Is the inspection result normal?

YES >> GO TO 10.

NO >> Check pistons, piston rings, valves, valve seats and cylinder head gaskets.

10. CHECK FUEL PRESSURE

- 1. Install all removed parts.
- Release fuel pressure to zero.
- 3. Install fuel pressure gauge and check fuel pressure. Refer to EC-162, "Work Procedure".

At idling: Approximately 500 kPa (5.1 kg/cm², 73 psi)

Is the inspection result normal?

YES >> GO TO 12. NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check fuel hoses and fuel tubes for clogging.

Is the inspection result normal?

YES >> Replace "fuel filter and fuel pump assembly". Refer to FL-5, "2WD: Exploded View".

NO >> Repair or replace.

12. CHECK IGNITION TIMING

Check the following items.

For procedure, refer to EC-149, "Work Procedure".

For specification, refer to EC-579, "Ignition Timing".

Is the inspection result normal?

YES >> GO TO 13.

NO >> Follow the <u>EC-149</u>, "Work Procedure".

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

13. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect A/F sensor 1 harness connector.
- Disconnect ECM harness connector.
- 4. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

	+		-	
A/F se	ensor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F70	1	F25	21	Existed

5. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

+			
A/F sensor 1		_	Continuity
Connector	Terminal		
F70	1	Ground	Not existed

+ ECM		_	Continuity	
Connector	Terminal			
F25	21	Ground	Not existed	

6. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

14.CHECK A/F SENSOR 1 HEATER

Check the A/F sensor 1 heater. Refer to EC-200, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace A/F sensor 1. Refer to EM-43, "Exploded View".

15. CHECK MASS AIR FLOW SENSOR

(P)With CONSULT

Check "MASS AIRFLOW" in "DATA MONITOR" mode of "ENGINE" using CONSULT.

1.0 - 4.0 g/s : at idling 2.0 - 10.0 g/s : at 2,500 rpm

With GST

Check mass air flow sensor signal in Service \$01 with GST.

1.0 - 4.0 g/s : at idling 2.0 - 10.0 q/s : at 2,500 rpm

Is the measurement value within the specification?

YES >> GO TO 16.

NO >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or ground. Refer to EC-234, "DTC Logic".

16. CHECK SYMPTOM TABLE

Check items on the rough idle symptom in EC-564, "Symptom Table".

Is the inspection result normal?

EC-335 Revision: 2014 October 2015 JUKE

EC

D

Е

F

K

L

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 17.

NO >> Repair or replace error-detected parts.

17. ERASE THE 1ST TRIP DTC

Some tests may cause a 1st trip DTC to be set.

Erase the 1st trip DTC from the ECM memory after performing the tests. Refer to <u>EC-72, "Diagnosis Description"</u>.

>> GO TO 18.

18. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

>> INSPECTION END

[MR FOR NISMO RS MODELS]

P0327, P0328 KS

DTC Logic INFOID:0000000011461618

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detected condition	Possible cause	
P0327	KNOCK SEN/CIRC-B1 (Knock sensor circuit low input)	An excessively low voltage from the knock sensor is sent to ECM.	Harness or connectors (Knock sensor circuit is open or short-	
P0328	KNOCK SEN/CIRC-B1 (Knock sensor circuit high input)	An excessively high voltage from the knock sensor is sent to ECM.	ed.) • Knock sensor	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and run it for at least 5 seconds at idle speed.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-337, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

CHECK KNOCK SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect knock sensor harness connector.
- Disconnect ECM harness connector.
- Check the continuity between knock sensor harness connector and ECM harness connector.

	+	_		
Knock	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F12	2	F25	35	Existed

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK KNOCK SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between knock sensor harness connector and ECM harness connector.

EC

Α

Е

D

F

Н

K

INFOID:0000000011461619

N

Р

2015 JUKE

INFOID:0000000011461620

	+ -			
Knock	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F12	1	F25	36	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

3. CHECK KNOCK SENSOR

Check the knock sensor. Refer to EC-338, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace knock sensor. Refer to EM-113, "Exploded View".

Component Inspection

1. CHECK KNOCK SENSOR

- 1. Turn ignition switch OFF.
- 2. Disconnect knock sensor harness connector.
- 3. Check resistance between knock sensor terminals as per the following.

NOTE:

It is necessary to use an ohmmeter which can measure more than 10 M Ω .

Knock sensor		
+	-	Resistance
Terminals		
1	2	Approx. 532 - 588 kΩ [at 20°C (68°F)]

CAUTION:

Do not use any knock sensors that have been dropped or physically damaged. Use only new ones.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace knock sensor. Refer to EM-113, "Exploded View".

Α

EC

D

Е

F

Н

K

Ν

Р

INFOID:0000000011461622

P0335 CKP SENSOR (POS)

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0340 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to <u>EC-420</u>, "<u>DTC Logic</u>".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0335	CKP SEN/CIRCUIT [Crankshaft position sensor (POS) circuit]	 The crankshaft position sensor (POS) signal is not detected by the ECM during the first few seconds of engine cranking. The proper pulse signal from the crankshaft position sensor (POS) is not sent to ECM while the engine is running. The crankshaft position sensor (POS) signal is not in the normal pattern during engine running. 	Harness or connectors [Crankshaft position sensor (POS) circuit is open or shorted.] Crankshaft position sensor (POS) Signal plate

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for at least 5 seconds.
 If engine does not start, crank engine for at least 2 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-339, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK CRANKSHAFT POSITION (CKP) SENSOR (POS) POWER SUPPLY

- 1. Disconnect crankshaft position (CKP) sensor (POS) harness connector.
- Turn ignition switch ON.
- 3. Check the voltage between CKP sensor (POS) harness connector and ground.

+			\/alta aa	
CKP sensor (POS)		_	Voltage (Approx.)	
Connector	Terminal		,	
F107	3	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK CKP SENSOR (POS) POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

	+		_	
CKP sen	sor (POS)	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F107	3	F26	58	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK CKP SENSOR (POS) GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

	+		_	
CKP sen	sor (POS)	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F107	2	F26	60	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK CKP SENSOR (POS) INPUT SIGNAL CIRCUIT

1. Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

	+		_	
CKP sen	sor (POS)	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F107	1	F26	64	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK CRANKSHAFT POSITION SENSOR (POS)

Check the crankshaft position sensor (POS). Refer to EC-341, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace crankshaft position sensor (POS). Refer to EM-113, "Exploded View".

6.CHECK GEAR TOOTH

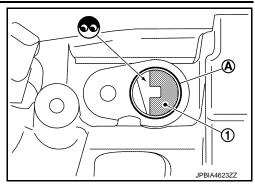
1. Remove crankshaft position sensor (POS). Refer to EM-113, "Exploded View".

P0335 CKP SENSOR (POS)

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

2. Look into the mounting hole (A) of the crankshaft position sensor (POS) to check that there is no missing gear tooth in the signal plate (1).



EC

Α

С

D

Е

F

Н

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace the signal plate. Refer to EM-113, "Exploded View".

Component Inspection

INFOID:0000000011461623

1.CHECK CRANKSHAFT POSITION SENSOR (POS)-I

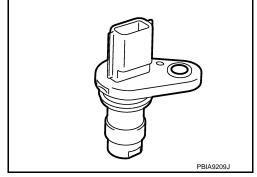
- 1. Turn ignition switch OFF.
- 2. Loosen the fixing bolt of the sensor.
- 3. Disconnect crankshaft position sensor (POS) harness connector.
- 4. Remove the sensor.
- 5. Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace

>> Replace crankshaft position sensor (POS). Refer to EM-113, "Exploded View".



2.CHECK CRANKSHAFT POSITION SENSOR (POS)-II

Check the resistance between crankshaft position sensor (POS) terminals as per the following.

Crankshaft posit	ion sensor (POS)	
+ -		Resistance [at 25°C (77°F)]
Terminal	(Polarity)	
1	2	
I	3	Except 0 or $\infty \Omega$
2	3	

Ν

K

Is the inspection result normal?

YES >> INSPECTION END NO >> Replace crankshaft position sensor (POS). Refer to EM-113, "Exploded View".

EC-341

Р

2015 JUKE

[MR FOR NISMO RS MODELS]

P0340 CMP SENSOR (PHASE)

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0340	CMP SEN/CIRC-B1 [Camshaft position sensor (PHASE) circuit]	 The cylinder No. signal is not sent to ECM for the first few seconds during engine cranking. The cylinder No. signal is not sent to ECM during engine running. The cylinder No. signal is not in the normal pattern during engine running. 	Harness or connectors (Camshaft position sensor circuit is open or shorted) (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Fuel rail pressure sensor Battery current sensor G sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

- Start engine and let it idle for at least 5 seconds.
 If engine does not start, crank engine for at least 2 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-343, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-I

P0340 CMP SENSOR (PHASE)

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Maintaining engine speed at more than 800 rpm for at least 5 seconds.

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-343, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461625

1. CHECK STARTING SYSTEM

Turn ignition switch to START position.

Does the engine turn over? Does the starter motor operate?

YES >> GO TO 2.

NO

>> Check starting system (Refer to STR-16, "Work Flow (With GR8-1200 NI)" or STR-19, "Work Flow (Without GR8-1200 NI)". For the details of the GR8-1200 NI, refer to STR-3, "Special Service Tools".).

2.CHECK CAMSHAFT POSITION (CMP) SENSOR (PHASE) POWER SUPPLY

Turn ignition switch OFF.

- 2. Disconnect camshaft position (CMP) sensor (PHASE) harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between CMP sensor (PHASE) harness connector and ground.

+			\	
CMP sensor (PHASE)		_	Voltage (Approx.)	
Connector	Terminal		, , ,	
F109	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

${f 3.}$ CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check harness connector for short to power and short to ground, between the following terminals.

E	ECM Sensor			
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1
	68	Battery current sensor	F52	1
F26	00	G sensor	B32	3
1 20	72	CMP sensor	F109	1
	12	EVT control position sensor	F110	1
E18	118	118 APP sensor 2		5

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK CMP SENSOR (PHASE) GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between CMP sensor (PHASE) harness connector and ECM harness connector.

EC-343 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

N

Р

	+		_	
CMP sense	or (PHASE)	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F109	2	F26	59	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.check cmp sensor (phase) input signal circuit

- 1. Disconnect ECM harness connector.
- 2. Check the continuity between CMP sensor (PHASE) harness connector and ECM harness connector.

	+		_	
CMP sense	or (PHASE)	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F109	3	F26	63	Existed

3. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6. CHECK CAMSHAFT POSITION SENSOR (PHASE)

Check the camshaft position sensor (PHASE). Refer to EC-344, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace camshaft position sensor (PHASE). Refer to EM-88, "Removal and Installation".

7. CHECK CAMSHAFT (INT)

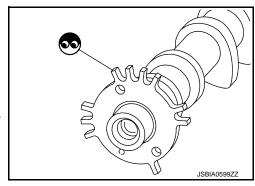
Check the following.

- Accumulation of debris to the signal plate of camshaft rear end
- Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> Check intermittent incident. Refer to <u>GI-44, "Intermittent Incident"</u>.

NO >> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to EM-88, "Removal and Installation".



INFOID:0000000011461626

Component Inspection

1. CHECK CAMSHAFT POSITION SENSOR (PHASE)-I

- 1. Turn ignition switch OFF.
- Loosen the fixing bolt of the sensor.
- 3. Disconnect camshaft position sensor (PHASE) harness connector.
- 4. Remove the sensor.

P0340 CMP SENSOR (PHASE)

< DTC/CIRCUIT DIAGNOSIS >

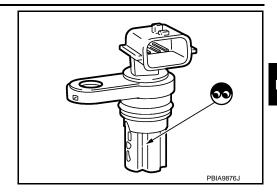
[MR FOR NISMO RS MODELS]

5. Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace camshaft position sensor (PHASE).



$2. \hbox{CHECK CAMSHAFT POSITION SENSOR (PHASE)-II}$

Check the resistance camshaft position sensor (PHASE) terminals as per the following.

Camshaft position sensor (PHASE)			
+	_	Resistance [Ω at 25°C (77°F)]	
Terminal	s (Polarity)		
1	2		
ı	3	Except 0 or ∞	
2	3		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace camshaft position sensor (PHASE). Refer to EM-88, "Removal and Installation".

Α

EC

С

D

Е

F

G

Н

K

L

M

Ν

0

Р

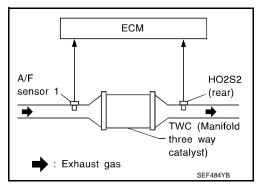
DTC Logic

DTC DETECTION LOGIC

The ECM monitors the switching frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2.

A three way catalyst (manifold) with high oxygen storage capacity will indicate a low switching frequency of heated oxygen sensor 2. As oxygen storage capacity decreases, the heated oxygen sensor 2 switching frequency will increase.

When the frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2 approaches a specified limit value, the three way catalyst (manifold) malfunction is diagnosed.



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0420	TW CATALYST SYS-B1 (Catalyst system efficiency below threshold)	 Three way catalyst (manifold) does not operate properly. Three way catalyst (manifold) does not have enough oxygen storage capacity. 	Three way catalyst (manifold) Exhaust tube Intake air leaks Fuel injector Fuel injector leaks Spark plug Improper ignition timing

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

Will CONSULT be used?

YES >> GO TO 2. NO >> GO TO 6.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

With CONSULT

TESTING CONDITION:

Do not hold engine speed for more than the specified minutes below.

- 1. Start engine and warm it up to the normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 6. Let engine idle for 1 minute.
- 7. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 8. Check that "COOLAN TEMP/S" indicates more than 70°C (158°F).

 If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches to 70°C (158°F).
- Open engine hood.
- Select "DTC & SRT CONFIRMATION" then "SRT WORK SUPPORT" mode of "ENGINE" using CON-SULT.
- 11. Rev engine up to 2,000 to 3,000 rpm and hold it for 3 consecutive minutes then release the accelerator pedal completely.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

D

Е

F

Н

M

N

Р

INFOID:0000000011461628

40	OL 1.41		("O ATALXOT	-,,
12.	Check the	indication	of "CATALYST	<i>"</i> .

Which is displayed on CONSULT screen?

CMPLT>> GO TO 5.

INCMP >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

Wait 5 seconds at idle.

Rev engine up to 2,000 to 3,000 rpm and maintain it until "INCMP" of "CATALYST" changes to "CMPLT" (It will take approximately 5 minutes).

Does the indication change to "CMPLT"?

YES >> GO TO 5.

NO >> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

- 1. Stop engine and cool it down to less than 70°C (158°F).
- 2. Perform DTC confirmation procedure again.

>> GO TO 2.

5. PERFORM DTC CONFIRMATION PROCEDURE-III

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-348, "Diagnosis Procedure".

NO >> INSPECTION END

6.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-347, "Component Function Check".

NOTE:

Use component function check to check the overall function of the three way catalyst (manifold). During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-348, "Diagnosis Procedure".

Component Function Check

1. PERFORM COMPONENT FUNCTION CHECK

Without CONSULT

- 1. Start engine and warm it up to the normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Restart engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 4. Let engine idle for 1 minute.
- Open engine hood.
- Check the voltage between ECM harness connector terminals as per the following condition.

ECM					
Connector	+	_	Condition	Voltage (V)	
Connector	Terminal				
F25	29	33	Keeping engine speed at 2500 rpm constant under no load	The voltage fluctuation cycle takes more than 5 seconds. • 1 cycle: 0.6 - 1.0 → 0 - 0.3 → 0.6 - 1.0	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-348, "Diagnosis Procedure".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011461629

1. CHECK EXHAUST SYSTEM

Visually check exhaust tubes and muffler for dent.

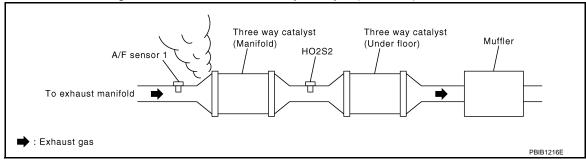
Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2. CHECK EXHAUST GAS LEAK

- 1. Start engine and run it at idle.
- 2. Listen for an exhaust gas leak before the three way catalyst (manifold).



Is exhaust gas leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 3.

3. CHECK INTAKE AIR LEAK

Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 4.

4.CHECK IGNITION TIMING AND IDLE SPEED

Check the following items. Refer to EC-149, "Work Procedure".

For specification, refer to EC-579, "Ignition Timing"

For specification, refer to EC-579, "Idle Speed".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Follow the <u>EC-149</u>, "Work Procedure".

5. CHECK FUEL INJECTOR

Check the fuel injector. Refer to EC-529, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 6.

NO >> Perform <u>EC-529</u>, "<u>Diagnosis Procedure</u>".

$\mathsf{6}.$ CHECK FUNCTION OF IGNITION COIL-I

CAUTION:

Do the following procedure in the place where ventilation is good without the combustible.

- 1. Turn ignition switch OFF.
- 2. Remove fuel pump fuse in IPDM E/R to release fuel pressure.

NOTE:

Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

- 3. Start engine.
- 4. After engine stalls, crank it two or three times to release all fuel pressure.
- 5. Turn ignition switch OFF.
- 6. Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils.
- 7. Remove ignition coil and spark plug of the cylinder to be checked.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
- 9. Connect spark plug and harness connector to ignition coil.
- 10. Fix ignition coil using a rope etc. with gap of 13 17 mm (0.52 0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
- 11. Crank engine for about 3 seconds, and check whether spark is generated between the spark plug and the grounded metal portion.



display 13 - 17 mm (0.52-0.66 in)

Grounded metal portion (Cylinder head, cylinder block, etc.)

IMBIAGOSS

Spark should be generated.

CAUTION:

- Do not approach to the spark plug and the ignition coil within 50 cm (19.7 in). Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.
- It might cause to damage the ignition coil if the gap of more than 17 mm (0.66 in) is taken. NOTE:

When the gap is less than 13 mm (0.52 in), the spark might be generated even if the coil is malfunctioning.

<u>Is the inspection result normal?</u>

YES >> GO TO 10.

NO >> GO TO 7.

7.CHECK FUNCTION OF IGNITION COIL-II

- Turn ignition switch OFF.
- 2. Disconnect spark plug and connect a known-good spark plug.
- Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

Is the inspection result normal?

YES >> GO TO 8.

NO

NO >> Check ignition coil, power transistor and their circuits. Refer to <u>EC-542</u>. "Diagnosis Procedure".

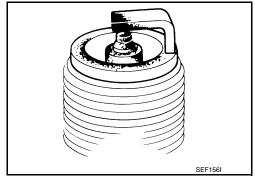
8. CHECK SPARK PLUG

Check the initial spark plug for fouling, etc. Refer to <a>EM-25, "Inspection".

Is the inspection result normal?

YES >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to EM-25, "Inspection".

Repair or clean spark plug. Refer to EM-59, "Exploded View". Then GO TO 9



9. CHECK FUNCTION OF IGNITION COIL-III

- Reconnect the initial spark plugs.
- Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded portion.

Spark should be generated.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to <u>EM-24, "Removal and Installation"</u>.

EC

Α

D

F

G

Н

1 1

ı

K

L

M

N

Р

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

10. CHECK FUEL INJECTOR

- 1. Turn ignition switch OFF.
- 2. Remove fuel injector assembly.

Refer to EM-53, "Exploded View".

- Keep fuel hose and all fuel injectors connected to fuel tube.
- 3. Disconnect all ignition coil harness connectors.
- 4. Reconnect all fuel injector harness connectors disconnected.
- 5. Turn ignition switch ON.

Does fuel drip from fuel injector?

YES >> GO TO 11.

NO >> Replace the fuel injector(s) from which fuel is dripping. Refer to EM-53, "Exploded View".

11. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the trouble fixed?

YES >> INSPECTION END

NO >> Replace three way catalyst assembly. Refer to EM-34, "2WD : Exploded View" (2WD), EM-36, "AWD : Exploded View" (AWD).

DTC Logic INFOID:0000000011461630

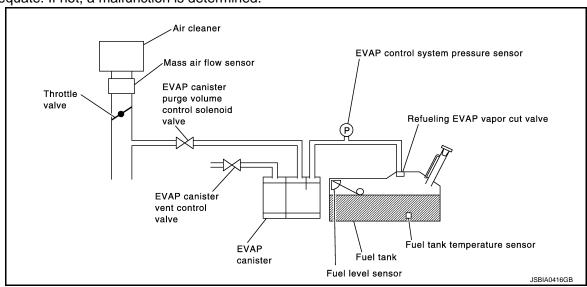
DTC DETECTION LOGIC

NOTE:

If DTC P0441 is displayed with other DTC such as P2122, P2123, P2127, P2128 or P2138, first perform trouble diagnosis for other DTC.

In this evaporative emission (EVAP) control system, purge flow occurs during non-closed throttle conditions. Purge volume is related to air intake volume. Under normal purge conditions (non-closed throttle), the EVAP canister purge volume control solenoid valve is open to admit purge flow. Purge flow exposes the EVAP control system pressure sensor to intake manifold vacuum.

Under normal conditions (non-closed throttle), sensor output voltage indicates if pressure drop and purge flow are adequate. If not, a malfunction is determined.



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0441	EVAP PURG FLOW/MON (EVAP control system incorrect purge flow)	EVAP control system does not operate properly, EVAP control system has a leak between intake manifold and EVAP control system pressure sensor.	EVAP canister purge volume control sole- noid valve stuck closed EVAP control system pressure sensor and the circuit Loose, disconnected or improper connection of rubber tube Blocked rubber tube Cracked EVAP canister EVAP canister purge volume control sole- noid valve circuit Accelerator pedal position sensor Blocked purge port EVAP canister vent control valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

Will CONSULT be used?

YES >> GO TO 2.

>> GO TO 5. NO

EC-351 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

2.PERFORM DTC CONFIRMATION PROCEDURE-I

(P)WITH CONSULT

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and let it idle for at least 70 seconds.
- Select "PURG FLOW P0441" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 7. Touch "START".

Is "COMPLETED" displayed on CONSULT screen?

YES >> GO TO 4. NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

When the following conditions are met, "TESTING" will be displayed on the CONSULT screen. Maintain the conditions continuously until "TESTING" changes to "COMPLETED". (It will take at least 35 seconds.)

Selector lever	Suitable position
VHCL SPEED SE	32 - 120 km/h (20 - 75 MPH)
ENG SPEED	500 - 3,300 rpm
B/FUEL SCHDL	1.0 - 6.5 msec
COOLAN TEMP/S	More than 0°C (32°F)

CAUTION:

Always drive vehicle at a safe speed.

NOTE

If "TESTING" does not change for a long time, retry from step 2.

Is "COMPLETED" displayed on CONSULT screen?

YES >> GO TO 4.

NO >> Perform DTC CONFIRMATION PROCEDURE again. GO TO 2.

4. PERFORM DTC CONFIRMATION PROCEDURE-III

Touch "SELF-DIAG RESULTS".

Which is displayed on CONSULT screen?

OK >> INSPECTION END

NG >> Proceed to <u>EC-353</u>, "<u>Diagnosis Procedure</u>".

5. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to <a>EC-352, "Component Function Check".

NOTE:

Use component function check to check the overall monitoring function of the EVAP control system purge flow monitoring. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-353, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011461631

1. PERFORM COMPONENT FUNCTION CHECK

- 1. Lift up drive wheels.
- Start engine (VDC switch OFF) and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Start engine and wait at least 70 seconds.
- Set voltmeter probes to ECM harness connector terminals as per the following.

ECM				
Connector	+	_		
Connector	Terr	ninal		
F25	15	12		

6. Check EVAP control system pressure sensor value at idle speed and note it.

7. Establish and maintain the following conditions for at least 1 minute.

Air conditioner switch	ON
Headlamp switch	ON
Rear window defogger switch	ON
Engine speed	Approx. 3,000 rpm
Gear position	Any position other than P, N or R

Verify that EVAP control system pressure sensor value stays 0.1 V less than the value at idle speed (measured at step 6) for at least 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-353, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK EVAP CANISTER

- 1. Turn ignition switch OFF.
- 2. Check EVAP canister for cracks.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 2.

YES-2 >> Without CONSULT: GO TO 3.

NO >> Replace EVAP canister. Refer to <u>FL-26, "2WD : Removal and Installation"</u>(2WD), <u>FL-29, "AWD : Removal and Installation"</u>(AWD).

2. CHECK PURGE FLOW

(II) WITH CONSULT

- 1. Disconnect vacuum hose connected to EVAP canister purge volume control solenoid valve at EVAP service port.
- Start engine and let it idle.
- Select "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 4. Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL CONT/V" opening and check vacuum existence.

PURG VOL CONT/V	Vacuum
100%	Existed
0%	Not existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 4.

3. CHECK PURGE FLOW

NWITHOUT CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Stop engine.

EC

Α

D

Е

G

Н

INFOID:0000000011461632

J

K

M

Ν

 \circ

Р

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Disconnect vacuum hose connected to EVAP canister purge volume control solenoid valve at EVAP service port and install vacuum gauge. For the location of EVAP service port, refer to <u>EC-65, "EVAPORATIVE EMISSION SYSTEM: System Description".
 </u>
- 4. Start engine and let it idle.

Never depress accelerator pedal even slightly.

5. Check vacuum gauge indication before 60 seconds pass after starting engine.

Vacuum should not exist.

6. Rev engine up to 2,000 rpm after 100 seconds pass after starting engine.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 7. NO >> GO TO 4.

4. CHECK EVAP PURGE LINE

- 1. Turn ignition switch OFF.
- Check EVAP purge line for improper connection or disconnection. Refer to <u>EC-574</u>, "Inspection".

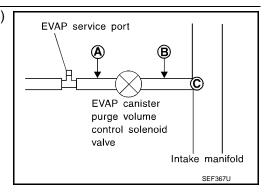
Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair EVAP purge line.

CHECK EVAP PURGE HOSE AND PURGE PORT

- 1. Disconnect purge hoses connected to EVAP service port (A) and EVAP canister purge volume control solenoid valve (B).
- 2. Blow air into each hose and EVAP purge port (C).

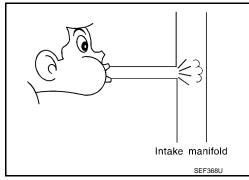


3. Check that air flows freely.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 6. YES-2 >> Without CONSULT: GO TO 7.

NO >> Repair or clean hoses and/or purge port.



6. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

(P)WITH CONSULT

- Start engine.
- Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT. Check that
 engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

YES >> GO TO 8. NO >> GO TO 7.

< DTC/CIRCUIT DIAGNOSIS >

>> INSPECTION END

[MR FOR NISMO RS MODELS]

7. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE	А			
Check the EVAP canister purge volume control solenoid valve. Refer to EC-359. "Component Inspection".	7 (
Is the inspection result normal?				
	EC			
NO >> Replace EVAP canister purge volume control solenoid valve. Refer to FL-26, "2WD : Exploded View".				
8. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR	С			
 Disconnect EVAP control system pressure sensor harness connector. Check that water is not inside connectors. 				
Is the inspection result normal?	D			
YES >> GO TO 9.				
NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"</u> (2WD), <u>FL-29, "AWD : Exploded View"</u> (AWD).	Е			
9. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR FUNCTION				
Refer to EC-376, "DTC Logic" for DTC P0452, EC-379, "DTC Logic" for DTC P0453.	F			
Is the inspection result normal?				
YES >> GO TO 10. NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"</u> (2WD), <u>FL-29, "AWD : Exploded View"</u> (AWD).	G			
10.check rubber tube for clogging				
Disconnect rubber tube connected to EVAP canister vent control valve.	Н			
2. Check the rubber tube for clogging.				
Is the inspection result normal? YES >> GO TO 11.	ı			
NO >> Clean the rubber tube using an air blower.				
11. CHECK EVAP CANISTER VENT CONTROL VALVE				
Check the EVAP canister vent control valve. Refer to EC-366, "Component Inspection".	J			
Is the inspection result normal?				
YES >> GO TO 12.	K			
NO >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Exploded View"</u> (2WD), <u>FL-29, "AWD : Exploded View"</u> (AWD).				
12.check evap purge line	L			
Inspect EVAP purge line (pipe and rubber tube). Check for evidence of leaks. Refer to <u>EC-575</u> , "Inspection".				
Is the inspection result normal?	\mathbb{N}			
YES >> GO TO 13.				
NO >> Repair or replace malfunctioning part.	NI			
13.clean evap purge line	N			
Clean EVAP purge line (pipe and rubber tube) using air blower.				
>> GO TO 14.	0			
14. CHECK INTERMITTENT INCIDENT				
Perform GI-44, "Intermittent Incident".				

Revision: 2014 October EC-355 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition		Possible cause	
P0443	PURG VOLUME CONT/ V (EVAP canister purge volume control solenoid valve)	А	The canister purge flow is detected during the vehicle is stopped while the engine is running, even when EVAP canister purge volume control solenoid valve is completely closed.	 EVAP control system pressure sensor EVAP canister purge volume control solenoid valve (The valve is stuck open.) EVAP canister vent control valve 	
		В	The canister purge flow is detected during the specified driving conditions, even when EVAP canister purge volume control solenoid valve is completely closed.	 EVAP canister Hoses (Hoses are connected incorrectly or clogged.) 	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Perform DTC CONFIRMATION PROCEDURE when the fuel is between 1/4 and 3/4 full, and vehicle is placed on flat level surface.
- Always perform test at a temperature of 5 to 60°C (41 to 140°F).
- Cool the vehicle so that engine coolant temperature becomes same level as ambient temperature.

Do you have CONSULT

YES >> GO TO 2. NO >> GO TO 4.

2.PERFORM DTC CONFIRMATION PROCEDURE A

(P)With CONSULT

- Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check that the following condition are met. FUEL T/TMP SE: 0 35°C (32 95°F)
- 4. Start the engine and wait at least 60 seconds.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-357, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE B

(P)With CONSULT

- 1. Start the engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- Select "PURG VOL CN/V P1444" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 5. Touch "START".
- 6. Start the engine and let it idle until "TESTING" on CONSULT changes to "COMPLETED". (It will take approximately 10 seconds.)

If "TESTING" is not displayed after 5 minutes, retry from step 2.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

D

Е

K

M

N

INFOID:0000000011461634

Touch "SELF-DIAG RESI

Which is displayed on CONSULT?

OK >> INSPECTION END

NG >> Proceed to <u>EC-357</u>, "<u>Diagnosis Procedure</u>".

4. PERFORM DTC CONFIRMATION PROCEDURE A

With GST

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector and ground.

	+			
I	ECM	_	Voltage	
Connector Terminal				
F25	15	Ground	3.1 - 4.0 V	

- 3. Start the engine and wait at least 60 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-357</u>, "<u>Diagnosis Procedure</u>".

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE

With GST

- 1. Start the engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start the engine and let it idle for at least 20 seconds.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-357, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect EVAP canister purge volume control solenoid valve harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between EVAP canister purge volume control solenoid valve harness connector and ground.

-	+		
	purge volume enoid valve	_	Voltage
Connector	Terminal		
F106	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between EVAP canister purge volume control solenoid valve harness connector and IPDM E/R harness connector.

Revision: 2014 October EC-357 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

+		_		
EVAP canister purge volume control solenoid valve		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F106	2	E14	35	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check evap canister purge volume control solenoid valve ground circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP canister purge volume control solenoid valve harness connector and ECM harness connector.

+		-			
•	EVAP canister purge volume control solenoid valve		ECM		Continuity
٠	Connector	Terminal	Connector	Terminal	
	F106	1	F26	95	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

- 1. Disconnect EVAP control system pressure sensor harness connector.
- Check connectors for water.

Water should not exist.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-29, "AWD : Exploded View"</u>(AWD).

5. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check the EVAP control system pressure sensor. Refer to EC-359, "Component Inspection".

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 6.

YES-2 >> Without CONSULT: GO TO 7.

NO >> Replace EVAP control system pressure sensor. Refrt to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-29, "AWD : Exploded View"</u>(AWD).

6.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

(I) With CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect harness connectors disconnected.
- 3. Start the engine.
- 4. Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT. Check that engine speed varies according to the valve opening.

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 7.

Revision: 2014 October EC-358 2015 JUKE

P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE [MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

7.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Check the EVAP canister purge volume control solenoid valve. Refer to EC-359, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to EM-29, "Exploded View".

8.CHECK RUBBER TUBE FOR CLOGGING

Disconnect rubber tube connected to EVAP canister vent control valve.

Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Clean the rubber tube using an air blower.

9. CHECK EVAP CANISTER VENT CONTROL VALVE

Check the EVAP canister vent control valve. Refer to EC-366, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 10.

>> Replace EVAP canister vent control valve. Refer to FL-26, "2WD: Exploded View" (2WD), FL-29, NO "AWD: Exploded View" (AWD).

10. CHECK IF EVAP CANISTER IS SATURATED WITH WATER

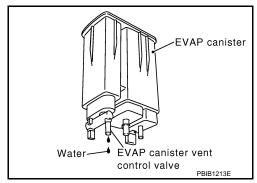
Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

Check if water will drain from EVAP canister.

Does water drain from the EVAP canister?

YES >> GO TO 11.

NO >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".



11. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 12.

12. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to FL-26. "2WD : Exploded View" (2WD), FL-29. "AWD: Exploded View" (AWD).

Component Inspection

${f 1}$.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

(II) With CONSULT

- Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.

EC

Α

D

F

Н

M

N

2015 JUKE

INFOID:0000000011461635

Revision: 2014 October

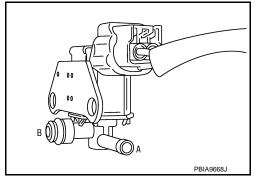
EC-359

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
- 4. Start the engine.
- 5. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL C/V" opening and check air passage continuity of EVAP canister purge volume control solenoid valve as per the following conditions.

Condition (PURG VOL C/V value)	Air passage continuity between (A) and (B)
100%	Existed
0%	Not existed



♥Without CONSULT

- 1. Turn ignition switch OFF.
- 2. Disconnect EVAP canister purge volume control solenoid valve harness connector.
- 3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
- 4. Check air passage continuity of EVAP canister purge volume control solenoid valve as per the following conditions.

Condition	Air passage continuity between (A) and (B)	
12 V direct current supply between terminals 1 and 2	Existed	
No supply	Not existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to EM-29, "Exploded View".

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID **VALVE**

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

DTC Logic INFOID:0000000011461636

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0444	PURG VOLUME CONT/V (EVAP canister purge volume control solenoid valve circuit open)	An excessively low voltage signal is sent to ECM through the EVAP canister purge volume control solenoid valve.	Harness or connectors (EVAP canister purge volume control solenoid valve circuit is open or shorted.) EVAP canister purge volume control solenoid valve
P0445	PURG VOLUME CONT/V (EVAP canister purge volume control solenoid valve circuit shorted)	An excessively high voltage signal is sent to ECM through the valve	Harness or connectors (The solenoid valve circuit is shorted.) EVAP canister purge volume control solenoid valve

DTC CONFIRMATION PROCEDURE

1.CONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm battery voltage is more than 11 V at idle.

>> GO TO 2.

2.perform dtc confirmation procedure

- Start the engine and let it idle for at least 13 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-361, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461637

1.check evap canister purge volume control solenoid valve power supply

- Turn ignition switch OFF.
- Disconnect EVAP canister purge volume control solenoid valve harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between EVAP canister purge volume control solenoid valve harness connector and ground.

+			
	purge volume enoid valve	_	Voltage
Connector Terminal			
F106	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

EC-361 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

Ν

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

2.check evap canister purge volume control solenoid valve power supply circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between EVAP canister purge volume control solenoid valve harness connector and IPDM E/R harness connector.

+		-	_	
EVAP canister purge volume control solenoid valve		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F106	2	E14	35	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP canister purge volume control solenoid valve harness connector and ECM harness connector.

+			_	
EVAP canister purge volume control solenoid valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F106	1	F26	95	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 4.

YES-2 >> Without CONSULT: GO TO 5.

NO >> Repair or replace error-detected parts.

4. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

(P)With CONSULT

- 1. Reconnect all harness connectors disconnected.
- Start the engine.
- 3. Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 4. Check that engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 5.

${f 5.}$ CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Check the EVAP canister purge volume control solenoid valve. Refer to <u>EC-359</u>, "Component Inspection". <u>Is the inspection result normal?</u>

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to <u>EM-29</u>, "<u>Exploded View</u>".

Component Inspection

INFOID:0000000011461638

1. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

(P)With CONSULT

1. Turn ignition switch OFF.

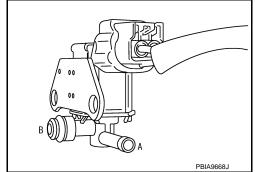
P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 2. Reconnect all harness connectors disconnected.
- 3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
- 4. Start the engine.
- 5. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL C/V" opening and check air passage continuity of EVAP canister purge volume control solenoid valve as per the following conditions.

Condition (PURG VOL C/V value)	Air passage continuity between (A) and (B)
100%	Existed
0%	Not existed



С

EC

Α

D

Е

F

- Turn ignition switch OFF.
- 2. Disconnect EVAP canister purge volume control solenoid valve harness connector.
- 3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
- 4. Check air passage continuity of EVAP canister purge volume control solenoid valve as per the following conditions.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Existed
No supply	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to EM-29, "Exploded View".

Н

ı

K

L

M

Ν

0

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0447 EVAP CANISTER VENT CONTROL VALVE

DTC Logic INFOID:000000011461639

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0447	VENT CONTROL VALVE (EVAP canister vent control valve circuit open)	An improper voltage signal is sent to ECM through EVAP canister vent control valve.	Harness or connectors (EVAP canister vent control valve circuit is open or shorted.) EVAP canister vent control valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait at least 8 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-364, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461640

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK EVAP CANISTER VENT CONTROL VALVE CIRCUIT

(P)With CONSULT

- 1. Turn ignition switch OFF and then turn ON.
- 2. Select "VENT CONTROL/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Touch "ON/OFF" on CONSULT screen.
- Check for operating sound of the valve.

Clicking sound should be heard.

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 3.

3. CHECK EVAP CANISTER VENT CONTROL VALVE POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect EVAP canister vent control valve harness connector.
- 3. Turn ignition switch ON.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Check the voltage between EVAP canister vent control valve harness connector and ground.

	+		
EVAP canister v	ent control valve	_	Voltage
Connector Terminal			
B21	1	Ground	Battery voltage

EC

Α

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4.CHECK EVAP CANISTER VENT CONTROL VALVE POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between EVAP canister vent control valve harness connector and IPDM E/R harness connector.

+			_	
EVAP canister vent control valve		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
B21	1	E14	36	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 5.}$ CHECK EVAP CANISTER VENT CONTROL VALVE OUTPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between EVAP canister vent control valve harness connector and ECM harness connector.

+			_	
EVAP canister vent control valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B21	2	F26	69	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK RUBBER TUBE FOR CLOGGING

- Disconnect rubber tube connected to EVAP canister vent control valve.
- Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Clean the rubber tube using an air blower.

7.CHECK EVAP CANISTER VENT CONTROL VALVE

Check the EVAP canister vent control valve. Refer to EC-366, "Component Inspection".

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

EC-365 Revision: 2014 October 2015 JUKE

D

Е

F

K

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> Replace EVAP canister vent control valve. Refer to FL-26, "2WD : Exploded View"

Component Inspection

INFOID:0000000011461641

JMBIA0169ZZ

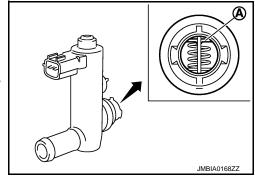
1. CHECK EVAP CANISTER VENT CONTROL VALVE-I

- 1. Turn ignition switch OFF.
- 2. Remove EVAP canister vent control valve from EVAP canister.
- Check portion (A) of EVAP canister vent control valve for being rusted.

Is it rusted?

YES >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Exploded View"(2WD), FL-29, "AWD : Exploded View"(AWD).</u>

NO >> GO TO 2.



2. CHECK EVAP CANISTER VENT CONTROL VALVE-II

(P)With CONSULT

- Reconnect harness connectors disconnected.
- 2. Turn ignition switch ON.
- Perform "VENT CONTROL/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 4. Check air passage continuity and operation delay time.

 Make sure new O-ring is installed properly.

Condition (VENT CONT/V)	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed



Check air passage continuity and operation delay time under the following conditions.

Make sure new O-ring is installed properly.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals (1) and (2)	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Exploded View"(2WD)</u>, <u>FL-29, "AWD : Exploded View"(AWD)</u>.

3.check evap canister vent control valve-iii $\,$

(II) With CONSULT

- 1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.
- 2. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.

INE" using CONSULT.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

3. Check air passage continuity and operation delay time.

Make sure new O-ring is installed properly.

Condition (VENT CONT/V)	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed

(B)

Operation takes less than 1 second.

 Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.

2. Check air passage continuity and operation delay time under the following conditions.

Make sure new O-ring is installed properly.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals (1) and (2)	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-29, "AWD : Exploded View"</u>(AWD).

Α

EC

С

JMBIA0169ZZ

D

Е

F

K

L

M

Ν

0

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0448 EVAP CANISTER VENT CONTROL VALVE

DTC Logic INFOID:000000011461642

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0448	VENT CONTROL VALVE (EVAP canister vent control valve close)	EVAP canister vent control valve remains closed under specified driving conditions.	EVAP canister vent control valve EVAP control system pressure sensor and the circuit Blocked rubber tube to EVAP canister vent control valve EVAP canister is saturated with water

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

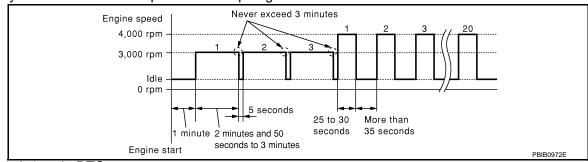
2. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- Turn ignition switch ON and wait at least 5 seconds.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 4. Start engine and let it idle for at least 1 minute.
- 5. Repeat next procedures three times.
- Increase the engine speed up to 3,000 to 3,500 rpm and keep it for 2 minutes and 50 seconds to 3 minutes.

Never exceed 3 minutes.

- Fully released accelerator pedal and keep engine idle for about 5 seconds.
- 6. Repeat next procedure 20 times.
- Quickly increase the engine speed up to 4,000 to 4,500 rpm or more and keep it for 25 to 30 seconds.
- Fully released accelerator pedal and keep engine idle for at least 35 seconds.



7. Check 1st trip DTC.

With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-369, "Diagnosis Procedure".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011461643

1. CHECK RUBBER TUBE

- Turn ignition switch OFF.
- 2. Disconnect rubber tube connected to EVAP canister vent control valve.
- Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Clean rubber tube using an air blower.

2 .CHECK EVAP CANISTER VENT CONTROL VALVE

Check the EVAP canister vent control valve. Refer to EC-370, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 3.

>> Replace EVAP canister vent control valve. Refer to FL-26, "2WD: Exploded View" (2WD), FL-29, NO "AWD: Exploded View" (AWD).

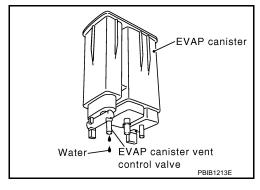
3.check if evap canister is saturated with water

- Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
- Check if water will drain from the EVAP canister.

Does water drain from EVAP canister?

YES >> GO TO 4.

NO >> GO TO 6.



CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

${f 5.}$ DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to FL-26, "2WD: Exploded View" (2WD), FL-29, "AWD: Exploded View" (AWD).

6.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

- Disconnect EVAP control system pressure sensor harness connector.
- Check connectors for water.

Water should not exist.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD: Exploded View" (2WD), FL-29, "AWD: Exploded View"(AWD).

EC-369 Revision: 2014 October 2015 JUKE

EC

Α

Е

F

Н

M

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

7.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check the EVAP control system pressure sensor. Refer to EC-375, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"(2WD), FL-29, "AWD : Exploded View"(AWD).</u>

Component Inspection

INFOID:0000000011461644

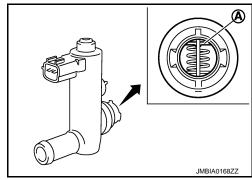
1. CHECK EVAP CANISTER VENT CONTROL VALVE-I

- 1. Turn ignition switch OFF.
- Remove EVAP canister vent control valve from EVAP canister.
- Check portion (A) of EVAP canister vent control valve for being rusted.

Is it rusted?

YES >> Replace EVAP canister vent control valve. Refer to <u>FL-26. "2WD : Exploded View"(2WD)</u>, <u>FL-29. "AWD : Exploded View"(AWD)</u>.

NO >> GO TO 2.



2.CHECK EVAP CANISTER VENT CONTROL VALVE-II

(II) With CONSULT

- 1. Reconnect harness connectors disconnected.
- 2. Turn ignition switch ON.
- Perform "VENT CONTROL/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 4. Check air passage continuity and operation delay time.

Make sure new O-ring is installed properly.

Condition (VENT CONT/V)	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed

Operation takes less than 1 second.

Check air passage continuity and operation delay time under the following conditions.

Make sure new O-ring is installed properly.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals (1) and (2)	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

YES >> GO TO 3.

>> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Exploded View"(2WD)</u>, <u>FL-29, "AWD : Exploded View"(AWD)</u>.

3.CHECK EVAP CANISTER VENT CONTROL VALVE-III

(P)With CONSULT

NO

Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

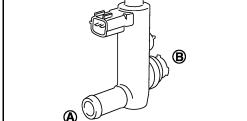
2. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.

3. Check air passage continuity and operation delay time.

Make sure new O-ring is installed properly.

Condition (VENT CONT/V)	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed





Operation takes less than 1 second.

1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.

2. Check air passage continuity and operation delay time under the following conditions.

Make sure new O-ring is installed properly.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals (1) and (2)	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-29, "AWD : Exploded View"</u>(AWD).

Α

EC

С

D

JMBIA0169ZZ

Е

F

G

Н

Κ

L

M

Ν

O

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0451 EVAP CONTROL SYSTEM PRESSURE SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0451 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-420, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P0451	EVAP SYS PRES SEN (EVAP control system pressure sensor perfor- mance)	ECM detects a sloshing signal from the EVAP control system pressure sensor	Harness or connectors (EVAP control system pressure sensor circuit is shorted.) EVAP control system pressure sensor

DTC CONFIRMATION PROCEDURE

NOTE:

Never remove fuel filler cap during DTC confirmation procedure.

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- (P)With CONSULT>>GO TO 2.
- Without CONSULT>>GO TO 5.

2.PERFORM DTC CONFIRMATION PROCEDURE-1

(P)With CONSULT

Start engine and let it idle for least 40 seconds.

NOTE:

Do not depress accelerator pedal even slightly.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-373, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-2

(P)With CONSULT

- Select "EVAP DIAG READY" in "DATA MONITOR" mode of "ENGINE".
- 2. Let it idle until "OFF" of "EVAP DIAG READY" changes to "ON".

NOTE:

It will take at most 2 hours until "OFF" of "EVAP DIAG READY" changes to "ON".

3. Turn ignition switch OFF and wait at least 90 minutes.

NOTE:

Never turn ignition switch ON during 90 minutes.

- Turn ignition switch ON.
- 5. Select "EVAP LEAK DIAG" in "DATA MONITOR" mode of "ENGINE".
- 6. Check that "EVAP LEAK DIAG" indication.

Which is displayed on CONSULT?

CMPLT>> GO TO 4.

YET >> 1. Perform DTC CONFIRMATION PROCEDURE again.

2. GO TO 1.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

< DTC/CIRCU	IT DIAGNOSIS	>		[MR FOR NISMO RS MODELS]
4.PERFORM	DTC CONFIRM	ATION PROCE	DURE-3	
With CONSU				
Check 1st trip [s 1st trip DTC				
•	oceed to <u>EC-37</u>	3, "Diagnosis P	rocedure".	
	SPECTION END			
	DTC CONFIRM	ATION PROCE	DURE-4	
With GST . Start engin	e and let it idle	for least 40 sec	onds	
NOTE:				
. Check 1st	press accelera trip DTC.	tor pedal even	slightly.	
s 1st trip DTC				
	oceed to <u>EC-37</u> 3 O TO 6.	3, "Diagnosis P	rocedure".	
	DTC CONFIRM	ATION PROCE	DURE-5	
With GST			-	
Let it idle fo	or at least 2 hou		00 minutes	
Turn ignition NOTE:	n switch OFF a	nd wait at least	90 minutes.	
	ignition switch switch on switch on.	h ON during 9	0 minutes.	
. Check 1st				
1st trip DTC				
	oceed to <u>EC-37</u> SPECTION END		<u>rocedure"</u> .	
iagnosis P	rocedure			INFOID:000000011461646
· ·		WOTEN DDEO	OUDE OENOOI	O CONNECTOR FOR WATER
	on switch OFF.	SYSTEM PRES	SURE SENSU	R CONNECTOR FOR WATER
. Disconnect	EVAP control s			ss connector.
. Check sen	sor harness cor	nector for wate	r.	
Water s	should not exis	t.		
•	n result normal	<u>?</u>		
) TO 2. pair or replace l	narness connec	tor.	
	•			R POWER SUPPLY
	n switch ON.			
		n EVAP control	system pressui	re sensor harness connector and ground.
	+			
	tem pressure sen-		Voltage	
	or	_	(Approx.)	
Connector	Terminal	Ground	5.V	
B22	3	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 3.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

	+	-		
	l system pres- sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
B22	3	F25 23		Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts

4. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

	+	-		
	l system pres- sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
B22	1	F25 12		Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5.}$ CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR SIGNAL CIRCUIT

Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

	+	-		
	l system pres- sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
B22	2	F25 15		Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check the EVAP control system pressure sensor. Refer to EC-375, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"(2WD), FL-29, "AWD : Exploded View"(AWD).</u>

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Component Inspection

INFOID:0000000011461647

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

- 1. Turn ignition switch OFF.
- 2. Remove EVAP control system pressure sensor with its harness connector connected from EVAP canister. **Always replace O-ring with a new one.**
- 3. Install a vacuum pump to EVAP control system pressure sensor.
- 4. Turn ignition switch ON and check output voltage between ECM harness connector and ground under the following conditions.

Connector + -			Condition	Voltage	
		_	Condition [Applied vacuum kPa (kg/cm ² , psi)]		
Connector	Terminal		[, , , , , , , , , , , , , , , , , , ,		
F25	15 12		Not applied	0.5 - 4.6 V	
1 25	13	12	-26.7 (-0.272, -3.87)	2.1 to 2.5 V lower than above value	

CAUTION:

- · Always calibrate the vacuum pump gauge when using it.
- Do not apply below -93.3 kPa (-0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), FL-29, "AWD : Exploded View"(AWD).

EC

D

Е

F

Α

Κ

L

M

Ν

O

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

DTC Logic INFOID:000000011461648

DTC DETECTION LOGIC

NOTE:

If DTC P0451 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-420, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0452	EVAP SYS PRES SEN (EVAP control system pressure sensor low in- put)	An excessively low voltage from the sensor is sent to ECM.	Harness or connectors (EVAP control system pressure sensor circuit is shorted.) EVAP control system pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 5. Make sure that "FUEL T/TMP SE" indication is more than 0°C (32°F).
- Start engine and wait at least 20 seconds.
- 7. Check 1st trip DTC.

With GST

- 1. Start engine and warm it up to normal operating temperature.
- Set voltmeter probes to ECM harness connector terminals as per the following.

Connector	+	_	Voltage
Connector	Tern		
F25	15	12	Less than 4.2 V

- 3. Make sure that the voltage is less than 4.2 V.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and wait at least 20 seconds.
- 6. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-377, "Diagnosis Procedure".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011461649

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR FOR WATER

Turn ignition switch OFF.

Is the inspection result normal?

- Disconnect EVAP control system pressure sensor harness connector.
- Check sensor harness connector for water.

Water should not exist.

YES >> GO TO 2.

NO >> Repair or replace harness connector.

2.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY

- Turn ignition switch ON.
- Check the voltage between EVAP control system pressure sensor harness connector and ground.

	+		
•	tem pressure sen- or	_	Voltage (Approx.)
Connector	Terminal		
B22	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

+		_		
EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B22	3	F25	23	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts

f 4.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

+				
EVAP control system pres- sure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B22	1	F25	12	Existed

Also check harness for short to power.

EC-377 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

K

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5.}$ CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR SIGNAL CIRCUIT

Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

+		_		
EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B22	2	F25	15	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check the EVAP control system pressure sensor. Refer to EC-375. "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD : Exploded View" (2WD), FL-29, "AWD : Exploded View" (AWD).

Component Inspection

INFOID:0000000011461650

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

- 1. Turn ignition switch OFF.
- Remove EVAP control system pressure sensor with its harness connector connected from EVAP canister.
 Always replace O-ring with a new one.
- 3. Install a vacuum pump to EVAP control system pressure sensor.
- Turn ignition switch ON and check output voltage between ECM harness connector and ground under the following conditions.

ECM + -			Condition	Voltage	
		-	[Applied vacuum kPa (kg/cm ² , psi)]		
Connector	Terminal [7,4ppined vacuum ki a (kg/cm , psi)		[rippined raedalli ili a (ilgrelli ; per/]		
F25	15	12	Not applied	0.5 - 4.6 V	
1 25	ีว	12	-26.7 (-0.272, -3.87)	2.1 to 2.5 V lower than above value	

CAUTION:

- Always calibrate the vacuum pump gauge when using it.
- Do not apply below -93.3 kPa (-0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), FL-29, "AWD : Exploded View"(AWD).

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0453 EVAP CONTROL SYSTEM PRESSURE SENSOR

DTC Logic INFOID:0000000011461651

DTC DETECTION LOGIC

NOTE:

If DTC P0451 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-420, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0453	EVAP SYS PRES SEN (EVAP control system pressure sensor high in- put)	An excessively high voltage from the sensor is sent to ECM.	Harness or connectors (EVAP control system pressure sensor circuit is shorted.) EVAP control system pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 5. Make sure that "FUEL T/TMP SE" indication is more than 0°C (32°F).
- Start engine and wait at least 20 seconds.
- 7. Check 1st trip DTC.

- Start engine and warm it up to normal operating temperature.
- Set voltmeter probes to ECM harness connector terminals as per the following.

Connector	+	Voltage	
Connector	Terr		
F25	15	12	Less than 4.2 V

- Make sure that the voltage is less than 4.2 V.
- Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and wait at least 20 seconds.
- 6. Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-380, "Diagnosis Procedure". YES

NO >> INSPECTION END

EC-379 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011461652

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR FOR WATER

- 1. Turn ignition switch OFF.
- 2. Disconnect EVAP control system pressure sensor harness connector.
- 3. Check sensor harness connector for water.

Water should not exist.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness connector.

2.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY

- 1. Turn ignition switch ON.
- 2. Check the voltage between EVAP control system pressure sensor harness connector and ground.

	+		
•	tem pressure sen- or	_	Voltage (Approx.)
Connector	Terminal		
B22	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

	+		_	
EVAP control system pres- sure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B22	3	F25	23	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts

4. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

+		_		
EVAP control system pres- sure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B22	1	F25	12	Existed

4. Also check harness for short to power.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5.}$ CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR SIGNAL CIRCUIT

Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

+		_		
EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B22	2	F25	15	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK RUBBER TUBE

- Disconnect rubber tube connected to EVAP canister vent control valve.
- Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 7.

>> Clean the rubber tube using an air blower, repair or replace rubber tube.

7.CHECK EVAP CANISTER VENT CONTROL VALVE

Refer to EC-366, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.

>> Replace EVAP canister vent control valve. Refer to FL-26, "2WD: Exploded View" (2WD), FL-29, NO "AWD: Exploded View" (AWD).

8.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Refer to EC-382, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD: Exploded View" (2WD), FL-29, "AWD: Exploded View" (AWD).

9.CHECK IF EVAP CANISTER IS SATURATED WITH WATER

- Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
- 2. Check if water will drain from the EVAP canister.

Does water drain from EVAP canister?

YES >> GO TO 10.

NO >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

EVAP canister **ÈVAP** canister vent Watercontrol valve PBIB1213E

10. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

EC-381 Revision: 2014 October 2015 JUKE

EC

Α

Е

M

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection
 - >> Repair hose or replace EVAP canister. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-29, "AWD : Exploded View"</u>(AWD).

Component Inspection

INFOID:0000000011461653

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

- 1. Turn ignition switch OFF.
- 2. Remove EVAP control system pressure sensor with its harness connector connected from EVAP canister. Always replace O-ring with a new one.
- 3. Install a vacuum pump to EVAP control system pressure sensor.
- 4. Turn ignition switch ON and check output voltage between ECM harness connector and ground under the following conditions.

ECM			Condition	
Connector	+	_	Condition [Applied vacuum kPa (kg/cm², psi)]	Voltage
Connector	Terminal		[Applied Vacadili Ki a (Ng/oili , pol/)]	
F25	15	12	Not applied	0.5 - 4.6 V
1 25	13	12	-26.7 (-0.272, -3.87)	2.1 to 2.5 V lower than above value

CAUTION:

- · Always calibrate the vacuum pump gauge when using it.
- Do not apply below -93.3 kPa (-0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-29, "AWD : Exploded View"</u>(AWD).

Α

EC

D

Е

Н

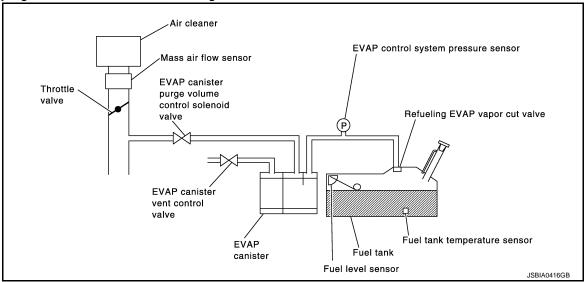
P0456 EVAP CONTROL SYSTEM

DTC Logic INFOID:0000000011461654

DTC DETECTION LOGIC

This diagnosis detects leaks in the EVAP line between fuel tank and EVAP canister purge volume control solenoid valve, using the negative pressure caused by decrease of fuel temperature in the fuel tank after turning ignition switch OFF.

If ECM judges there are no leaks, the diagnosis will be OK.



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	
P0456	EVAP VERY SML LEAK (Evaporative emission control system leak)	EVAP system has a leak. EVAP system does not operate properly.	 Incorrect fuel tank vacuum relief valve Incorrect fuel filler cap used Fuel filler cap remains open or does not close. Foreign matter caught in fuel filler cap. Leak is in line between intake manifold and EVAP canister purge volume control solenoid valve. Foreign matter caught in EVAP canister vent control valve. EVAP canister or fuel tank leaks EVAP purge line (pipe and rubber tube) leaks EVAP purge line rubber tube bent Loose or disconnected rubber tube EVAP canister vent control valve and the circuit EVAP canister purge volume control solenoid valve and the circuit Fuel tank temperature sensor O-ring of EVAP canister vent control valve is missing or damaged EVAP canister is saturated with water EVAP control system pressure sensor Refueling EVAP vapor cut valve ORVR system leaks Fuel level sensor and the circuit Foreign matter caught in EVAP canister purge volume control solenoid valve 	J K L N

CAUTION:

- Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.
- If the fuel filler cap is not tightened properly, the MIL may illuminate.
- Use only a genuine NISSAN rubber tube as a replacement.

DTC CONFIRMATION PROCEDURE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 4.

2.perform dtc confirmation procedure-i

(A) WITH CONSULT

- Turn ignition switch ON and select "EVAP DIAG READY" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and wait at idle until "OFF" of "EVAP DIAG READY" changes to "ON".

NOTE:

It will take at most 2 hours until "OFF" of "EVAP DIAG READY" changes to "ON".

3. Turn ignition switch OFF and wait at least 90 minutes.

NOTE:

Never turn ignition switch ON during 90 minutes.

- Turn ignition switch ON and select "EVAP LEAK DIAG" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 5. Check that "EVAP LEAK DIAG" indication.

Which is displayed on CONSULT?

CMPLT>> GO TO 3.

YET >> Perform DTC CONFIRMATION PROCEDURE again. GO TO 1.

3. PERFORM DTC CONFIRMATION PROCEDURE-II

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-384, "Diagnosis Procedure".

NO >> INSPECTION END.

4. PERFORM DTC CONFIRMATION PROCEDURE

WITH GST

- 1. Start engine and wait engine idle for at least 2 hours.
- 2. Turn ignition switch OFF and wait at least 90 minutes.

NOTE:

Never turn ignition switch ON during 90 minutes.

- Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-384, "Diagnosis Procedure".

NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000011461655

1. CHECK FUEL FILLER CAP DESIGN

1. Turn ignition switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

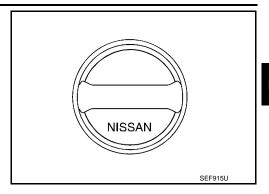
[MR FOR NISMO RS MODELS]

2. Check for genuine NISSAN fuel filler cap design.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace with genuine NISSAN fuel filler cap.



2. CHECK FUEL FILLER CAP INSTALLATION

Check that the cap is tightened properly by rotating the cap clockwise.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Open fuel filler cap, then clean cap and fuel filler neck threads using air blower. Then retighten until reteaching sound is heard.

3.CHECK FUEL FILLER CAP FUNCTION

Check for air releasing sound while opening the fuel filler cap.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK FUEL TANK VACUUM RELIEF VALVE

Refer to EC-388, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace fuel filler cap with a genuine one.

5.CHECK FOR EVAP LEAK

Refer to EC-575, "Inspection".

Is there any leak in EVAP line?

YES >> Repair or replace.

NO >> GO TO 6.

6. CHECK EVAP CANISTER VENT CONTROL VALVE

Check the following.

EVAP canister vent control valve is installed properly.

Refer to FL-26, "2WD: Exploded View".

EVAP canister vent control valve.

Refer to EC-366, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace EVAP canister vent control valve and O-ring. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-29, "AWD : Exploded View"</u>(AWD).

7.CHECK IF EVAP CANISTER SATURATED WITH WATER

EC

Α

C

D

Е

F

G

Н

K

N

N

. .

< DTC/CIRCUIT DIAGNOSIS >

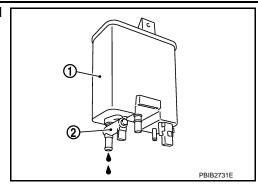
[MR FOR NISMO RS MODELS]

- 1. Remove EVAP canister (1) with EVAP canister vent control valve (2) and EVAP control system pressure sensor attached.
- 2. Check if water will drain from the EVAP canister.

Does water drain from EVAP canister?

YES >> GO TO 8.

NO-1 >> With CONSULT: GO TO 10. NO-2 >> Without CONSULT: GO TO 11.



8. CHECK EVAP CANISTER

Weigh the EVAP canister assembly with the EVAP canister vent control valve and EVAP control system pressure sensor attached. Refer to <u>FL-26</u>, "<u>2WD</u>: <u>Exploded View</u>"(2WD), <u>FL-29</u>, "<u>AWD</u>: <u>Exploded View</u>"(AWD). The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 10.

YES-2 >> Without CONSULT: GO TO 11.

NO >> GO TO 9.

9. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection
 - >> Repair hose or replace EVAP canister. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-29, "AWD : Exploded View"</u>(AWD).

10.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

(P)With CONSULT

- 1. Disconnect vacuum hose to EVAP canister purge volume control solenoid valve at EVAP service port.
- Start engine and let it idle.
- 3. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 4. Touch "Qu" on CONSULT screen to increase "PURG VOL CONT/V" opening to 100%.
- Check vacuum hose for vacuum.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 12.

11.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

- 1. Start engine and warm it up to normal operating temperature.
- Stop engine.
- 3. Disconnect vacuum hose to EVAP canister purge volume control solenoid valve at EVAP service port.
- 4. Start engine and let it idle for at least 80 seconds.
- 5. Check vacuum hose for vacuum when revving engine up to 2,000 rpm.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 12.

12. CHECK VACUUM HOSE

Check vacuum hoses for clogging or disconnection. Refer to FL-26, "2WD: Exploded View".

< DTC/CIRCUIT DIAGNOSIS > [MR FOR NISMO RS MODELS	<u>}]</u>
Is the inspection result normal?	^
YES >> GO TO 13. NO >> Repair or reconnect the hose.	Α
13. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE	
Check the EVAP canister purge volume control solenoid valve. Refer to EC-362, "Component Inspection".	EC
Is the inspection result normal?	
YES >> GO TO 14.	С
NO >> Replace EVAP canister purge volume control solenoid valve. Refer to FL-26, "2WD : Explode View".	<u>ad</u>
14. CHECK FUEL TANK TEMPERATURE SENSOR	D
Check the fuel tank temperature sensor. Refer to EC-304, "Component Inspection".	_
Is the inspection result normal?	Е
YES >> GO TO 15. NO >> Replace fuel level sensor unit. Refer to FL-5, "2WD: Exploded View" (2WD), FL-9, "AWD Exploded View" (AWD).	
15. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR	F
Check the EVAP control system pressure sensor. Refer to FL-26, "2WD : Exploded View".	_
Is the inspection result normal?	G
YES >> GO TO 16.	G
NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"(2WD FL-29, "AWD : Exploded View"(AWD).</u>)) , ⊢
16. CHECK EVAP PURGE LINE	
Check EVAP purge line (pipe, rubber tube, fuel tank and EVAP canister) for cracks or improper connection. Refer to FL-25, "2WD: Hydraulic Layout" (2WD), FL-27, "AWD: Hydraulic Layout" (AWD).	
Is the inspection result normal?	
YES >> GO TO 17. NO >> Repair or reconnect the hose.	J
17. CLEAN EVAP PURGE LINE	
Clean EVAP purge line (pipe and rubber tube) using air blower.	K
>> GO TO 18.	
18.check evap/orvr line	L
Check EVAP/ORVR line between EVAP canister and fuel tank for clogging, kink, looseness and improper connection. For location, refer to FL-25, "2WD: Hydraulic Layout" (2WD), FL-27, "AWD: Hydraulic Layout" (AWD) lot the improper connection results permal?	

Is the inspection result normal?

YES >> GO TO 19.

NO >> Repair or replace hoses and tubes.

19. CHECK RECIRCULATION LINE

Check recirculation line between fuel filler tube and fuel tank for clogging, kink, cracks, looseness and improper connection.

Ν

0

Is the inspection result normal?

YES >> GO TO 20.

NO >> Repair or replace hose, tube or fuel filler tube. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD), <u>FL-9, "AWD : Exploded View"</u>(AWD).

20.CHECK REFUELING EVAP VAPOR CUT VALVE

Check the refueling EVAP vapor cut valve. Refer to <u>FL-27</u>, "2WD: <u>Inspection"</u>(2WD), <u>FL-30</u>, "AWD: <u>Inspection"</u>(2WD).

Is the inspection result normal?

YES >> GO TO 21.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to <u>FL-26, "2WD : Exploded View"(2WD), FL-29, "AWD : Exploded View"(AWD).</u>

21. CHECK FUEL LEVEL SENSOR

Check the fuel level sensor. Refer to MWI-52, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace fuel level sensor unit. Refer to <u>FL-5, "2WD : Exploded View"(2WD), FL-9, "AWD : Exploded View"(AWD).</u>

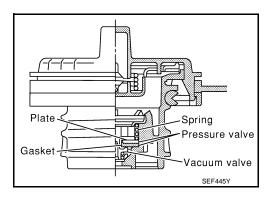
Component Inspection

NO

INFOID:0000000011461656

1. CHECK FUEL FILLER CAP

- 1. Turn ignition switch OFF.
- 2. Remove fuel filler cap.
- 3. Wipe clean valve housing.



Vacuum/Pressure gauge

- Install fuel filler cap adapter (commercial service tool) to fuel filler cap.
- 5. Check valve opening pressure and vacuum.

Pressure: 15.3 - 20.0 kPa (0.156 - 0.204 kg/cm², 2.22

- 2.90 psi)

Vacuum: -6.0 to -3.3 kPa (-0.061 to -0.034 kg/cm²,

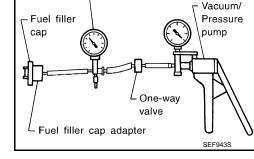
-0.87 to -0.48 psi)

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.REPLACE FUEL FILLER CAP



Replace fuel filler cap.

CAUTION:

Use only a genuine fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.

>> INSPECTION END

P0460 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0460 FUEL LEVEL SENSOR

DTC Logic INFOID:0000000011461657

DTC DETECTION LOGIC

NOTE:

- If DTC P0460 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0460 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415</u>, "<u>DTC Logic"</u>.

When the vehicle is parked, naturally the fuel level in the fuel tank is stable. It means that output signal of the fuel level sensor does not change. If ECM senses sloshing signal from the sensor, fuel level sensor malfunction is detected.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0460	FUEL LEV SEN SLOSH (Fuel level sensor circuit noise)	Even though the vehicle is parked, a signal being varied is sent from the fuel level sensor to ECM.	Harness or connectors (The CAN communication line is open or shorted) Harness or connectors (The sensor circuit is open or shorted) Combination meter Fuel level sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait maximum of 2 consecutive minutes.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-389, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK COMBINATION METER FUNCTION

Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> CHECK INTERMITTENT INCIDENT. Refer to GI-44, "Intermittent Incident".

NO >> Refer to MWI-50, "Component Function Check".

EC

Α

D

Е

F

Н

J

K

INFOID:0000000011461658

Ν

[MR FOR NISMO RS MODELS]

P0461 FUEL LEVEL SENSOR

DTC Logic INFOID:000000011461659

DTC DETECTION LOGIC

NOTE:

- If DTC P0461 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0461 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415</u>, "DTC Logic".

Driving long distances naturally affect fuel gauge level.

This diagnosis detects the fuel gauge malfunction of the gauge not moving even after a long distance has been driven.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0461	FUEL LEVEL SENSOR (Fuel level sensor circuit range/performance)	The output signal of the fuel level sensor does not change within the specified range even though the vehicle has been driven a long distance.	Harness or connectors (The CAN communication line is open or shorted) Harness or connectors (The sensor circuit is open or shorted) Combination meter Fuel level sensor

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-390, "Component Function Check".

Use component function check to check the overall function of the fuel level sensor function. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-391, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011461660

1.PRECONDITIONING

WARNING:

When performing following procedure, be sure to observe the handling of the fuel. Refer to <u>FL-2</u>, "General Precautions".

TESTING CONDITION:

Before starting component function check, preparation of draining fuel and refilling fuel is required.

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 3.

2.PERFORM COMPONENT FUNCTION CHECK

(P)With CONSULT

NOTE:

Start from step 10, if it is possible to confirm that the fuel cannot be drained by 30 $\,\ell$ (7-7/8 US gal, 6-5/8 Imp gal) in advance.

- 1. Prepare a fuel container and a spare hose.
- Release fuel pressure from fuel line, refer to EC-162, "Work Procedure".
- 3. Remove the fuel feed hose on the fuel level sensor unit.
- 4. Connect a spare fuel hose where the fuel feed hose was removed.
- Turn ignition switch OFF and wait at least 10 seconds then turn ON.
- 6. Select "FUEL LEVEL SE" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 7. Check "FUEL LEVEL SE" output voltage and note it.

P0461 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS > 11. Fill fuel into the fuel tank for 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal). Is the inspection result normal? YES >> INSPECTION END NO NOTE:

[MR FOR NISMO RS MODELS]

- Select "FUEL PUMP RELAY" in "ACTIVE TEST" mode of "ENGINE" using CONSULT. Touch "ON" and drain fuel approximately 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal) and stop it.
- 10. Check "FUEL LEVEL SE" output voltage and note it.
- 12. Check "FUEL LEVEL SE" output voltage and note it.
- 13. Confirm whether the voltage changes more than 0.03 V during step 7 to 10 and 10 to 12.

>> Proceed to EC-391, "Diagnosis Procedure".

3.perform component function check

Start from step 8, if it is possible to confirm that the fuel cannot be drained by 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal) in advance.

- 1. Prepare a fuel container and a spare hose.
- 2. Release fuel pressure from fuel line. Refer to EC-162, "Work Procedure".
- 3. Remove the fuel feed hose on the fuel level sensor unit.
- 4. Connect a spare fuel hose where the fuel feed hose was removed.
- 5. Turn ignition switch ON.
- Drain fuel by 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal) from the fuel tank using proper equipment.
- 7. Confirm that the fuel gauge indication varies.
- 8. Fill fuel into the fuel tank for 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal).
- 9. Confirm that the fuel gauge indication varies.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-391, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:000000001146166

1. CHECK COMBINATION METER FUNCTION

Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Refer to MWI-50, "Component Function Check"

K

N

Α

EC

D

Е

F

Н

P0462, P0463 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0462, P0463 FUEL LEVEL SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0462 or P0463 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0462 or P0463 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to EC-415, "DTC Logic".

This diagnosis indicates the former, to detect open or short circuit malfunction.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0462	FUEL LEVEL SEN/ CIRC (Fuel level sensor circuit low input)	An excessively low voltage from the sensor is sent to ECM.	Harness or connectors (CAN communication line is open or shorted) Harness or connectors
P0463	FUEL LEVEL SEN/ CIRC (Fuel level sensor circuit high input)	An excessively high voltage from the sensor is sent to ECM.	(Fuel level sensor circuit is open or shorted)Combination meterFuel level sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is between 11 V and 16 V at ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-392, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461663

1.CHECK COMBINATION METER FUNCTION

Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Refer to MWI-50, "Component Function Check"

P0500 VSS

EXCEPT FOR M/T MODELS

EXCEPT FOR M/T MODELS: Description

INFOID:0000000011461664

Α

EC

D

Е

F

Н

K

N

Р

ECM receives vehicle speed signals from two different paths via CAN communication line: One is from the ABS actuator and electric unit (control unit) via the combination unit and the other is from TCM.

EXCEPT FOR M/T MODELS: DTC Logic

INFOID:0000000011461665

DTC DETECTION LOGIC

NOTE:

If DTC P0500 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.

If DTC P0500 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0500	VEH SPEED SEN/CIRC (Vehicle speed sensor)	At 20 km/h (13 MPH), ECM detects the following status continuously for 5 seconds or more: The difference between a vehicle speed calculated by a output speed sensor transmitted from TCM to ECM via CAN communication and the vehicle speed indicated on the combination meter exceeds 15km/h (10 MPH).	Harness or connector (CAN communication line is open or shorted.) Combination meter ABS actuator and electric unit (control unit) Wheel sensor TCM Output speed sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 10 V or more at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine.
- Shift the selector lever to D range and wait at least for 2 seconds.
- 3. Drive the vehicle at least 5 seconds at 20 km/h (13 MPH) or more.

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-393, "EXCEPT FOR M/T MODELS : Diagnosis Procedure"

NO >> INSPECTION END

EXCEPT FOR M/T MODELS : Diagnosis Procedure

INFOID:0000000011461666

1. CHECK DTC WITH TCM

Check DTC with TCM. Refer to TM-201, "DTC Index".

Revision: 2014 October EC-393 2015 JUKE

INFOID:0000000011461667

INFOID:0000000011461668

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform trouble shooting relevant to DTC indicated.

2.CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check DTC with ABS actuator and electric unit (control unit). Refer to BRC-50, "DTC Index".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Perform trouble shooting relevant to DTC indicated.

3. CHECK DTC WITH COMBINATION METER

Check DTC with combination meter. Refer to MWI-32, "DTC Index".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Perform trouble shooting relevant to DTC indicated.

4.CHECK OUTPUT SPEED SENSOR

Check output speed sensor. Refer to TM-248, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace or replace error-detected parts.

5. CHECK WHEEL SENSOR

Check wheel sensor. Refer to BRC-81, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace or replace error-detected parts.

M/T MODELS

M/T MODELS: Description

The vehicle speed signal is sent to the combination meter from the "ABS actuator and electric unit (control unit)" via the CAN communication line. The combination meter then sends a signal to the ECM via the CAN communication line.

M/T MODELS: DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0500 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0500 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0500	VEH SPEED SEN/CIRC (Vehicle speed sensor)	The vehicle speed signal sent to ECM is almost 0 km/h (0 MPH) even when vehicle is being driven.	Harness or connectors (CAN communication line is open or shorted) Harness or connectors (Vehicle speed signal circuit is open or shorted) Wheel sensor Combination meter ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

P0500 VSS

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 2. NO >> GO TO 5.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

Turn ignition switch OFF and wait at least 10 seconds.

- Turn ignition switch ON. 2.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 3.

3.CHECK VEHICLE SPEED SIGNAL

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

(P)With CONSULT

- Start engine.
- Read "VHCL SPEED SE" in "DATA MONITOR" mode of "ENGINE" using CONSULT. The vehicle speed on CONSULT should exceed 10 km/h (6 mph) when rotating wheels with suitable gear position.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Proceed to EC-396, "M/T MODELS: Diagnosis Procedure".

4. PERFORM DTC CONFIRMATION PROCEDURE

- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Warm engine up to normal operating temperature.
- Maintain the following conditions for at least 50 consecutive seconds.

CAUTION:

Always drive vehicle at a safe speed.

ENG SPEED	1,800 - 6,000 rpm
COOLAN TEMP/S	More than 65°C (149°F)
B/FUEL SCHDL	6.25 - 31.8 msec
Selector lever	Except Neutral position
PW/ST SIGNAL	OFF

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-396, "M/T MODELS: Diagnosis Procedure".

NO >> INSPECTION END

${f 5.}$ PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-395, "M/T MODELS: Component Function Check". Use component function check to check the overall function of the vehicle speed signal circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-396, "M/T MODELS: Diagnosis Procedure".

M/T MODELS: Component Function Check

1. PERFORM COMPONENT FUNCTION CHECK

With GST

- 1. Lift up drive wheels.
- Start engine.
- Read vehicle speed signal in Service \$01 with GST.

EC

Α

D

Ν

INFOID:0000000011461669

P0500 VSS

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

The vehicle speed signal on GST should be able to exceed 10 km/h (6 MPH) when rotating wheels with suitable gear position.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-396, "M/T MODELS : Diagnosis Procedure".

M/T MODELS: Diagnosis Procedure

INFOID:0000000011461670

1. CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

Check DTC with ABS actuator and electric unit (control unit). Refer to <u>BRC-50, "DTC Index"</u>. <u>Is the inspection result normal?</u>

YES >> GO TO 2.

NO >> Perform trouble shooting relevant to DTC indicated.

2. CHECK DTC WITH COMBINATION METER

Check DTC with combination meter. Refer to MWI-32, "DTC Index".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Perform trouble shooting relevant to DTC indicated.

P0501, P2159 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0501, P2159 VEHICLE SPEED SENSOR

Description INFOID:0000000011461671

ECM receives a rear wheel sensor signal from ABS actuator and electric unit (control unit) via CAN communication to switch combustion for the direct injection gasoline system. For the direct injection gasoline system, refer toEC-50, "DIRECT INJECTION GASOLINE SYSTEM: System Description".

INFOID:0000000011461672

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0501 or P2159 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX. Refer to EC-113, "DTC Index".

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0501	VEHICLE SPEED SEN A (Vehicle speed sensor A range/ performance)	ECM detects a rear LH wheel sensor mal- function signal transmitted from the ABS ac- tuator and electric unit (control unit) via CAN communication at least for 5 seconds in a row.	Harness or connectors (The CAN communication line is open or shorted) Rear LH wheel sensor ABS actuator and electric unit (control unit)
P2159	Vehicle speed sensor B (Vehicle speed sensor B range/ performance)	ECM detects a rear RH wheel sensor mal- function signal transmitted from the ABS ac- tuator and electric unit (control unit) via CAN communication at least for 5 seconds in a row.	Harness or connectors (The CAN communication line is open or shorted) Rear RH wheel sensor ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 9 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-397, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

 ${f 1}$.CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

(P)With CONSULT

Revision: 2014 October

Check DTC with ABS actuator and electric unit (control unit). Refer to BRC-39, "CONSULT Function".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Perform Diagnosis Procedure corresponding to DTC indicated.

> **EC-397** 2015 JUKE

EC

Α

D

K

M

N

P

INFOID:0000000011461673

P0506 ISC SYSTEM

Description INFOID:000000011461674

The ECM controls the engine idle speed to a specified level through the fine adjustment of the air, which is let into the intake manifold, by operating the electric throttle control actuator. The operating of the throttle valve is varied to allow for optimum control of the engine idling speed. The crankshaft position sensor (POS) detects the actual engine speed and sends a signal to the ECM.

The ECM controls the electric throttle control actuator so that the engine speed coincides with the target value memorized in the ECM. The target engine speed is the lowest speed at which the engine can operate steadily. The optimum value stored in the ECM is determined by taking into consideration various engine conditions, such as during warming up, deceleration, and engine load (air conditioner, power steering and cooling fan operation, etc.).

DTC Logic INFOID:000000011461675

DTC DETECTION LOGIC

NOTE:

If DTC P0506 is displayed with other DTC, first perform the trouble diagnosis for the other DTC.

DTC No.	Trouble diagnosis (Trouble diagnosis con- tent)	DTC detecting condition	Possible cause
P0506	ISC SYSTEM (Idle speed control system RPM lower than expected)	The idle speed is less than the target idle speed by 100 rpm or more.	Electric throttle control actuator Intake air leak

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

If the target idle speed is out of the specified value, perform <u>EC-158, "Work Procedure"</u>, before conducting DTC Confirmation Procedure.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Always perform the test at a temperature above –10°C (14°F).

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and run it for at least 1 minute at idle speed.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-398, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461676

1. CHECK INTAKE AIR LEAK

- 1. Start engine and let it idle.
- Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

YES >> Discover air leak location and repair.

P0506 ISC SYSTEM

>> Replace ECM. Refer to EC-578, "Removal and Installation". NO

EC

Α

С

D

Е

F

G

Н

J

Κ

L

M

Ν

0

Ρ

P0507 ISC SYSTEM

Description INFOID:000000011461677

The ECM controls the engine idle speed to a specified level through the fine adjustment of the air, which is let into the intake manifold, by operating the electric throttle control actuator. The operating of the throttle valve is varied to allow for optimum control of the engine idling speed. The crankshaft position sensor (POS) detects the actual engine speed and sends a signal to the ECM.

The ECM controls the electric throttle control actuator so that the engine speed coincides with the target value memorized in the ECM. The target engine speed is the lowest speed at which the engine can operate steadily. The optimum value stored in the ECM is determined by taking into consideration various engine conditions, such as during warming up, deceleration, and engine load (air conditioner, power steering and cooling fan operation, etc.).

DTC Logic INFOID:000000011461678

DTC DETECTION LOGIC

NOTE:

If DTC P0507 is displayed with other DTC, first perform the trouble diagnosis for the other DTC.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0507	ISC SYSTEM (Idle speed control system RPM higher than expected)	The idle speed is more than the target idle speed by 200 rpm or more.	Electric throttle control actuatorIntake air leakPCV system

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

If the target idle speed is out of the specified value, perform <u>EC-158, "Work Procedure"</u>, before conducting DTC Confirmation Procedure.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Always perform the test at a temperature above –10°C (14°F).

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and run it for at least 1 minute at idle speed.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-400, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461679

1. CHECK PCV HOSE CONNECTION

Confirm that PCV hose is connected correctly.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

P0507 ISC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

2.CHECK INTAKE AIR LEAK

- 1. Start engine and let it idle.
- 2. Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

- YES >> Discover air leak location and repair.
- NO >> Replace ECM. Refer to EC-578, "Removal and Installation".

EC

Α

D

Е

F

G

Н

K

L

M

Ν

0

P050A, P050E COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P050A, P050E COLD START CONTROL

Description INFOID:000000011461680

ECM controls ignition timing and engine idle speed when engine is started with pre-warming up condition. This control promotes the activation of three way catalyst by heating the catalyst and reduces emissions.

DTC Logic INFOID:0000000011461681

DTC DETECTION LOGIC

NOTE:

If DTC P050A, P050B or P050E is displayed with other DTC, first perform the trouble diagnosis for other DTC.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P050A	Cold start idle air control system performance	ECM does not control engine idle speed properly when engine is started with pre-warming up condition.	Lack of intake air volume Fuel injection system
P050E	Cold start engine exhaust temperature too low	The temperature of the catalyst inlet does not rise to the proper temperature when the engine is started with pre-warming up condition.	• ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

(P)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 4. Check the indication of "COOLAN TEMP/S".

With GST

Follow the procedure "With CONSULT" above.

Is the value of "COOLAN TEMP/S" between 4°C (39°F) and 36°C (97°F)?

YES >> GO TO 3.

NO-1 [If it is below 4°C (39°F)]>>Warm up the engine until the value of "COOLAN TEMP/S" reaches 4°C (39°F) or more. Retry from step 1.

NO-2 [If it is above 36°C (97°F)]>>Cool engine down to less than 36°C (97°F). Retry from step 1.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

(P)With CONSULT

- 1. Set the select lever in N range.
- Start the engine and warm up in idle with the value of "COOLAN TEMP/S" between 5°C (41°F) and 40°C (104°F) for more than 15 seconds.
- 3. Check 1st trip DTC.

With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

P050A, P050E COLD START CONTROL	
< DTC/CIRCUIT DIAGNOSIS > [MR FOR NISMO RS MODELS]	_
YES >> Proceed to <u>EC-403, "Diagnosis Procedure"</u> . NO >> INSPECTION END	А
Diagnosis Procedure	2
1. PERFORM IDLE AIR VOLUME LEARNING	EC
Perform <u>EC-158, "Work Procedure"</u> . <u>Is Idle Air Volume Learning carried out successfully?</u>	С
YES >> GO TO 2. NO >> Follow the instruction of Idle Air Volume Learning.	
2.CHECK INTAKE SYSTEM	D
Check for the cause of intake air volume lacking. Refer to the following. • Crushed intake air passage	
 Intake air passage clogging Clogging of throttle body 	Е
Is the inspection result normal?	
YES >> GO TO 3. NO >> Repair or replace malfunctioning part	F
3.CHECK FUEL INJECTION SYSTEM FUNCTION	
Perform DTC Confirmation Procedure for DTC P0171. Refer to EC-293, "DTC Logic".	- G
Is the inspection result normal?	
YES >> GO TO 4. NO >> Proceed to <u>EC-294, "Diagnosis Procedure"</u> for DTC P0171.	Н
4.PERFORM DTC CONFIRMATION PROCEDURE	
1. Turn ignition switch ON.	-
Erase DTC. Perform DTC Confirmation Procedure.	
See EC-402, "DTC Logic".	J
Is the 1st trip DTC P050A or P050E displayed again?	
YES >> Replace ECM. Refer to <u>EC-578, "Removal and Installation",</u> NO >> INSPECTION END	K
	ı
	_
	M
	Ν
	0
	Р

P0520 EOP SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	Detecting condition	Possible cause
P0520	EOP SENSOR/SWITCH [Engine oil pressure (EOP) sensor circuit]	Signal voltage from the EOP sensor remains at more than 4.9 V / less than 0.26 V for 5 seconds or more.	Harness or connectors (EOP sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted) (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) Engine oil level abnormality EOP sensor Camshaft position sensor Fuel rail pressure sensor Battery current sensor G sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-404, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461684

1. CHECK ENGINE OIL

- Turn ignition switch OFF.
- Check engine oil level and pressure. Refer to <u>LU-9, "Inspection"</u>.

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

P0520 EOP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

$\overline{2}$.check eop sensor power supply-i

- 1. Disconnect EOP sensor connector.
- 2. Turn ignition switch ON.
- 3. Check the voltage between EOP sensor harness connector terminals.

 EOP sensor
 Voltage (Approx.)

 Connector
 terminal
 5 V

Inspection result normal?

YES >> GO TO 7.

NO >> GO TO 3.

3.CHECK EOP SENSOR POWER SUPPLY-II

Check the voltage between EOP sensor harness connector and the ground.

	+		Maltana	
EOP :	sensor	_	Voltage (Approx.)	
Connector Terminal			, , ,	
F43	3	Ground	5 V	

Is inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check harness connector for short to power and short to ground, between the following terminals.

ECM		Sensor			
Connector	Terminal	Name	Connector	Terminal	
		FRP sensor	F5	1	
F25	39	EOP sensor	F43	3	
		Turbocharger boost sensor	F75	1	
	68 72	Battery current sensor	F52	1	
F26		G sensor	B32	3	
F20		CMP sensor	F109	1	
		EVT control position sensor	F110	1	
E18 118		APP sensor 2	E101	5	

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

CHECK EOP SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EOP sensor harness connector and ECM harness connector.

EC

Α

D

Е

F

Н

K

. .

IVI

N

+		-		
EOP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F43	1	F25	44	Existed

4. Also check harness for short to power.

Is inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

	+ CM	_	Continuity	
Connector	Terminal			
F25	1			
	2		Existed	
	123	Ground		
E18	124			
	127			

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

7.CHECK EOP SENSOR SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between EOP sensor harness connector and ECM harness connector.

+		_		
EOP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F43	2	F25	43	Existed

Also check harness for short to ground and to power.

Is inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

8.CHECK EOP SENSOR

Refer to EC-406, "Component Inspection".

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

Component Inspection

INFOID:0000000011461685

1. CHECK EOP SENSOR

- Turn ignition switch OFF.
- 2. Disconnect EOP sensor harness connector.
- 3. Check resistance between EOP sensor connector terminals.

P0520 EOP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

EOP	sensor		
+	_	Condition	Resistance (kΩ)
Terminal			
1	2	None	4 kΩ – 10 kΩ
ı	3		2 kΩ – 8 kΩ
2	1		4 kΩ – 10 kΩ
2	3		1 kΩ – 3 kΩ
2	1		2 kΩ – 8 kΩ
3	2		1 kΩ – 3 kΩ

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Replace EOP sensor. Refer to EM-113, "Exploded View".

Α

EC

С

D

Е

F

G

Н

K

L

M

Ν

0

[MR FOR NISMO RS MODELS]

P0524 ENGINE OIL PRESSURE

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0524	ENGINE OIL PRESSURE (Engine oil pressure too low)	An EOP sensor signal voltage applied to ECM remains lower than the specified value continuously for 10 seconds or more when the engine speed is 1,000 rpm or more.	 Decrease in engine oil pressure Decrease in engine oil level Engine oil condition EOP sensor Engine body

DTC CONFIRMATION PROCEDURE

CAUTION:

If "EC-409, "Diagnosis Procedure"" is unfinished, be sure to perform Step 3 and 4.

1.PRECONDITIONING-1

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2.PRECONDITIONING-2

Is "Diagnosis Procedure" of DTC P0524 finished?

YES >> GO TO 3.

NO >> GO TO 4.

3. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and warm it up to normal operating temperature.
- 2. Maintain the following conditions for about 10 consecutive seconds.

Selector lever	P or N position
Engine coolant temperature	70°C (158°F) or more
Engine speed	1,000 rpm or more

NOTE:

With engine speed set around 4,000 rpm, the phenomenon can be reproduced more easily.

3. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-409, "Diagnosis Procedure".

NO >> INSPECTION END

4. CHECK ENGINE OIL LEVEL

Check engine oil pressure. Refer to LU-9, "Inspection".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Proceed to <u>EC-409</u>, "<u>Diagnosis Procedure</u>".

CHECK ENGINE OIL PRESSURE

(P)With CONSULT

P0524 ENGINE OIL PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

D

Е

Н

Ν

INFOID:0000000011461687

- 1. Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Start the engine and check that "EOP SENSOR" changes, according to engine speeds.

Monitor item	Condition		Value (Approx.)
EOP SENSOR	Engine oil temperature: 80°C (176°F) Selector lever: P or N position	Engine speed: Idle	1,450 mV or more
LOF SENSOR	 Air conditioner switch: OFF No load	Engine speed: 2,000 rpm	2,850 mV or more

Check engine oil level. Refer to <u>LU-9</u>, "Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Proceed to <u>EC-409</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

1. CHECK ENGINE OIL LEVEL

- Turn ignition switch OFF.
- Check engine oil level. Refer to <u>LU-9, "Inspection"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2.CHECK ENGINE OIL PRESSURE

(I) With CONSULT

- Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Start the engine and check that "EOP SENSOR" changes, according to engine speeds.

Monitor item	Condition		Value (Approx.)
EOP SENSOR	 Engine oil temperature: 80°C (176°F) Selector lever: P or N position 	Engine speed: Idle	1,450 mV or more
LOI GLINGOR	Air conditioner switch: OFF No load	Engine speed: 2,000 rpm	2,850 mV or more

®Without CONSULT

Check engine oil pressure. Refer to LU-9, "Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check oil pump. Refer to <u>LU-18</u>, "Inspection".

3.CHECK EOP SENSOR

Check EOP sensor. Refer to EC-410, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

4. CHECK ENGINE OIL LEAKAGE

Check engine oil leakage. Refer to LU-8, "Engine Lubrication System".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

Revision: 2014 October EC-409 2015 JUKE

P0524 ENGINE OIL PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

5. CHECK CAUSE OF ENGINE OIL CONSUMPTION

Check the following item.

Step	Inspection item	Equipment	Standard	Reference
1	PCV valve	EC-577, "Inspection"		
2	Turbocharger	EM-40, "Inspection"		
3	Exhaust front tube	Visual	No blockingNo abnormal sounds	_
4	Oil pump	Visual	No blockingNo abnormal sounds	_
4	Oil pump	LU-18, "Inspection"		
5	PistonPiston pinPiston ring	Piston to piston pin oil clearance Piston ring side clearance Piston ring end gap		EM-132, "Description"
6	Cylinder block	Cylinder block top surface distortion Piston to cylinder bore clearance		EM-122, "Inspection"

>> Repair or replace error-detected parts.

Component Inspection

INFOID:0000000011461688

1. CHECK EOP SENSOR

- 1. Turn ignition switch OFF.
- 2. Disconnect EOP sensor harness connector.
- 3. Check resistance between EOP sensor connector terminals.

EOP sensor			
+	_	Condition	Resistance (k Ω)
Terminal			
1	2	None	4 kΩ – 10 kΩ
'	3		2 kΩ – 8 kΩ
2	1		4 kΩ – 10 kΩ
2	3		1 kΩ – 3 kΩ
3	1		2 kΩ – 8 kΩ
	2		1 kΩ – 3 kΩ

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Replace EOP sensor. Refer to EM-113, "Exploded View".

Α

EC

D

Е

F

Н

L

Ν

Р

INFOID:0000000011461690

P0603 ECM

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0603	ECM BACK UP CIRCUIT [Internal control module keep alive memory (KAM) error]	 Malfunction in the internal back up RAM of ECM. Malfunction in the internal EEP-ROM system of ECM. 	ECM power supply ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 1 second.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Repeat step 1 and 2 for 10 times.
- Turn ignition switch ON.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-411</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

${f 1}$.CHECK ECM POWER SUPPLY AND GROUND CIRCUIT

Perform trouble diagnosis for ECM power supply and ground circuit. Refer to <u>EC-183, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- 2. Erase DTC.
- Perform DTC confirmation procedure. Refer to <u>EC-411, "DTC Logic"</u>.

Is the 1st trip DTC P0603 displayed again?

YES >> Replace ECM. Refer to EC-578, "Removal and Installation".

NO >> INSPECTION END

P0604 ECM

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0604	ECM [Internal control module random access memory (RAM) error]	Malfunction in the internal RAM of ECM.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON (engine stopped) and wait least 20 minutes.

CAUTION:

Never start engine during this procedure.

- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-412, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461692

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- Erase DTC.
- 3. Perform DTC confirmation procedure. Refer to <a>EC-412, "DTC Logic".

Is the 1st trip DTC P0604 displayed again?

YES >> Replace ECM. Refer to EC-578, "Removal and Installation".

NO >> INSPECTION END

[MR FOR NISMO RS MODELS]

P0605 ECM

DTC Logic INFOID:0000000011461693

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0605	ECM [Internal control module read only memory (ROM) error]	Malfunction in the internal ROM of ECM.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch ON (engine stopped) and wait least 20 minutes.

CAUTION:

Never start engine during this procedure.

- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-413, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- Erase DTC.
- Perform DTC confirmation procedure. Refer to <a>EC-413, "DTC Logic".

Is the 1st trip DTC P0605 displayed again?

YES >> Replace ECM. Refer to EC-578, "Removal and Installation".

NO >> INSPECTION END

EC-413 Revision: 2014 October 2015 JUKE

Α

EC

D

Е

F

Н

K

L

INFOID:0000000011461694

M

Ν

P0606 ECM

DTC Logic INFOID:000000011461695

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0606	CONTROL MODULE (Control module processor)	Malfunction in ECM processor.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

1. Turn ignition switch ON (engine stopped) and wait at least 10 seconds.

CAUTION:

Never start engine during this procedure.

- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-414, "Diagnosis Procedure".

NO >> GO TO 3.

3.perform dtc confirmation procedure-ii

- Start engine.
- Rev up the engine quickly to approximately 3,000 rpm under unloaded condition and completely release the accelerator pedal.
- 3. Let the engine idle and wait at least 10 seconds.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON.
- 6. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-414, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461696

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- Erase DTC.
- Perform DTC confirmation procedure for 3 times. Refer to EC-414, "DTC Logic".

Is the 1st trip DTC P0606 displayed again?

YES >> Replace ECM. Refer to EC-578, "Removal and Installation".

NO >> INSPECTION END

[MR FOR NISMO RS MODELS]

P0607 ECM

DTC Logic INFOID:0000000011461697

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0607	ECM (Control module performance)	ECM internal communication system is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON (engine stopped) and wait least 10 seconds.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-415, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- 2. Erase DTC.
- Perform DTC confirmation procedure. Refer to EC-415, "DTC Logic".

Is the 1st trip DTC P0607 displayed again?

>> Replace ECM. Refer to EC-578, "Removal and Installation". YES

>> INSPECTION END NO

EC-415 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

INFOID:0000000011461698

Ν

P060A ECM

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P060A	CONTROL MODULE (Internal control module monitoring processor per- formance)	ECM internal monitoring processor is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait at least 10 seconds.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Repeat step 1 and 2 for 5 times.
- 4. Turn ignition switch ON.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-416, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461700

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- Erase DTC.
- Perform DTC confirmation procedure. Refer to <u>EC-416, "DTC Logic"</u>.

Is the 1st trip DTC P060A displayed again?

YES >> Replace ECM. Refer to EC-578, "Removal and Installation".

NO >> INSPECTION END

[MR FOR NISMO RS MODELS]

P060B ECM

DTC Logic INFOID:0000000011461701

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P060B	CONTROL MODULE (Internal control module A/ D processing performance)	ECM internal analog/digital conversion processing system is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON (engine stopped) and wait least 10 seconds.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-417, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- 2. Erase DTC.
- Perform DTC confirmation procedure. Refer to EC-417, "DTC Logic".

Is the 1st trip DTC P060B displayed again?

>> Replace ECM. Refer to EC-578, "Removal and Installation". YES

>> INSPECTION END NO

EC-417 Revision: 2014 October 2015 JUKE

Α

EC

D

Е

F

Н

INFOID:0000000011461702

Ν

P0611 ECM PROTECTION

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0611 ECM PROTECTION

Description INFOID:0000000011461703

This DTC is detected when the ECM protective function is activated due to an extreme temperature increase in ECM, resulting from severe conditions such as heavy load driving.

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0611	FIC MODULE (ECM protection)	ECM overheat protection control is activated.	ECM overheated

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

This DTC is displayed as protection function history. If no malfunction is detected after the diagnosis, the customer must be informed of the activation of the protection function.

>> Proceed to EC-418, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461705

1. INSPECTION START

- 1. Perform DTC confirmation procedure. Refer to EC-413, "DTC Logic".
- 2. Check 1st trip DTC.

Is DTC P0605 detected?

YES >> Proceed to EC-413, "Diagnosis Procedure".

NO >> Explain the customer about the activation of the protection function.

P062B ECM

Description INFOID:0000000011461706

This DTC is detected when the ECM-integrated injector driver unit has a malfunction. For injector driver unit, refer to EC-32, "ECM".

INFOID:0000000011461707

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P062B	ECM (Internal control module fuel injector control performance)	Injector driver unit is malfunctioning.	Harness and connectors (Injector circuit is open or shorted) Battery power supply ECM (injector driver unit)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2 .PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine and keep the engine speed at idle for 30 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-419, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK FUEL INJECTOR

Check fuel injector. Refer to EC-529, "Component Function Check".

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- Erase DTC.
- Perform DTC confirmation procedure again. Refer to EC-419, "DTC Logic".
- Check 1st trip DTC.

Is the DTC P062B displayed again?

YES >> Replace ECM. Refer to EC-578, "Removal and Installation".

>> INSPECTION END NO

EC-419 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

K

INFOID:0000000011461708

Ν

P0643 SENSOR POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P0643 SENSOR POWER SUPPLY

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0643	SENSOR POWER/ CIRC (Sensor power supply circuit short)	ECM detects a voltage of power source for sensor is excessively low or high.	Harness or connectors (Refrigerant pressure sensor circuit is open or shorted.) (Crankshaft position sensor circuit is open or shorted) (Accelerator pedal position sensor 1 circuit is open or shorted.) (Throttle position sensor circuit is open or shorted.) (EVAP control pressure sensor circuit is open or shorted.) Refrigerant pressure sensor Crankshaft position sensor Accelerator pedal position sensor 1 Throttle position sensor EVAP control pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-420, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461710

1. CHECK SENSOR POWER SUPPLY

- Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector and ground.

P0643 SENSOR POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

-	+ CM	_	Voltage (Approx.)	
Connector	Terminal			
F25	23			
F26	58	Ground	5 V	
1 20	62	Giodila	J V	
E18	101			

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY ROUTING CIRCUIT FOR SHORT

Turn ignition switch OFF.

Check harness for short to power and to ground, between the following terminals.

ECM		Sensor		
Connector	Connector Terminal Name		Connector	Terminal
F25	23	Refrigerant pressure sensor	E49	3
125	23	EVAP control system pressure sensor	B22	3
F26	58	CKP sensor	F107	3
F20	62	TP sensor	F29	1
E18 101 APP sensor		E101	4	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. CHECK COMPONENTS

Check the following.

 Refrigerant pressure sensor Refer to <u>EC-556</u>, "Diagnosis Procedure".

EVAP control system pressure sensor

Refer to EC-375, "Component Inspection".

• Crankshaft position sensor

Refer to EC-341. "Component Inspection".

Throttle position sensor

Refer to EC-250, "Component Inspection".

Accelerator pedal position sensor

Refer to EC-511, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace malfunctioning component.

EC

Α

C

D

Е

F

Н

,

K

. .

Ν

P0850 PNP SWITCH

Description INFOID:000000011461711

For CVT models, transmission range switch is turn ON when the selector lever is P or N.

For M/T models, park/neutral position (PNP) range switch is ON when the selector lever is Neutral position. ECM detects the position because the continuity of the line (the ON) exists.

DTC Logic INFOID:000000011461712

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0850	P-N POS SW/CIRCUIT (Park/neutral position switch)	 For CVT models, the signal of transmission range switch is not changed in the process of engine starting and driving. For M/T models, the signal of the park/neutral position (PNP) switch is not changed in the process of engine starting and driving. 	Harness or connectors [The transmission range switch circuit is open or shorted.(CVT models)] [The park/neutral position (PNP) switch circuit is open or shorted.(M/T models)] Transmission range switch (CVT models) Park/neutral position (PNP) switch (M/T models)

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 5.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 3.

3.CHECK PNP SIGNAL FUNCTION

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "P/N POSI SW" in "DATA MONITOR" mode of "ENGINE" using CONSULT. Then check the "P/N POSI SW" signal as per the following conditions.

Selector lever position	Known-good signal
N or P position (CVT) Neutral position (M/T)	ON
Except above position	OFF

Is the inspection result normal?

YES >> GO TO 4.

NO >> Proceed to EC-423, "Diagnosis Procedure".

4. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to normal operating temperature.

P0850 PNP SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Maintain the following conditions for at least 60 consecutive seconds.

CAUTION:

Always drive vehicle at a safe speed.

ENG SPEED	1,400 - 6,375 rpm (CVT) 1,675 - 6,375 rpm (M/T)
COOLAN TEMP/S	More than 65°C (149°F)
B/FUEL SCHDL	1.6 - 31.8 msec
VHCL SPEED SE	More than 64 km/h (40 mph)
Selector lever	Suitable position

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-423, "Diagnosis Procedure".

NO >> INSPECTION END

${f 5}$.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-423, "Component Function Check".

NOTE:

Use component function check the overall function of the transmission range switch circuit (CVT models) or the park/neutral position (PNP) switch circuit (M/T models). During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

>> INSPECTION END YES

NO >> Proceed to EC-423, "Diagnosis Procedure".

Component Function Check

1. PERFORM COMPONENT FUNCTION CHECK

1. Turn ignition switch ON.

Check the voltage between ECM harness connector and ground as per the following conditions.

ECM				V 16	
Connector	+	-	Condition		Voltage (Approx.)
Connector	Terminal				(
E18	103	127	Selector lever	P or N (CVT) Neutral (M/T)	0 V
				Except above	Battery voltage

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-423, "Diagnosis Procedure".

Diagnosis Procedure

1.INSPECTION START

Check which type of transmission the vehicle is equipped with.

Which type of transmission?

CVT >> GO TO 2.

M/T >> GO TO 6.

2.CHECK TRANSMISSION RANGE SWITCH POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect transmission range switch harness connector.
- Turn ignition switch ON.
- Check the voltage between transmission range switch harness connector and ground.

EC

Α

Е

Н

INFOID:0000000011461713

M

Ν

INFOID:0000000011461714

< DTC/CIRCUIT DIAGNOSIS >

	+		
Transmission	range switch	_	Voltage
Connector	Terminal		
F27	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 3.

3.check transmission range switch power supply circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between transmission range switch harness connector and IPDM E/R harness connector.

	+		_	
Transmission range switch		IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		
F27	1	E15	58	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4.CHECK TRANSMISSION RANGE SWITCH SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between transmission range switch harness connector and ECM harness connector.

+		_		
Transmission range switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F27	2	E18	103	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK TRANSMISSION RANGE SWITCH

Check the transmission range switch. Refer to <u>TM-240</u>, "Component Inspection (<u>Transmission Range Switch</u>)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace transmission range switch. Refer to TM-323, "Removal and Installation".

6.CHECK PARK/NEUTRAL POSITION (PNP) SWITCH POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect PNP switch harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between PNP switch harness connector and ground.

P0850 PNP SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

DIGGING	OII DIAGI	10313 >			[
	+				•
PN	PNP switch		_	Voltage	
Connector	Termi	nal			
F56	2	G	Ground	Battery voltage	-
the inspect	ion result n	ormal?			•
•	GO TO 7.				
		trouble diag	nosis for p	ower supply c	ircuit.
.CHECK P	NP SWITCI	H INPUT SIG	GNAL CIR	CUIT	
Turn iani	tion switch	OFF.			
Disconne	ect ECM ha	rness conne			
Check th	e continuity	between PN	NP switch h	harness conne	ector and ECM harness connector.
				1	
+			_		
PNP s		E	СМ	Continuity	
Connector	Terminal	Connector	Terminal		-
F56	1	E18	103	Existed	_
1 30					
	ck harness	for short to g	ground and	to power.	
Also che		-	ground and	to power.	
Also che		-	ground and	to power.	
Also checthe inspect	ion result n	-		·	
Also che the inspect 'ES >> C	ion result n 30 TO 8. Repair or re	ormal? place error-d		·	
Also checthe inspector ES >> COOLONG CHECK P	ion result n GO TO 8. Repair or re NP SWITCI	ormal? place error-d	detected pa	arts.	POSITION (PNP) SWITCH : Component Inspec
Also checthe inspect YES >> CONO >> F CHECK P	ion result n GO TO 8. Repair or re NP SWITCI	ormal? place error-d	detected pa	arts.	POSITION (PNP) SWITCH : Component Inspec
Also ched the inspect (ES >> 0 NO >> F CHECK P neck the Pt	ion result n GO TO 8. Repair or re NP SWITCI	ormal? place error-d H Refer to <u>TM</u>	detected pa	arts.	POSITION (PNP) SWITCH : Component Inspec
Also check the inspect YES >> CON >> FOR THE CK POWER TO THE CHECK POWER TO THE INSPECT YES >> CONTROL TO THE INSPECT YES	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? mittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect YES >> CON >> FOR THE CK POWER TO THE CHECK POWER TO THE INSPECT YES >> CONTROL TO THE INSPECT YES	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? mittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	
Also check the inspect YES >> 0 NO >> For a check the Planet inspect YES >> 0	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? mittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect YES >> 0 NO >> For a check the Planet inspect YES >> 0	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? mittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect YES >> 0 NO >> For a check the Planet inspect YES >> 0	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? mittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect YES >> 0 NO >> For a check the Planet inspect YES >> 0	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? mittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect YES >> 0 NO >> For a check the Planet inspect YES >> 0	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? nittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect YES >> CON >> FOR THE CK POWER TO THE CHECK POWER TO THE INSPECT YES >> CONTROL TO THE INSPECT YES	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? nittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect YES >> 0 NO >> For a check the Planet inspect YES >> 0	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? nittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect /ES >> 0 NO >> F CHECK P neck the Pl nn". the inspect /ES >> 0	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? nittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect /ES >> 0 NO >> F CHECK P neck the Pl nn". the inspect /ES >> 0	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? nittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect (FS >> CHECK Peck the Pron". the inspect (FS >> CHECK Peck the spect (FS >> CHECK Peck the inspect Peck the inspect Peck the inspect (FS >> CHECK Peck the inspect Peck the Peck the inspect Peck the inspect Peck the inspect Peck the inspect Peck the Peck the In	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? nittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also check the inspect YES >> CHECK Pheck the Plan". the inspect YES >> C	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? nittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".
Also ched the inspect YES >> C NO >> F CHECK P heck the Pl on". the inspect YES >> C	ion result n GO TO 8. Repair or re NP SWITCI NP switch. ion result n Check interr	ormal? place error-o H Refer to TM ormal? nittent incide	detected pa	arts. VNEUTRAL F o GI-44, "Inter	mittent Incident".

P1078 EVT CONTROL POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1078 EVT CONTROL POSITION SENSOR

DTC Logic INFOID:0000000011461715

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1078	EXH TIM SEN/CIRC-B1 (Exhaust valve timing control position sensor circuit)	An excessively high or low voltage from the sensor is sent to ECM.	Harness or connectors (Exhaust valve timing control position sensor circuit is open or shorted) (Camshaft position sensor circuit is open or shorted) (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) Accumulation of debris to the signal pick-up portion of the camshaft Exhaust valve timing control position sensor Crankshaft position sensor Camshaft position sensor Fuel rail pressure sensor Battery current sensor G sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start engine and let it idle for 10 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-426, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461716

1. CHECK EXHAUST VALVE TIMING (EVT) CONTROL POSITION SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect exhaust valve timing (EVT) control position sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between EVT control position sensor harness connector and ground.

P1078 EVT CONTROL POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+		Million	
EVT :	EVT sensor		Voltage (Approx.)	
Connector Terminal			, , ,	
F110	1	Ground	5 V	

EC

Α

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2. 0

D

Е

F

Н

K

L

Ν

2.CHECK SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

ECM		Sensor			
Connector	Terminal	Name	Connector	Terminal	
		FRP sensor	F5	1	
F25	39	EOP sensor	F43	3	
		Turbocharger boost sensor	F75	1	
	68	Battery current sensor	F52	1	
F26	00	G sensor	B32	3	
F20	72	CMP sensor	F109	1	
12		EVT control position sensor	F110	1	
E18	118	APP sensor 2	E101	5	

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check evt control position sensor ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between EVT control position sensor harness connector and ECM harness connector.

+		-		
EVT control position sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F110	2	F26	59	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK EVT CONTROL POSITION SENSOR INPUT SIGNAL CIRCUIT

- 1. Disconnect ECM harness connector.
- Check the continuity between EVT control position sensor harness connector and ECM harness connector.

Revision: 2014 October EC-427 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

+		_		
EVT control position sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F110	3	F26	67	Existed

3. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.CHECK EVT CONTROL POSITION SENSOR

Check the EVT control position sensor. Refer to EC-428, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace EVT control position sensor. Refer to EM-88, "Removal and Installation".

6.CHECK CAMSHAFT (EXT)

Check the following.

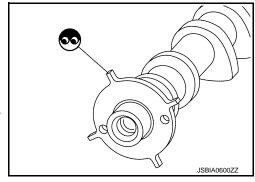
- Accumulation of debris to the signal plate of camshaft rear end
- · Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> Check intermittent incident. Refer to <u>GI-44, "Intermittent Incident"</u>.

NO

>> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to EM-88, "Removal and Installation".



Component Inspection

INFOID:0000000011461717

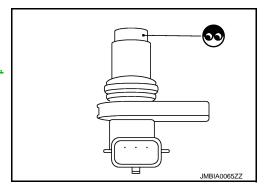
1. EXHAUST VALVE TIMING (EVT) CONTROL POSITION SENSOR-I

- 1. Turn ignition switch OFF.
- 2. Disconnect EVT control position sensor harness connector.
- 3. Loosen the fixing bolt of the sensor.
- 4. Remove the sensor.
- 5. Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace EVT control position sensor. Refer to <u>EM-75</u>, "Exploded View".



2.EVT CONTROL POSITION SENSOR-II

Check resistance EVT control position sensor terminals as shown below.

P1078 EVT CONTROL POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

EVT control position sensor		
+	_	Resistance
Terr	ninal	
1	2	
'	3	Except 0 or ∞ Ω [at 25°C (77°F)]
2	3	
Is the inspection	result normal?	

YES >> INSPECTION END

>> Replace EVT control position sensor. Refer to EM-75, "Exploded View". NO

EC

Α

D

Е

F

G

Н

Κ

L

M

Ν

0

P1148 CLOSED LOOP CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1148 CLOSED LOOP CONTROL

DTC Logic

DTC DETECTION LOGIC

NOTE:

DTC P1148 is displayed with DTC for A/F sensor 1.

When the DTC is detected, perform the trouble diagnosis of DTC corresponding to A/F sensor 1.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1148	CLOSED LOOP-B1 (Closed loop control function)	The closed loop control function does not operate even when vehicle is being driven in the specified condition.	 Harness or connectors (A/F sensor 1 circuit is open or shorted.) A/F sensor 1 A/F sensor 1 heater

Diagnosis Procedure

INFOID:0000000011461719

DTC P1148 is displayed with DTC for A/F sensor 1.

When the DTC is detected, perform the trouble diagnosis of DTC corresponding to A/F sensor 1. Refer to <u>EC-113</u>, "<u>DTC Index</u>".

[MR FOR NISMO RS MODELS]

P1197 OUT OF GAS

Description INFOID:0000000011461720

This diagnosis result is detected when the fuel level of the fuel tank is extremely low and the engine does not run normally.

INFOID:0000000011461721

DTC DETECTION LOGIC

DTC Logic

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1197	FUEL RUN OUT (Out of gas)	 Fuel rail pressure remains at 1.1 MPa (11 bar, 11.2 kg/cm², 159.5 psi) or less for 5 seconds or more with the fuel level too low. Fuel rail pressure remains 2.7 MPa (27 bar, 27.5 kg/cm², 392 psi) lower than a target fuel pressure for 5 seconds or more with the fuel level too low. 	Out of gas Harness or connectors (Low pressure fuel pump circuit is open or shorted.) Low pressure fuel pump Fuel pressure regulator Low pressure fuel system Harness or connectors (High pressure fuel pump circuit is shorted.) High pressure fuel pump High pressure fuel system Fuel rail pressure sensor Disconnection of the fuel hose

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

Start the engine.

Does the engine start?

YES >> GO TO 3.

NO >> Proceed to EC-431, "Diagnosis Procedure".

3.PERFORM DTC CONFIRMATION PROCEDURE-II

Warm up the engine to the normal operating temperature.

NOTE:

For best results, warm up the engine until "COOLAN TEMP/S" on "DATA MONITOR" mode of "ENGINE" using CONSULT reaches at least 70°C (158°F).

- 2. Keep the engine speed at 3,500 rpm for 5 seconds and let it idle at least 60 seconds.
- Check the 1st trip DTC.

NOTE:

If the fuel tank has sufficient fuel, this diagnosis result may not be detected.

Is 1st trip DTC detected?

YES >> Proceed to EC-431, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

 ${f 1}$. REFUEL THE VEHICLE

EC-431 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

K

M

Ν

Р

INFOID:0000000011461722

P1197 OUT OF GAS

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

1. Refuel 10 liter (10 US qt, 8 imp qt).

CAUTION:

Never refuel more than 10 liter.

2. Start the engine and keep the engine speed at 3,000 rpm for 30 seconds.

NOTE:

For best results, warm up the engine until "COOLAN TEMP/S" on "DATA MONITOR" mode of "ENGINE" using CONSULT reaches at least 70°C (158°F).

- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- 5. Turn ignition switch OFF and wait at least 10 seconds.
- 6. Turn ignition switch ON.
- 7. Erase the DTC.
- 8. Start the engine and let it idle at least 60 seconds.
- 9. Perform DTC confirmation procedure again. Refer to EC-431, "DTC Logic".

Is 1st trip DTC detected?

YES >> GO TO 2.

NO >> INSPECTION END

2.CHECK LOW PRESSURE FUEL PUMP

Refer to EC-534, "Component Function Check".

Is inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HIGH PRESSURE FUEL PUMP

Refer to EC-537, "Component Function Check".

Is inspection result normal?

YES >> Check the fuel hose for disconnection and looseness.

NO >> Repair or replace error-detected parts.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P119A, P119B FUEL RAIL PRESSURE SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P119A	FUEL PRESSURE SENSOR (Fuel pressure sensor)	 All of the following conditions are satisfied: Battery voltage: 8 V or more Under engine start condition Engine coolant temperature at previous ignition switch OFF: 65°C (149°F) or more Engine coolant temperature: 35°C (65°F) or less Temperature difference between engine coolant and intake air: Less than 6°C (42°F) Fuel rail pressure: Less than 1.0 MPa (10.2 kg/cm², 145 psi) (calculated by ECM) Fuel system monitor: Excessively RICH 	Harness or connectors (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbochagger baset sensor gircuit is
P119B	FUEL PRESSURE SENSOR (Fuel pressure sensor)	All of the following conditions are satisfied: Battery voltage: 8 V or more Ignition switch: ON (engine stopped) Engine coolant temperature at previous ignition switch OFF: 65°C (149°F) or more Engine coolant temperature: 35°C (65°F) or less Temperature difference between engine coolant and intake air: Less than 6°C (42°F) Fuel rail pressure: More than 1.5 MPa (15.3 kg/cm², 217 psi) (calculated by ECM) Fuel system monitor: Excessively LEAN	 (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) Fuel rail pressure sensor Battery current sensor G sensor Camshaft position sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING-1

If DTC Confirmation Procedure is previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, check that battery voltage is 9 V or more with ignition switch ON.

>> GO TO 2.

2.PRECONDITIONING-2

NOTE:

- When it is certain that the previous driving is performed with the engine warmed up, the next steps can be performed.
- When it is difficult to satisfy the conditions, performing Component Function Check can identify the presence
 or absence of malfunction in the part/system that may result in a possible cause of this DTC. (Perform DTC
 Confirmation Procedure as much as possible.)
- 1. Start the engine and warm it up until engine coolant temperature reaches 70°C (158°F) or more.
- 2. Stop the engine and leave the vehicle in a cool place (soak the engine) until the engine coolant temperature reaches 35°C (95°F) or less.

CAUTION:

- The difference between air temperature and engine coolant temperature must be 5°C (9°F) or less.
- Never turn ignition switch ON during soak the engine.

Revision: 2014 October EC-433 2015 JUKE

Α

EC

L

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Are the conditions satisfied?

YES >> GO TO 4. NO >> GO TO 3.

3. COMPONENT FUNCTION CHECK

(P)With CONSULT

- 1. Turn ignition switch OFF.
- 2. Start the engine.
- 3. On CONSULT screen, select "DATA MONITOR" mode of "ENGINE".
- 4. Check the value of "FUEL PRES SEN V" under the following conditions.

Monitor Item	Condition	Values/Status
	Engine speed: Idle	1,140 – 1,460 mV
FUEL PRES SEN V	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

®Without CONSULT

- 1. Turn ignition switch OFF.
- 2. Start the engine.
- Check fuel rail pressure sensor signal voltage.

	ECM			
Connector	+ - Terminal		Condition	Value (Approx.)
Connector				(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
F5	2	3	[Engine is running]Warm-up conditionIdle speed	1.14 – 1.46 V
сэ	2	3	[Engine is running]Warm-up conditionRevving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Proceed to EC-434, "Diagnosis Procedure".

f 4.PERFORM DTC CONFIRMATION PROCEDURE-1

(P)With CONSULT

- 1. Turn ignition switch ON (engine stopped).
- On CONSULT screen, select "ENGINE" >> "DATA MONITOR" >> "COOLAN TEMP/S" and "INT/A TEMP SE".
- 3. Check that the indicated value of "COOLAN TEMP/S" is less than 35°C (95°F).
- Check that the difference between "INT/A TEMP SE" and "COOLAN TEMP/S" is 5°C (9°F) or less.
- 5. Check "Self-diagnostic result" of "ENGINE".

Is the DTC detected?

YES >> Proceed to EC-434, "Diagnosis Procedure".

NO-1 (Conditions satisfied)>>GO TO 5.

NO-2 (Conditions not satisfied)>>GO TO 2.

${f 5.}$ PERFORM DTC CONFIRMATION PROCEDURE-2

- 1. Start the engine (or cranking) at least 1 second.
- 2. Check "Self-diagnostic result" of "ENGINE".

Is the DTC detected?

- YES >> Proceed to EC-434, "Diagnosis Procedure".
- NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011758677

NOTE:

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Turning the ignition switch ON with FRP sensor harness connector disconnected causes ECM to detect DTC P119A and P119B. Be sure to erase the DTC when the diagnosis procedure.

1. CHECK FUEL RAIL PRESSURE (FRP) SENSOR POWER SUPPLY-1

- 1. Turn ignition switch OFF.
- 2. Disconnect FRP sensor connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between FRP sensor harness connector terminals.

	FRP sensor	Villa	
Connector	+	_	Voltage (Approx.)
Connector	tern	ninal	, , ,
F5	1	3	5 V

Inspection result normal?

YES >> GO TO 7.

NO >> GO TO 2.

2. CHECK FRP SENSOR POWER SUPPLY-2

Check the voltage between FRP sensor harness connector and the ground.

	+		Maltana	
FRP	sensor	_	Voltage (Approx.)	
Connector	Terminal		, , ,	
F5	1	Ground	5 V	

Is inspection result normal?

YES >> GO TO 5.

NO >> GO TO 3.

3.CHECK SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

	+		_	
FRP	sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F5	1	F25	39	Existed

4. Also check harness for short to power and short to ground.

Is inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

ECM		Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1

Revision: 2014 October EC-435 2015 JUKE

EC

Α

D

Е

F

Н

П

J

K

Ν

0

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

ECM		Sensor			
Connector	Terminal	Name	Connector	Terminal	
	68	Battery current sensor	F52	1	
F26	00	G sensor	B32	3	
1 20	72	CMP sensor	F109	1	
		EVT control position sensor	F110	1	
E18	118	APP sensor 2	E101	5	

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected part.

5.CHECK FRP SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

+		_		
FRP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F5	3	F25	44	Existed

4. Also check harness for short to power.

Is inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

$\mathsf{6}.$ CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and the ground.

Е	CM	Ground	Continuity	
Connector	Connector Terminal		Continuity	
F25	1			
123	2		Existed	
	123	Ground		
E18	124			
	127			

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

7.CHECK FRP SENSOR SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

+			_	
FRP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F5	2	F25	18	Existed

4. Also check harness for short to ground and to power.

Is inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> Replace fuel rail pressure sensor. Refer to EM-53, "Exploded View".

NO >> Repair or replace error-detected parts.

Α

EC

С

D

Е

F

G

Н

J

K

L

M

Ν

0

DTC Logic INFOID:000000011461595

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P119C	FUEL PRESSURE SENSOR (Fuel pressure sensor)	All of the following conditions are satisfied: • Battery voltage: 8 V or more • Engine speed: 50 rpm or more • Engine coolant temperature: With a background of 65°C (149°F) or more during the trip • Remaining fuel amount: 15% or more • Fuel cut: No • Rail pressure between MAX and MIN differs more than 0.05 MPa (0.51 kg/cm², 7.25 psi).	Harness or connectors (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) Fuel rail pressure sensor Battery current sensor G sensor Camshaft position sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC P119C is displayed with DTC P0190, first perform the confirmation procedure (trouble diagnosis) for DTC P0190.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to EC-308, "DTC Logic".

NO >> GO TO 2.

2.PRECONDITIONING-1

If DTC Confirmation Procedure is previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, check that battery voltage is 9 V or more with ignition switch ON.
- Remaining fuel amount must be 15% or more.

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine and warm it up until the engine coolant temperature reaches 70°C (158°F) or more.
- 2. Drive the vehicle and accelerate 3 consecutive seconds or more with the engine speed 1,500 rpm or more.
- 3. Check "Self-diagnostic result" of "ENGINE".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the DTC detected?

YES >> Proceed to EC-439, "Diagnosis Procedure".

NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident"

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011461596

NOTE:

Turning the ignition switch ON with FRP sensor harness connector disconnected causes ECM to detect DTC P119C. Be sure to erase the DTC when the diagnosis procedure.

1. CHECK DTC PRIORITY

If DTC P119C is displayed with DTC P0190, first perform the confirmation procedure (trouble diagnosis) for DTC P0190.

Is applicable DTC detected?

>> Perform diagnosis of applicable. Refer to EC-308, "DTC Logic".

NO >> GO TO 2.

2.CHECK FUEL RAIL PRESSURE (FRP) SENSOR POWER SUPPLY-1

- Turn ignition switch OFF.
- Disconnect FRP sensor connector.
- Turn ignition switch ON.
- Check the voltage between FRP sensor harness connector terminals.

FRP sensor			Valence
Connector	+	_	Voltage (Approx.)
Connector	tern	ninal	, , ,
F5	1	3	5 V

Inspection result normal?

YES >> GO TO 8.

NO >> GO TO 3.

3.CHECK FRP SENSOR POWER SUPPLY-2

Check the voltage between FRP sensor harness connector and the ground.

	+		Valtaga	
FRP sensor		_	Voltage (Approx.)	
Connector	Terminal		() ()	
F5	1	Ground	5 V	

Is inspection result normal?

YES >> GO TO 6.

>> GO TO 4. NO

4. CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check harness connector for short to power and short to ground, between the following terminals.

+		-				
FRP	sensor	ECM		ECM Co		Continuity
Connector	Terminal	Connector	Terminal			
F5	1	F25	39	Existed		

Also check harness for short to power and short to ground.

Is inspection result normal?

EC-439 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

E	СМ	Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1
	68	Battery current sensor	F52	1
F26		G sensor	B32	3
F20	72	CMP sensor	F109	1
	12	EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected part.

6.CHECK FRP SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

	+		_	
FRP	sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F5	3	F25	44	Existed

Also check harness for short to power.

Is inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7. CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and the ground.

Е	ECM		Continuity	
Connector	Terminal	Ground	Continuity	
F25	1			
123	2			
	123	Ground	Existed	
E18	124			
	127			

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

8. CHECK FRP SENSOR SIGNAL CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

	+ -					
FRP	sensor	ECM		ECM Conti		Continuity
Connector	Terminal	Connector	Terminal			
F5	2	F25	18	Existed		

4. Also check harness for short to ground and to power.

Is inspection result normal?

YES >> Replace fuel rail pressure sensor. Refer to EM-53, "Exploded View".

NO >> Repair or replace error-detected parts.

EC

Α

С

D

Е

F

G

Н

J

Κ

L

M

N

0

P1212 TCS COMMUNICATION LINE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1212 TCS COMMUNICATION LINE

Description INFOID:0000000011461723

This CAN communication line is used to control the smooth engine operation during the TCS operation. Pulse signals are exchanged between ECM and "ABS actuator and electric unit (control unit)".

Be sure to erase the malfunction information such as DTC not only for "ABS actuator and electric unit (control unit)" but also for ECM after TCS related repair.

DTC Logic (INFOID:000000011461724

DTC DETECTION LOGIC

NOTE:

- If DTC P1212 is displayed with DTC U1001, first perform the trouble diagnosis for DTC U1001. Refer to <u>EC-191</u>, "DTC Logic".
- If DTC P1212 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415</u>, "<u>DTC Logic"</u>.

Freeze frame data is not stored in the ECM for this self-diagnosis.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P1212	TCS/CIRC (TCS communication line)	ECM can not receive the information from "ABS actuator and electric unit (control unit)" continuously.	Harness or connectors (CAN communication line is open or shorted.) ABS actuator and electric unit (control unit) Dead (Weak) battery

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for at least 10 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-442, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461725

Perform the trouble diagnosis for TCS. Refer to <u>BRC-58</u>, "Work Flow".

If DTC P1212 is displayed with DTC UXXXX and/or P0607, perform the following trouble diagnosis.

- Trouble diagnosis for DTC UXXXX Refer to <u>EC-113</u>, "<u>DTC Index</u>".
- Trouble diagnosis for DTC P0607 Refer to <u>EC-415</u>, "<u>DTC Logic</u>".

P1217 ENGINE OVER TEMPERATURE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1217 ENGINE OVER TEMPERATURE

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P1217 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P1217 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415</u>, "<u>DTC Logic"</u>.

If the cooling fan or another component in the cooling system malfunctions, engine coolant temperature will rise.

When the engine coolant temperature reaches an abnormally high temperature condition, a malfunction is indicated.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1217	ENG OVER TEMP [Engine over tempera- ture (Overheat)]	 Cooling fan does not operate properly (Overheat). Cooling fan system does not operate properly (Overheat). Engine coolant was not added to the system using the proper filling method. Engine coolant is not within the specified range. 	Harness or connectors (Cooling fan circuit is open or shorted.) IPDM E/R Cooling fan control module Cooling fan motor Radiator hose Radiator Radiator cap Reservoir tank Water pump Thermostat Water control valve

CAUTION:

When a malfunction is indicated, be sure to replace the coolant. Refer to <u>CO-9, "Draining"</u>. Also, replace the engine oil. Refer to <u>CO-10, "Refilling"</u>.

- 1. Fill radiator with coolant up to specified level with a filling speed of 2 liters per minute. Be sure to use coolant with the proper mixture ratio. Refer to MA-13, "Anti-Freeze Coolant Mixture Ratio".
- 2. After refilling coolant, run engine to ensure that no water-flow noise is emitted.

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-443, "Component Function Check".

NOTE:

Use component function check to check the overall function of the cooling fan. During this check, a DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-444, "Diagnosis Procedure"</u>.

Component Function Check

1. PERFORM COMPONENT FUNCTION CHECK-I

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator.

Wrap a thick cloth around cap. Carefully remove the cap by turning it a quarter turn to allow built-up pressure to escape. Then turn the cap all the way off.

EC

Α

Е

D

F

G

Н

K

M

Ν

INFOID:0000000011461727

2015 JUKE

P1217 ENGINE OVER TEMPERATURE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

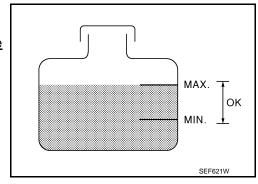
Check the coolant level in the reservoir tank and radiator.

Allow engine to cool before checking coolant level.

<u>Is the coolant level in the reservoir tank and/or radiator below the proper range?</u>

YES >> Proceed to EC-444, "Diagnosis Procedure".

NO >> GO TO 2.



2.PERFORM COMPONENT FUNCTION CHECK-II

Confirm whether customer filled the coolant or not.

Did customer fill the coolant?

YES >> Proceed to EC-444, "Diagnosis Procedure".

NO >> GO TO 3.

3.perform component function check-iii

(II) With CONSULT

- 1. Turn ignition switch ON.
- Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Check that cooling fan speed varies according to the percentage.

♥Without CONSULT

- 1. Activate IPDM E/R auto active test and check cooling fan motors operation. Refer to PCS-11, "Diagnosis Description".
- 2. Check that cooling fan operates.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-444, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461728

1. CHECK COOLING FAN OPERATION

(P)With CONSULT

- 1. Turn ignition switch ON.
- 2. Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Check that cooling fan speed varies according to the percentage.

®Without CONSULT

- Activate IPDM E/R auto active test and check cooling fan motors operation. Refer to <u>PCS-11</u>, "<u>Diagnosis</u> <u>Description</u>".
- Check that cooling fan operates.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to <u>EC-548</u>, "<u>Diagnosis Procedure</u>".

2. CHECK COOLING SYSTEM FOR LEAK-I

Check cooling system for leak. Refer to CO-9, "Inspection".

Is leakage detected?

YES >> GO TO 3. NO >> GO TO 4.

3.CHECK COOLING SYSTEM FOR LEAK-II

Check the following for leak.

- Hose (Refer to CO-9, "Inspection".)
- Radiator (Refer to <u>CO-13, "RADIATOR: Inspection"</u>.)
- Water pump (Refer to <u>CO-20, "Inspection"</u>.)

P1217 ENGINE OVER TEMPERATURE	
< DTC/CIRCUIT DIAGNOSIS > [MR FOR NISMO RS MO	DDELS]
>> Repair or replace malfunctioning part.	^
4.CHECK RADIATOR CAP	Α
Check radiator cap. Refer to CO-13, "RADIATOR CAP: Inspection".	
Is the inspection result normal?	EC
YES >> GO TO 5. NO >> Replace radiator cap. Refer to CO-15. "Exploded View".	
NO >> Replace radiator cap. Refer to <u>CO-15, "Exploded View"</u> . 5. CHECK THERMOSTAT	
Check thermostat. Refer to CO-23, "Inspection".	
Is the inspection result normal? YES >> GO TO 6.	D
NO >> Replace thermostat. Refer to CO-22, "Removal and Installation".	
6.check water control valve	_
Check water control valve. Refer to CO-25, "Inspection".	E
Is the inspection result normal?	
YES >> GO TO 7.	F
NO >> Replace water control valve. Refer to CO-24, "Exploded View".	
7. CHECK ENGINE COOLANT TEMPERATURE SENSOR	
Refer to EC-244, "Component Inspection".	G
Is the inspection result normal?	
YES >> GO TO 8.	Н
NO >> Replace engine coolant temperature sensor. Refer to <u>CO-24, "Exploded View"</u> .	
8. OVERHEATING CAUSE ANALYSIS	
If the cause cannot be isolated, check the <u>CO-7</u> , " <u>Troubleshooting Chart"</u> .	I
>> INSPECTION END	J
	K
	L
	M
	N
	14
	0

Ρ

P1225 TP SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1225	CTP LEARNING-B1 [Closed throttle position learning performance]	Closed throttle position learning value is excessively low.	Electric throttle control actuator (TP sensor 1 and 2)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-446, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461730

1. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

- 1. Turn ignition switch OFF.
- Remove the intake air duct. Refer to EM-27, "Exploded View".
- Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

YES >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

NO >> Remove the foreign matter and clean the electric throttle control actuator inside, then perform throttle valve closed position learning. Refer to EC-157, "Work Procedure".

P1226 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1226 TP SENSOR

DTC Logic INFOID:0000000011461731

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1226	CTP LEARNING-B1 (Closed throttle position learning performance)	Closed throttle position learning is not performed successfully, repeatedly.	Electric throttle control actuator (TP sensor 1 and 2)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- Turn ignition switch OFF, wait at least 10 seconds.
- Turn ignition switch ON.
- Repeat steps 2 and 3 for 32 times.
- Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-447, "Diagnosis Procedure". YES

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

- Turn ignition switch OFF.
- Remove the intake air duct. Refer to EM-27, "Exploded View".
- Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

YES >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

>> Remove the foreign matter and clean the electric throttle control actuator inside, then perform NO throttle valve closed position learning. Refer to EC-157, "Work Procedure".

Α

EC

D

Е

F

Н

K

INFOID:0000000011461732

M

Ν

P1423, P1424 COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1423, P1424 COLD START CONTROL

Description INFOID:000000011461733

ECM controls fuel injection timing and fuel injection quantity when engine is started with the engine cold. This control promotes the activation of three way catalyst by heating the catalyst and reduces emissions.

DTC Logic (INFOID:000000011461734

DTC DETECTION LOGIC

NOTE:

If DTC P1423 or P1424 is displayed with other DTC, first perform the trouble diagnosis for other DTC.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1423	COLD START CONTROL (Cold start emission reduction strategy monitoring)	ECM does not control fuel injection timing properly when engine is started with the engine cold.	ECM
P1424	COLD START CONTROL (Cold start emission reduction strategy monitoring)	ECM does not control fuel injection quantity properly when engine is started with the engine cold.	ECIVI

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

(P)WITH CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check that "COOLAN TEMP/S".
- If it is between 5°C (41°F) and 40°C (104°F) go to the following steps.
- If it is below 5°C (41°F) warm engine up to more than 5°C (41°F) and retry from step 1.
- If it is above 40°C (104°F) cool engine down to less than 40°C (104°F) and retry from step 1.
- 5. Start engine and let it idle for 5 minutes.
- 6. Check 1st trip DTC.

WITH GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-448, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461735

1.INSPECTION START

- 1. Turn ignition switch ON.
- Erase DTC.
- 3. Perform DTC confirmation procedure. Refer to EC-448, "DTC Logic".
- Check 1st trip DTC.

P1423, P1424 COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the 1st trip DTC P1423 or P1424 displayed again?

>> Replace ECM. Refer to EC-578, "Removal and Installation".

NO >> INSPECTION END

EC

Α

С

D

Е

F

G

Н

J

Κ

L

M

Ν

0

P1451 PRESSURE SENSOR

DTC Logic INFOID:000000011461736

DTC DETECTION LOGIC

NOTE:

If DTC P1451 is displayed with DTC P0452 or P0453, first perform the trouble diagnosis for DTC P0452 or P0453. Refer to <u>EC-376, "DTC Logic"</u> or <u>EC-379, "DTC Logic"</u>.

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1451	TC/SC PRES-EVAP PRES (EVAP control system pressure sensor/turbocharger boost sensor correlation)	ECM detects a state that the pressure difference remains –13.0 kPa (–98 mmHg, –3.83 inHg) or less/13.5 kPa (102 mmHg, 3.99 inHg) or more for continuously for 5 seconds or more under the condition that the pressure of the EVAP control system pressure sensor and that of the turbocharger boost sensor are equal.	 EVAP control system pressure sensor Turbocharger boost sensor Clogging, crushing, or damage in hose or piping

DTC CONFIRMATION PROCEDURE

NOTE:

Never refuel before and during the following procedure.

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start engine and warm it up to normal operating temperature
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start the engine. Wait at least for 15 seconds after the start of idle running.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-450, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461737

1. CHECK HOSE AND PIPING

- 1. Turn ignition switch OFF.
- Check the following.
- Blockage, crush, or damage in the hose and the piping of EVAP purge line between fuel tank and intake manifold.
- Blockage, crush, or damage in the hose and the piping of intake air passage between inlet air duct and intake manifold.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts

2.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check EVAP control system pressure sensor. Refer to <u>EC-451</u>, "Component Inspection (<u>EVAP Control System Pressure Sensor</u>)".

Is the inspection result normal?

P1451 PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 3.

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD: Exploded View".

3.CHECK TURBOCHARGER BOOST SENSOR

Check turbocharger boost sensor. Refer to EC-451, "Component Inspection (Turbocharger Boost Sensor)". Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor (with intake temperature sensor 2). Refer to EM-32, "Exploded View".

Component Inspection (EVAP Control System Pressure Sensor)

INFOID:0000000011461738

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

- Turn ignition switch OFF.
- Remove EVAP control system pressure sensor with its harness connector connected from EVAP canister. Always replace O-ring with a new one.
- 3. Install a vacuum pump to EVAP control system pressure sensor.
- 4. Turn ignition switch ON and check output voltage between ECM harness connector and ground under the following conditions.

ECM + -			Condition		
		_	Condition [Applied vacuum kPa (kg/cm ² , psi)]	Voltage	
Connector	Terr	minal	[rippiled vacadin in a (ingrem ; poly]		
F25	15	12	Not applied	0.5 - 4.6 V	
125	13	12	-26.7 (-0.272, -3.87)	2.1 to 2.5 V lower than above value	

CAUTION:

- · Always calibrate the vacuum pump gauge when using it.
- Do not apply below -93.3 kPa (-0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.033 kg/ cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD: Exploded View".

Component Inspection (Turbocharger Boost Sensor)

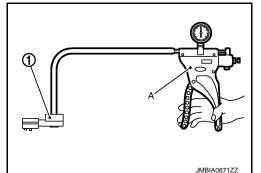
INFOID:0000000011461739

1. CHECK TURBOCHARGER BOOST SENSOR

- Turn ignition switch OFF.
- Remove turbocharger boost sensor with its harness connector.
- Install pressure pump (A) to turbocharger boost sensor (1).

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

- Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminals as per the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

EC

Α

D

K

M

N

P1451 PRESSURE SENSOR

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

ECM			O I'i' I'D W (D L i')	
Connector	+	I	Condition [Pressure (Relative to atmospheric pressure)]	Voltage (Approx.)
Connector	Terminal			, , ,
F25	F25 41 44		0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V
125	41	44	40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	2.67 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to EM-39, "Exploded View".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1550 BATTERY CURRENT SENSOR

DTC Logic

DTC DETECTION LOGIC

EC

Α

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1550	BAT CURRENT SENSOR (Battery current sensor circuit range/performance)	The output voltage of the battery current sensor remains within the specified range while engine is running.	Harness or connectors (Battery current sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted) (Fuel rail pressure sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) (Battery current sensor Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Fuel rail pressure sensor G sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait at least 10 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-453</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461741

M

Ν

Р

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- Disconnect battery current sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between battery current sensor harness connector and ground.

	+		Maltana	
Battery cur	rent sensor	-	Voltage (Approx.)	
Connector Terminal			, , ,	
F52	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

ECM		Sensor			
Connector	Terminal	Name	Connector	Terminal	
		FRP sensor	F5	1	
F25	39	EOP sensor	F43	3	
		Turbocharger boost sensor	F75	1	
68 F26		Battery current sensor	F52	1	
		G sensor	B32	3	
F20	72	CMP sensor	F109	1	
	12	EVT control position sensor	F110	1	
E18	118	APP sensor 2	E101	5	

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check battery current sensor ground circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between battery current sensor harness connector and ECM harness connector.

	+		_	
Battery cur	rent sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F52	3	F26	87	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+		_	
Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	4	F26	80	Existed

EC

D

Е

Α

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-455, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

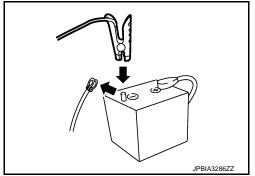
NO >> Replace battery negative cable assembly. Refer to PG-117, "Exploded View".

Component Inspection

INFOID:0000000011461742

1. CHECK BATTERY CURRENT SENSOR

- 1. Turn ignition switch OFF.
- Reconnect harness connectors disconnected.
- 3. Disconnect battery negative cable.
- 4. Install jumper cable between battery negative terminal and body ground.
- Turn ignition switch ON.
- Check the voltage between ECM harness connector and ground.



	ECM		
Connector	+	-	Voltage (Approx.)
Connector	Ter	minal	(- /
F26	80	87	2.5 V

Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly. Refer to PG-117, "Exploded View".

Ν

P1551, P1552 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1551, P1552 BATTERY CURRENT SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1551	BAT CURRENT SENSOR (Battery current sensor circuit low input)	An excessively low voltage from the sensor is sent to ECM.	Harness or connectors (Battery current sensor circuit is open or shorted.)
P1552	BAT CURRENT SENSOR (Battery current sensor circuit high input)	An excessively high voltage from the sensor is sent to ECM.	(Camshaft position sensor circuit is open or shorted) (Fuel rail pressure sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) Battery current sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Fuel rail pressure sensor G sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V with ignition switch ON

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 10 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-457, "Diagnosis Procedure".

NO >> INSPECTION END

P1551, P1552 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011461744

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect battery current sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between battery current sensor harness connector and ground.

	+		
Battery cur	rent sensor	-	Voltage (Approx.)
Connector Terminal			(11 - 7
F52	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

E	CM	Sensor	Sensor	
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1
	68	Battery current sensor	F52	1
F26	00	G sensor	B32	3
F20	72	CMP sensor	F109	1
12		EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check battery current sensor ground circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between battery current sensor harness connector and ECM harness connector.

	+		_	
Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	3	F26	87	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between battery current sensor harness connector and ECM harness connector.

EC

Α

Е

D

F

Н

K

L

1

IVI

Ν

Р

2015 JUKE

P1551, P1552 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

+			_	
Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	4	F26	80	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

${f 5.}$ CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-455, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

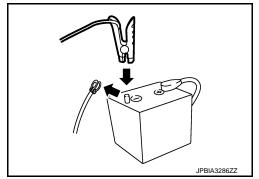
NO >> Replace battery negative cable assembly. Refer to PG-117, "Exploded View".

Component Inspection

INFOID:0000000011461745

1. CHECK BATTERY CURRENT SENSOR

- 1. Turn ignition switch OFF.
- Reconnect harness connectors disconnected.
- 3. Disconnect battery negative cable.
- 4. Install jumper cable between battery negative terminal and body ground.
- 5. Turn ignition switch ON.
- 6. Check the voltage between ECM harness connector and ground.



	ECM		
Connector	+	-	Voltage (Approx.)
Connector	Ter	minal	(11 - /
F26	80	87	2.5 V

Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly. Refer to PG-117, "Exploded View".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1553 BATTERY CURRENT SENSOR

DTC Logic INFOID:0000000011461746

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1553	BAT CURRENT SENSOR (Battery current sensor performance)	The signal voltage transmitted from the sensor to ECM is higher than the amount of the maximum power generation.	Harness or connectors (Battery current sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted) (Fuel rail pressure sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) (Battery current sensor Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Fuel rail pressure sensor G sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and wait at least 10 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-459, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

 ${f 1}$.CHECK BATTERY CURRENT SENSOR POWER SUPPLY

EC-459 Revision: 2014 October 2015 JUKE Α

M

Ν

Р

INFOID:0000000011461747

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- Disconnect battery current sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between battery current sensor harness connector and ground.

	+		Maltana
Battery cur	rent sensor	-	Voltage (Approx.)
Connector Terminal			()
F52	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

E	CM	Sensor	Sensor	
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1
	68	Battery current sensor	F52	1
F26	00	G sensor	B32	3
F20	72	CMP sensor	F109	1
	12	EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check battery current sensor ground circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between battery current sensor harness connector and ECM harness connector.

	+		_	
Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	3	F26	87	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

+			_	
Battery current sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	4	F26	80	Existed

EC

D

Е

Α

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5. CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-455, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

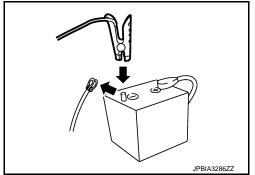
NO >> Replace battery negative cable assembly. Refer to PG-117, "Exploded View".

Component Inspection

INFOID:0000000011461748

1. CHECK BATTERY CURRENT SENSOR

- 1. Turn ignition switch OFF.
- 2. Reconnect harness connectors disconnected.
- 3. Disconnect battery negative cable.
- 4. Install jumper cable between battery negative terminal and body ground.
- Turn ignition switch ON.
- Check the voltage between ECM harness connector and ground.



	ECM		
Connector	+	-	Voltage (Approx.)
Connector	Ter	minal	(- /
F26	80	87	2.5 V

Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly. Refer to PG-117, "Exploded View".

N

DTC Logic INFOID:000000011461749

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1554	BAT CURRENT SENSOR (Battery current sensor performance)	The output voltage of the battery current sensor is lower than the specified value while the battery voltage is high enough.	Harness or connectors (Battery current sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted) (Fuel rail pressure sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) (Battery current sensor Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Fuel rail pressure sensor G sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Turbocharger boost sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-462, "Component Function Check".

NOTE:

Use component function check to check the overall function of the battery current sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-463</u>, "<u>Diagnosis Procedure</u>".

Component Function Check

INFOID:0000000011461750

1.PRECONDITIONING

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 12.8 V at idle.
- Before performing the following procedure, confirm that all load switches and A/C switch are turned OFF.

>> GO TO 2.

2. PERFORM COMPONENT FUNCTION CHECK

(I) With CONSULT

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Start engine and let it idle.
- Select "BAT CUR SEN" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "BAT CUR SEN" indication for 10 seconds.

"BAT CUR SEN" should be above 2,300 mV at least once.

- 1. Start engine and let it idle.
- 2. Check the voltage between ECM harness connector and ground.

	ECM		
Connector	+	-	Voltage
Connector	Terminal		
F26	80	87	Above 2.3 V at least once

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-463, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect battery current sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between battery current sensor harness connector and ground.

	+		Maltana
Battery cur	rent sensor	-	Voltage (Approx.)
Connector Terminal			(- /
F52	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

E	СМ	Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1
68		Battery current sensor	F52	1
F26	00	G sensor	B32	3
Γ20	72	CMP sensor	F109	1
		EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3. CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT

EC

Α

D

Е

Н

K

INFOID:0000000011461751

0

Ν

Р

Revision: 2014 October EC-463 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between battery current sensor harness connector and ECM harness connector.

+			_	
Battery cur	rent sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F52	3	F26	87	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4.CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

+				
Battery cur	rent sensor	ensor ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	4	F26	80	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5. CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-455, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

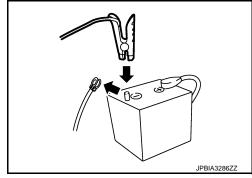
NO >> Replace battery negative cable assembly. Refer to PG-117, "Exploded View".

Component Inspection

INFOID:0000000011461752

1. CHECK BATTERY CURRENT SENSOR

- 1. Turn ignition switch OFF.
- 2. Reconnect harness connectors disconnected.
- Disconnect battery negative cable.
- 4. Install jumper cable between battery negative terminal and body ground.
- 5. Turn ignition switch ON.
- 6. Check the voltage between ECM harness connector and ground.



< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

ECM					
Connector	+	-	Voltage (Approx.)		
Connector	Tei	rminal	(11 - /		
F26	80	87	2.5 V		

Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly. Refer to PG-117, "Exploded View". EC

Α

D

Е

F

Н

Κ

M

Ν

P1556, P1557 BATTERY TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1556, P1557 BATTERY TEMPERATURE SENSOR

DTC Logic INFOID:0000000011461753

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1556	BAT TMP SEN/CIRC (Battery temperature sensor circuit low input)	Signal voltage from Battery temperature sensor remains 0.16V or less for 5 seconds or more.	Harness or connectors [Battery current sensor (Battery temperature sensor) circuit is shorted.]
P1557	BAT TMP SEN/CIRC (Battery temperature sensor circuit high input)	Signal voltage from Battery temperature sensor remains 4.84V or more for 5 seconds or more.	Battery current sensor (Battery temperature sensor)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 10 V or more at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine and let it idle at least 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-466, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

INFOID:0000000011461754

1. CHECK BATTERY TEMPERATURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect battery current sensor harness connector.
- Turn ignition switch ON.
- Check the voltage between battery current sensor harness connector and ground.

	+		V 16	
Battery cui	rent sensor	_	Voltage (Approx.)	
Connector	Terminal		(11, -)	
F52	2	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK BATTERY TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between battery current sensor harness connector and ECM harness connector.

P1556, P1557 BATTERY TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Battery curr		EC	- `N/	Continuity	
Connector	Terminal	Connector	Terminal	Continuity	
F52	2	F26	79	Existed	
		for short to g		ZAIOTOG	
Is the inspec		_	ground.		
			nosis for po	wer supply ci	ıit.
NO >> I	Repair or rep	olace error-d	letected par	rts.	
3.check b	SATTERY TE	EMPERATU	RE SENSO	R GROUND	CUIT
	ition switch (
		rness conne		ut aanaar harn	a connector and ECM harness connector
Check th	ie continuity	between ba	illery curren	it sensor nam	s connector and ECM harness connector.
+	-	-	_		
Battery curi	rent sensor	EC	CM	Continuity	
Connector	Terminal	Connector	Terminal		
F52	3	F26	87	Existed	
4. Also che	ck harness	for short to p	ower.		
Is the inspec		•			
	GO TO 4.				
4		olace error-d	=		
4. CHECK B	SATTERY TE	EMPERATU	RE SENSO	R	
			or.Refer to !	EC-467, "Cor	onent Inspection".
Is the inspec					
					tent Incident". PG-117, "Exploded View".
	·	, ,	cable asse	onibly. IXelel (O-117, Exploded view.
Compone	nt inspec	lion			INFOID:000000011461755
1.CHECK B	SATTERY TE	EMPERATUI	RE SENSO	R	
1. Turn ian	ition switch	OFF.			
2. Disconn	ect battery o	urrent senso			
Check th	ne resistance	e between b	attery curre	nt sensor cor	ctor terminals.
D. #					<u></u>
	rrent sensor		Resis	tonoo	
+ 	minal		Resis	lance	
2	3	Continuity	ith the register	200 valuo 100 O	———
			iui uie resistar	nce value 100 Ω	
Is the inspec	ition result n INSPECTIO				
			e cable asse	embly. Refer t	PG-117, "Exploded View".
	,	, 5		,	

[MR FOR NISMO RS MODELS]

P1564 ASCD STEERING SWITCH

DTC Logic INFOID:000000011461756

DTC DETECTION LOGIC

NOTE

If DTC P1564 is displayed with DTC P0603, P0604, P0605, P0606, P0607, P060A and P060B first perform the trouble diagnosis for DTC P0603, P0604, P0605, P0606, P0607, P060A and P060B. Refer to EC-113, "DTC Index".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1564	ASCD SW (ASCD steering switch)	 An excessively high voltage signal from the ASCD steering switch is sent to ECM. ECM detects that input signal from the ASCD steering switch is out of the specified range. ECM detects that the ASCD steering switch is stuck ON. 	Harness or connectors (ASCD steering switch circuit is open or shorted.) ASCD steering switch ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Turn ignition switch ON.
- 2. Wait at least 10 seconds.
- 3. Press MAIN switch for at least 10 seconds, then release it and wait at least 10 seconds.
- 4. Press CANCEL switch for at least 10 seconds, then release it and wait at least 10 seconds.
- 5. Press ACCEL/RES switch for at least 10 seconds, then release it and wait at least 10 seconds.
- 6. Press COAST/SET switch for at least 10 seconds, then release it and wait at least 10 seconds.
- 7. Check DTC.

Is DTC detected?

YES >> Proceed to EC-468, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461757

1. CHECK ASCD STEERING SWITCH CIRCUIT

(II) With CONSULT

- 1. Turn ignition switch ON.
- Select "CANCEL SW", "RESUME/ACC SW" and "SET SW" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check each item indication as per the following conditions.

Monitor item	Condition	Indication	
MAIN SW	MAIN switch	Pressed	ON
	WAIN SWILCH	Released	OFF
CANCEL SW	CANCEL switch	Pressed	ON
CANCLE 3W	CANCLE SWILCH	Released	OFF

P1564 ASCD STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Monitor item	Condition	Indication	
RESUME/ACC	ACCEL/RES switch	Pressed	ON
SW	ACCEL/RES SWILCH	Released	OFF
SET SW	COAST/SET switch	Pressed	ON
OL I OVV	OOAGI/GET SWILCH	Released	OFF

Α

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector terminals.

ECM				Voltogo	
Connector	+ -		Condition	Voltage (Approx.)	
Connector	Terr	minal		(
E18	110		MAIN switch: Pressed	0 V	
		110 111	CANCEL switch: Pressed	1 V	
			COAST/SET switch: Pressed	2 V	
			ACCEL/RES switch: Pressed	3 V	
			All ASCD steering switches: Released	4 V	

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 2.

2.check ascd steering switch ground circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Disconnect combination switch (spiral cable) harness connector.
- 4. Check the continuity between combination switch (spiral cable) and ECM harness connector.

	+			
Combination switch (Spiral cable)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
M33	32	E18	Existed	

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK ASCD STEERING SWITCH INPUT SIGNAL CIRCUIT

1. Check the continuity between ECM harness connector and combination switch.

+					
		tion switch I cable)	ECM		Continuity
	Connector	Terminal	Connector	Terminal	
	M33	25	E18	110	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

EC

D

Е

G

Н

J

K

IV

Ν

P1564 ASCD STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

4. CHECK ASCD STEERING SWITCH

Refer to EC-470, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace ASCD steering switch. Refer to ST-9, "Exploded View".

Component Inspection

INFOID:0000000011461758

1. CHECK ASCD STEERING SWITCH

- 1. Disconnect combination switch (spiral cable) harness connector.
- 2. Check the resistance between combination switch harness connector terminals as per the following conditions.

Combination switch (Spiral cable)				Resistance	
Connector + Terr		_	Condition	(Approx.)	
		ninals			
			MAIN switch: Pressed	0 Ω	
	13	13 16	CANCEL switch: Pressed	250 Ω	
M302			COAST/SET switch: Pressed	660 Ω	
			ACCEL/RES switch: Pressed	1,480 Ω	
			All ASCD steering switches: Released	4,000 Ω	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ASCD steering switch. Refer to ST-9, "Exploded View".

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1572 BRAKE PEDAL POSITION SWITCH

DTC Logic INFOID:0000000011461759

DTC DETECTION LOGIC

- If DTC P1572 is displayed with DTC P0603, P0604, P0605, P0606, P0607, P060A and P060B, first perform the trouble diagnosis for DTC P0603, P0604, P0605, P0606, P0607, P060A and P060B. Refer to EC-113, "DTC Index".
- This self-diagnosis has the one trip detection logic. When malfunction A is detected, DTC is not stored in ECM memory. And in that case, 1st trip DTC and 1st trip freeze frame data are displayed. 1st trip DTC is erased when ignition switch OFF. And even when malfunction A is detected in two consecutive trips, DTC is not stored in ECM memory.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		DTC detecting condition	Possible cause
	ASCD BRAKE SW	A)	When the vehicle speed is above 30 km/h (19 MPH), ON signals from the stop lamp switch and the brake pedal position switch are sent to the ECM at the same time.	Harness or connectors (Stop lamp switch circuit is shorted.) (Brake pedal position switch circuit is shorted.) Stop lamp switch
P1572 (ASCD brake switch)	`	В)	Brake pedal position switch signal is not sent to ECM for extremely long time while the vehicle is driving.	 Brake pedal position switch Incorrect stop lamp switch installation Incorrect brake pedal position switch installation ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

Procedure for malfunction B is not described here. It takes extremely long time to complete procedure for malfunction B. By performing procedure for malfunction A, the incident that causes malfunction B can be detected.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

- Start engine.
- Press MAIN switch and make sure that CRUISE indicator is displayed in combination meter.
- 3. Drive the vehicle for at least 5 consecutive seconds as per the following conditions. **CAUTION:**

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

Vehicle speed	More than 30 km/h (19 mph)		
Selector lever	Suitable position		

Check DTC.

Is DTC detected?

YES >> Proceed to EC-476, "Diagnosis Procedure".

NO >> GO TO 3.

EC-471 Revision: 2014 October 2015 JUKE

EC

Α

Е

D

Н

K

L

M

N

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

3.perform dtc confirmation procedure for malfunction b

1. Drive the vehicle for at least 5 consecutive seconds as per the following conditions.

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

Vehicle speed	More than 30 km/h (19 mph)
Selector lever	Suitable position
Driving location	Depress the brake pedal for more than five seconds so as not to come off from the above-mentioned vehicle speed.

2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-476, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461760

1. CHECK OVERALL FUNCTION-I

(P)With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "BRAKE SW1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "BRAKE SW1" indication as per the following conditions.

Monitor item	C	Condition	Indication
BRAKE SW1	Brake pedal	Slightly depressed	OFF
DIVARLE SWI	Diake pedai	Fully released	ON

Without CONSULT

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector terminals as per the following.

ECM						
Connector +		_	C	Voltage (Approx.)		
Connector	Terminal					
E18	116	127	Brake pedal	Slightly depressed	0 V	
	110		brake pedar	Fully released	Battery voltage	

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK OVERALL FUNCTION-II

(P)With CONSULT

Select "BRAKE SW2" and check indication as per the following conditions.

Monitor item	C	Condition	Indication	
BRAKE SW2	Brake pedal	Slightly depressed	ON	
DIVAIL OWE	Brake pedar	Fully released	OFF	

⋈Without CONSULT

Check the voltage between ECM harness connector terminals as per the following conditions.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Р

	ECM					V 16	•
Connector	+	_		C	Condition	Voltage (Approx.)	_
	Tern	ninal				, , ,	
E18	115	127	Brake	nedal	Slightly depressed	Battery voltage	_
	110	127	Brano	poddi	Fully released	0 V	_
Is the inspe	ection resu	lt normal	?				•
NO >>	GO TO 6	-			er to <u>GI-44, "Interm</u>		
3.CHECK	BRAKE P	EDAL PO	OSITIO	N SWI	TCH POWER SUP	PLY	
 Discon Turn ig 	nition swite	e pedal po ch ON.			harness connector		and ground.
	+						
Brake pe	edal position	switch	_		Voltage		
Connecto	or Te	erminal					
E112		1	Groui	nd	Battery voltage		
Is the inspe	ection resu	lt normal	?				
	GO TO 4						
4			_		or power supply circ		
4.CHECK	BRAKE P	EDAL PO	OSITIO	N SWI	TCH INPUT SIGNA	AL CIRCUIT	
	nition swite						
	nect ECM				dal position switch	harness connect	tor and ECM harness connec-
tor.	tilo comini	aity botti	0011 010	and po	dai pooliion owiion		or and Low harrioss connec
	+		-				
Brake pedal	position swit	tch	ECI	М	Continuity		
Connector	Termina	al Conr	nector	Termi	inal		
E112	2	E	18	116	6 Existed		
4. Also ch	neck harne	ss for sh	ort to gi	round	and to power.		
Is the inspe	ection resu	<u>lt normal</u>	<u>?</u>				
	• GO TO 5			. 4 4	J		
_	Repair or	•			•		
5.CHECK							
Check the Switch)"	brake pe	dal positi	ion swi	tch. R	efer to <u>EC-559, "</u>	Component Insp	ection (Brake Pedal Position
Is the inspe	ection resu	lt normal	?				

YES >> Check intermittent incident. Refer to GI-44. "Intermittent Incident".

NO >> Replace brake pedal position switch. Refer to <u>BR-20, "Exploded View"</u>.

6. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect stop lamp switch harness connector.
- 3. Check the voltage between stop lamp switch harness connector and ground.

+ Stop lamp switch		_	Voltage	
Connector	Terminal			
E102 ^{*1} E118 ^{*2}	1	Ground	Battery voltage	

^{*1:} CVT models

Is the inspection result normal?

YES >> GO TO 7.

NO >> Perform the trouble diagnosis for power supply circuit.

7.CHECK STOP LAMP SWITCH INPUT SIGNAL CIRCUIT

- Disconnect ECM harness connector.
- Check the continuity between stop lamp switch harness connector and ECM harness connector.

+		-	_	
Stop lam	Stop lamp switch		ECM	
Connector	Terminal	Connector	Terminal	
E102 ^{*1} E118 ^{*2}	2	E18	115	Existed

^{*1:} CVT models

3. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

8. CHECK STOP LAMP SWITCH

Check the stop lamp switch. Refer to EC-475, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace stop lamp switch. Refer to <u>BR-20</u>, "Exploded View".

Component Inspection (Brake Pedal Position Switch)

INFOID:0000000011461761

1. CHECK BRAKE PEDAL POSITION SWITCH-I

- Turn ignition switch OFF.
- Disconnect brake pedal position harness connector.
- 3. Check the continuity between brake pedal position switch terminals as per the following conditions.

Brake pedal p	position switch	Condition		
+	_			Continuity
Tern	ninals			
			Fully released	Existed
1	2	Brake pedal	Slightly de- pressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK BRAKE PEDAL POSITION SWITCH-II

^{*2:} M/T models

^{*2:} M/T models

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Adjust brake pedal position switch installation. Refer to BR-9, "Inspection and Adjustment".
- Check the continuity between brake pedal position switch terminals as per the following conditions.

Brake pedal position switch				
+	_	Condition		Continuity
Term	ninals			
			Fully released	Existed
1	2	Brake pedal	Slightly de- pressed	Not existed

EC

Α

D

Е

Н

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace brake pedal position switch. Refer to BR-20, "Exploded View".

Component Inspection (Stop Lamp Switch)

INFOID:0000000011461762

1. CHECK STOP LAMP SWITCH-I

- Turn ignition switch OFF.
- 2. Disconnect stop lamp switch harness connector.
- Check the continuity between stop lamp switch terminals as per the following conditions.

Stop lan	np switch			
+	_	Condition		Continuity
Tern	ninals			
			Fully released	Not existed
1	2	Brake pedal	Slightly de- pressed	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH-II

- Adjust stop lamp switch installation. Refer to BR-9, "Inspection and Adjustment".
- Check the continuity between stop lamp switch terminals as per the following conditions.

Stop lan	np switch			
+	_	Condition		Continuity
Tern	ninals			
			Fully released	Not existed
1	2	Brake pedal	Slightly de- pressed	Existed

Ν

Is the inspection result normal?

YES >> INSPECTION END

>> Replace stop lamp switch. Refer to BR-20, "Exploded View". NO

P1574 ASCD VEHICLE SPEED SENSOR

Description INFOID:000000011461763

The ECM receives two vehicle speed sensor signals via CAN communication line. One is sent from combination meter, and the other is from TCM (Transmission control module). The ECM uses these signals for ASCD control. Refer to EC-67, "AUTOMATIC SPEED CONTROL DEVICE (ASCD): System Description" for ASCD functions.

DTC Logic INFOID:000000011461764

DTC DETECTION LOGIC

NOTE:

- If DTC P1574 is displayed with DTC U1001, first perform the trouble diagnosis for DTC U1001. Refer to <u>EC-191, "DTC Logic"</u>.
- If DTC P1574 is displayed with DTC P0500, first perform the trouble diagnosis for DTC P0500. Refer to EC-393, "EXCEPT FOR M/T MODELS: DTC Logic"
- If DTC P1574 is displayed with DTC DTC P0603, P0604, P0605, P0606, P0607, P060A and P060B, first perform the trouble diagnosis for DTC DTC P0603, P0604, P0605, P0606, P0607, P060A and P060B. Refer to <u>EC-113</u>, "<u>DTC Index</u>".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1574	ASCD VHL SPD SEN (ASCD vehicle speed sensor)	ECM detects a difference between two vehicle speed signals is out of the specified range.	Harness or connectors (CAN communication line is open or shorted.) ABS actuator and electric unit (control unit) TCM ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine.
- 2. Drive the vehicle at more than 40 km/h (25 MPH).

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

3. Check DTC.

Is DTC detected?

YES >> Proceed to <u>EC-476</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461765

1. CHECK DTC WITH TCM

Check DTC with TCM. Refer to TM-188, "CONSULT Function".

Is DTC detected?

Revision: 2014 October EC-476 2015 JUKE

P1574 ASCD VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> GO TO 2.

YES >> Perform trouble shooting relevant to DTC indicated.

 $2.\mathsf{CHECK}$ DTC WITH "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)"

Check DTC with ABS actuator and electric unit (control unit). Refer to <u>BRC-39</u>, "CONSULT Function".

Is DTC detected?

NO >> INSPECTION END

YES >> Perform trouble shooting relevant to DTC indicated.

EC

Α

D

C

Е

F

Н

J

K

L

M

Ν

 \bigcirc

P158A G SENSOR

DTC Logic

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause*
P158A	G SENSOR (G sensor calibration is incomplete)	ECM detects a state that calibration of the G sensor is incomplete.	G sensor calibration is incomplete

^{*:} Since this DTC is detected when G sensor calibration is incomplete, there is not replacement parts.

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-478, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461767

1. PERFORM CALIBRATION OF G SENSOR

Perform calibration of G sensor. Refer to EC-160, "Work Procedure".

>> INSPECTION END

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P159A	G SENSOR (G sensor circuit)	When ECM detects the following status: A voltage signal transmitted from the G sensor is less than 0.5 V or more than 5.02 V continuously for 5 seconds or more.	Harness or connectors (G sensor circuit is open or shorted.) (Intake air temperature sensor 2 circuit is open or shorted.)
P159C	G SENSOR (G sensor circuit low input)	When ECM detects the following status: A voltage signal transmitted from the G sensor is less than 0.5 V continuously for 5 seconds or more.	(Turbocharger boost sensor circuit is open or shorted.) (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open
P159D	G SENSOR (G sensor circuit high input)	When ECM detects the following status: A voltage signal transmitted from the G sensor is more than 4.5 V continuously for 5 seconds or more.	or shorted.) (Crankshaft position sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) G sensor Intake air temperature sensor 2 Turbocharger boost sensor Fuel rail pressure sensor Battery current sensor Crankshaft position sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-479, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK G SENSOR POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.

K

Α

EC

. .

M

1.0

Ν

Р

INFOID:0000000011461769

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- 2. Disconnect G sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between G sensor harness connector terminals.

Connector	+	_	Voltage (Approx.)
Connector	Terminal		
B32	3	2	5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2. CHECK G SENSOR SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between G sensor harness connector and ECM harness connector.

	+		_	
G se	ensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
B32	1	F26	83	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. CHECK G SENSOR

Check G sensor. Refer to EC-481, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> 1. Replace G sensor.

2. Perform calibration of G sensor. Refer to EC-160, "Work Procedure".

4. CHECK G SENSOR POWER SUPPLY CIRCUIT-II

Check the voltage between G sensor harness connector terminal and ground.

+			Vales -	
G sensor		_	Voltage (Approx.)	
Connector Terminal			, , ,	
B32	3	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 7.

CHECK G SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between G sensor harness connector and ECM harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+	_		
G se	ensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
B32	3	F26	87	Existed

EC

Α

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6. CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

ECM		Ground	Continuity	
Connector	Terminal	Ground	Continuity	
F25	1			
F23	2			
E18	123	Ground	Existed	
	124			
	127			

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

7. CHECK SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connectors and each sensor harness connectors
- 3. Check harness connector for short to power and short to ground, between the following terminals.

EC	CM	Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
	Turbocharger boost sensor	F75	1	
68	Battery current sensor	F52	1	
F26	00	G sensor	B32	3
	72	CMP sensor	F109	1
12		EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

Component Inspection

1. CHECK G SENSOR

(P)With CONSULT

- 1. Remove G sensor.
- 2. Reconnect all harness connectors disconnected.
- 3. Place the G sensor on a flat table.
- Turn ignition switch ON.

D

_

Е

G

Κ

L

. .

Ν

Ρ

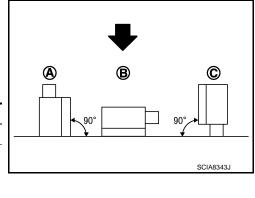
INFOID:0000000011461770

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Select "G SENSOR" in "DATA MONITOR" mode of "ENGINE" using CONSULT to check indications according to the following conditions:
 - : Direction of gravitational force

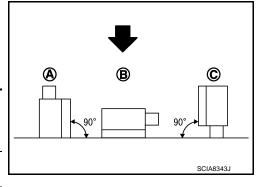
Monitor item	Condition	Value (V)
	Parallel with the table (0G) (B)	2.18 – 2.82
G SENSOR	Vertical to the table (–1G) (A) ↓	0.85 − 1.49* ↓
G SLNSOK	Parallel with the table (0G) (B) ↓	2.18 – 2.82* ↓
	Vertical to the table (1G) (C)	3.51 – 4.15*



*: Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

- 1. Remove G sensor.
- 2. Reconnect all harness connectors disconnected.
- 3. Place the G sensor on a flat table.
- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminal and ground.
 - : Direction of gravitational force

+ ECM Connector Terminal		_	Condition	Voltage (V)
Connector	Terriniai			
			Parallel with the table (0G) (B)	2.18 – 2.82
F26	83	Ground	Vertical to the table (-1G) (A) ↓ Parallel with the table (0G) (B) ↓ Vertical to the table (1G) (C)	0.85 - 1.49* ↓ 2.18 - 2.82* ↓ 3.51 - 4.15*



*: Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

Is the inspection result normal?

YES >> INSPECTION END NO >> Replace G sensor.

[MR FOR NISMO RS MODELS]

Α

EC

M

Ν

Р

P159B G SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P159B	G SENSOR (G sensor circuit range/perfor- mance)	Every time when the vehicle is stopped, ECM detects the following status 13 times in a row: A voltage signal transmitted from the G sensor is less than 2.275V or more than 2.725 V continuously for 5 seconds or more.	Harness or connectors (G sensor circuit is open or shorted.) (Intake air temperature sensor 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (Crankshaft position sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Accelerator pedal position sensor 2 circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) (B sensor Intake air temperature sensor 2 Turbocharger boost sensor Fuel rail pressure sensor Eattery current sensor Crankshaft position sensor Exhaust valve timing control position sensor Accelerator pedal position sensor 2 Engine oil pressure sensor G sensor fitting condition

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start engine.
- 2. Drive the vehicle for at least 5 seconds at 35 km/h (22 MPH) or more.
- 3. Stop the vehicle and let it idle for at least 5 seconds.

NOTE:

- Depress the brake pedal to bring the vehicle to a full stop.
- Never depress the accelerator pedal while the vehicle is stopped.
- 4. Repeat Step 2 and Step 3 thirteen times.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-484, "Diagnosis Procedure".

Revision: 2014 October EC-483 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461772

1.PERFORM CALIBRATION OF G SENSOR

Perform calibration of G sensor. Refer to EC-160, "Work Procedure".

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure. Refer to EC-483, "DTC Logic".

Is 1st trip DTC detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.check g sensor fitting condition

Check G sensor fitting condition.

Is the inspection result normal?

YES >> GO TO 4.

NO >> 1. Adiu:

>> 1. Adjust parts fitting condition.

2. Perform calibration of G sensor. Refer to EC-160, "Work Procedure".

4. CHECK G SENSOR POWER SUPPLY CIRCUIT-I

- 1. Turn ignition switch OFF.
- 2. Disconnect G sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between G sensor harness connector terminals.

Connector	+	_	Voltage (Approx.)
Connector	, , ,		
B32	3	2	5 V

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 7.

5.CHECK G SENSOR SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between G sensor harness connector and ECM harness connector.

G se	G sensor		ECM		
Connector	Terminal	Connector Terminal		Continuity	
B32	1	F26	83	Existed	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK G SENSOR

Check G sensor. Refer to EC-486, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> 1. Replace G sensor.

P159B G SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

D

Е

Ν

Р

2. Perform calibration of G sensor. Refer to EC-160, "Work Procedure".

7.CHECK G SENSOR POWER SUPPLY CIRCUIT-II

Check the voltage between G sensor harness connector terminal and ground.

	+		Valtana	
G sensor Connector Terminal		_	Voltage (Approx.)	
			, , ,	
B32	3	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 10.

8. CHECK G SENSOR GROUND CIRCUIT

1. Turn ignition switch OFF.

- 2. Disconnect ECM harness connector.
- 3. Check the continuity between G sensor harness connector and ECM harness connector.

G se	G sensor		ECM	
Connector	Terminal	Connector Terminal		Continuity
B32	2	F26	87	Existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

9. CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

ECM		Ground	Continuity	
Connector	Terminal	Glound	Continuity	
F25	1			
F25	2		Existed	
E18	123	Ground		
	124			
	127			

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

10. CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connectors and each sensor harness connectors
- 3. Check harness connector for short to power and short to ground, between the following terminals.

EC	CM	Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1

< DTC/CIRCUIT DIAGNOSIS >

ECM		Sensor				
Connector	Terminal	Name	Name Connector			
	68	Battery current sensor	F52	1		
F26	00	G sensor	B32	3		
	72	CMP sensor	F109	1		
	12	EVT control position sensor	F110	1		
E18	118 APP sensor 2		E101	5		

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

Component Inspection

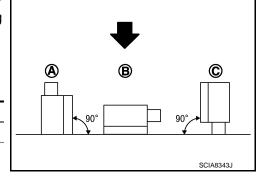
INFOID:0000000011461773

1. CHECK G SENSOR

(P)With CONSULT

- 1. Remove G sensor.
- 2. Reconnect all harness connectors disconnected.
- 3. Place the G sensor on a flat table.
- 4. Turn ignition switch ON.
- 5. Select "G SENSOR" in "DATA MONITOR" mode of "ENGINE" using CONSULT to check indications according to the following conditions:
 - : Direction of gravitational force

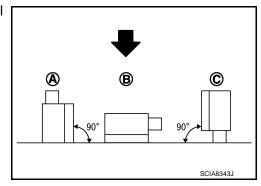
Monitor item	Condition	Value (V)
	Parallel with the table (0G) (B)	2.18 – 2.82
	Vertical to the table (–1G) (A)	0.85 – 1.49*
G SENSOR	↓ ↓ ↓	↓ · · · · · · · · · · · · · · · · · · ·
	Parallel with the table (0G) (B)	2.18 – 2.82*
	Vertical to the table (1G) (C)	3.51 – 4.15*



^{*:} Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

Without CONSULT

- Remove G sensor.
- Reconnect all harness connectors disconnected.
- 3. Place the G sensor on a flat table.
- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminal and ground.
 - : Direction of gravitational force



	+ CM Terminal	_	Condition	Voltage (V)
			Parallel with the table (0G) (B)	2.18 – 2.82
F26	83	Ground	Vertical to the table (-1G) (A) ↓ Parallel with the table (0G) (B) ↓ Vertical to the table (1G) (C)	0.85 - 1.49* ↓ 2.18 - 2.82* ↓ 3.51 - 4.15*

^{*:} Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

Is the inspection result normal?

YES >> INSPECTION END NO >> Replace G sensor.

EC

Α

Е

D

F

G

Н

K

L

M

Ν

0

P1650 STARTER MOTOR RELAY 2

Description INFOID:000000011461774

ECM controls ON/OFF state of the starter relay, according to the engine and vehicle condition. On the other hand, models with the Intelligent Key System transmit a control signal to IPDM E/R by way of BCM via CAN communication.

Under normal conditions, ECM controls and maintains the starter relay in OFF state during engine running or "D" position.

When detecting a decrease in engine speed due to rapid deceleration or heavy load condition, ECM controls and reactivates the starter relay.

IPDM E/R detects a control state of starter relay and starter control relay and transmits a feedback signal to ECM via CAN communication.

DTC Logic INFOID:0000000011461775

DTC DETECTION LOGIC

NOTE:

- If DTC P1650 is displayed with DTC U1001, perform the trouble diagnosis for DTC U1001. Refer to <u>EC-191</u>, "DTC Logic".
- If DTC P1650 is displayed with DTC P0607, perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415.</u> <u>"DTC Logic"</u>.
- If DTC P1650 is displayed with B209F or B20A0 of IPDM E/R, perform the trouble diagnosis for B209F or B20A0. Refer to <u>SEC-101, "DTC Logic"</u> or <u>SEC-103, "DTC Logic"</u>.
- If DTC P1650 is displayed with B26F9 or B26FA of BCM, perform the trouble diagnosis for B209F or B20A0. Refer to SEC-95, "DTC Logic" or SEC-97, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition		Possible cause
		А	Starter relay is stuck ON.	Harness and connectors (Between IPDM E/R harness connector and ECM harness connector is shorted to ground.) (Between IPDM E/R harness connector and BCM harness connector is shorted to ground.) IPDM E/R
P1650	STR MTR RELAY 2 (Starter relay circuit)	В	Starter relay power supply circuit is excessively high voltage.	Harness and connectors (Between IPDM E/R harness connector and ECM harness is open or shorted to power.) (Between IPDM E/R harness connector and BCM harness is open or shorted to power.) (Between IPDM E/R harness connector and battery is open.) IPDM E/R
		С	Starter relay circuit is excessively low voltage	Harness and connectors (Starter relay circuit is open or shorted.) IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

Before performing the following procedure, confirm that battery voltage is 12 V or more with ignition switch ON.

>> GO TO 2.

P1650 STARTER MOTOR RELAY 2

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

12.0/0110011 21110110010	
2.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A AND C	А
 Turn ignition switch OFF and wait at least 10 seconds. Turn ignition switch ON. 	
 Turn ignition switch OFF and wait at least 10 seconds. Check 1st trip DTC. 	EC
Is 1st trip DTC detected?	
YES >> Proceed to EC-489, "Diagnosis Procedure".	С
NO >> GO TO 3.	
3.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B	
(a) With CONSULT CAUTION:	D
Always drive at a safe speed.	
1. Start the engine.	Е
 Turn ignition switch OFF and wait at least 10 seconds. Turn ignition switch ON. 	
4. Start the engine and warm it up to normal operating temperature.	F
5. Turn ignition switch OFF.6. Lift up drive wheels.	Г
7. Turn ignition switch ON.	
8. Select "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.	G
 Restart the engine and let it idle at least 10 seconds. Shift the selector lever to D position while depressing fully the brake pedal. 	
11. Select 1 - 4 cylinders in "POWER BALANCE" and cut the fuel of all cylinders.	Н
12. Check 1st trip DTC.	
CAUTION:	
Always drive at a safe speed.	
 Start the engine. Turn ignition switch OFF and wait at least 10 seconds. 	
3. Turn ignition switch ON.	J
4. Start the engine and warm it up to normal operating temperature.5. Turn ignition switch OFF.	
6. Lift up drive wheels.	
7. Restart the engine and let it idle at least 10 seconds.	K
 Shift the selector lever to D position while depressing fully the brake pedal. Remove vacuum hoses from intake manifold. 	
10. Check 1st trip DTC.	L
Is 1st trip DTC detected?	
YES >> Proceed to <u>EC-489, "Diagnosis Procedure"</u> .	
NO >> INSPECTION END	M
Diagnosis Procedure	
1. CHECK STARTER RELAY POWER SUPPLY CIRCUIT	Ν
Check the starter motor relay power supply circuit. Refer to PCS-35, "Diagnosis Procedure".	
Is the inspection result normal?	0
YES >> GO TO 2. NO >> Repair or replace error-detected parts.	
2. CHECK STARTER RELAY CONTROL SIGNAL CIRCUIT	Б
	Р
 Turn ignition switch OFF. Disconnect IPDM E/R harness connector. 	

- 3. Disconnect BCM harness connector.
- 4. Check the continuity between IPDM E/R harness connector and BCM harness connector.

EC-489 Revision: 2014 October 2015 JUKE

P1650 STARTER MOTOR RELAY 2

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

+				
IPDM E/R		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E13	30	M70	97	Existed

5. Also check harness for short to ground to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to <u>PCS-36, "Removal and Installation"</u>.

NO >> Repair or replace error-detected parts.

P1651 STARTER MOTOR RELAY

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1651 STARTER MOTOR RELAY

Description INFOID:0000000011461777

ECM controls ON/OFF state of the starter relay, according to the engine and vehicle condition. On the other hand, models with the Intelligent Key System transmit a control signal to IPDM E/R by way of BCM via CAN communication.

Under normal conditions, ECM controls and maintains the starter relay in OFF state during engine running or "D" position.

When detecting a decrease in engine speed due to rapid deceleration or heavy load condition, ECM controls and reactivates the starter relay.

IPDM E/R detects a control state of starter relay and starter control relay and transmits a feedback signal to ECM via CAN communication.

DTC Logic INFOID:0000000011461778

DTC DETECTION LOGIC

NOTE:

- If DTC P1650 is displayed with DTC U1001, perform the trouble diagnosis for DTC U1001. Refer to EC-191.
- If DTC P1650 is displayed with DTC P0607, perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415</u>. "DTC Logic".
- If DTC P1650 is displayed with B209F or B20A0 of IPDM E/R, perform the trouble diagnosis for B209F or B20A0. Refer to SEC-101, "DTC Logic" or SEC-103, "DTC Logic".
- If DTC P1650 is displayed with B26F9 or B26FA of BCM, perform the trouble diagnosis for B209F or B20A0. Refer to SEC-95, "DTC Logic" or SEC-97, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition		
P1651	STR MTR RELAY (Starter control relay circuit)	A correlated error is detected for 2 seconds or more between a control signal transmitted from ECM and a feedback signal transmitted from IPDM E/R via CAN communication line.	Harness or connectors (Between ECM harness connector and IPDM E/R harness connector is shorted to power.) (Between ECM harness connector and BCM harness connector is shorted to power.) IPDM E/R BCM	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

Before performing the following procedure, confirm that battery voltage is 12 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Start the engine and let it idle at least 30 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-492, "Diagnosis Procedure". YES

NO >> INSPECTION END

EC-491 Revision: 2014 October 2015 JUKE

EC

Α

Е

Н

K

Ν

P1651 STARTER MOTOR RELAY

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011461779

1. INSPECTION START

Check the starter motor operation.

Is the starter motor operated?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK DTC WITH IPDM E/R

Check DTC with IPDM E/R. Refer to PCS-13, "CONSULT Function (IPDM E/R)".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Perform trouble diagnosis for DTC indicated.

3.check dtc with ${\sf BCM}$

Check DTC with BCM. Refer to BCS-32, "BCM: CONSULT Function (BCM - BCM)".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Perform trouble diagnosis for DTC indicated.

4. CHECK CRANKING REQUEST SIGNAL CIRCUIT-I

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+				
ECM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F26	92	E13	23	Existed

5. Also check harness for short to ground to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK CRANKING REQUEST SIGNAL CIRCUIT-II

- Disconnect BCM harness connector.
- 2. Check the continuity between ECM harness connector and BCM harness connector.

+				
ECM		BCM		Continuity
Connector	Terminal	Connector	Terminal	
F26	92	M69	64	Existed

3. Also check harness for short to ground to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".

NO >> Repair or replace error-detected parts.

P1652 STARTER MOTOR SYSTEM COMM

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1652 STARTER MOTOR SYSTEM COMM

Description INFOID:0000000011461780

ECM controls ON/OFF state of the starter relay, according to the engine and vehicle condition. On the other hand, models with the Intelligent Key System transmit a control signal to IPDM E/R by way of BCM via CAN communication.

Under normal conditions, ECM controls and maintains the starter relay in OFF state during engine running or "D" position.

When detecting a decrease in engine speed due to rapid deceleration or heavy load condition, ECM controls and reactivates the starter relay.

IPDM E/R detects a control state of starter relay and starter control relay and transmits a feedback signal to ECM via CAN communication.

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P1650 is displayed with DTC U1001, perform the trouble diagnosis for DTC U1001. Refer to <u>EC-191</u>, "DTC Logic".
- If DTC P1650 is displayed with DTC P0607, perform the trouble diagnosis for DTC P0607. Refer to <u>EC-415</u>, "DTC Logic".
- If DTC P1650 is displayed with B209F or B20A0 of IPDM E/R, perform the trouble diagnosis for B209F or B20A0. Refer to <u>SEC-101, "DTC Logic"</u> or <u>SEC-103, "DTC Logic"</u>.
- If DTC P1650 is displayed with B26F9 or B26FA of BCM, perform the trouble diagnosis for B209F or B20A0. Refer to <u>SEC-95</u>, "DTC Logic" or <u>SEC-97</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1652	STR MTR SYS COMM (Starter motor communication line)	ECM detects malfunction in starter motor drive circuit of the IPDM E/R.	IPDM E/R

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Start the engine and wait at least 5 minutes.
- Repeat step 1 and 2 for 20 times.
- 4. Check DTC.

Is DTC detected?

YES >> Proceed to <u>EC-493</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

1.INSPECTION START

- Erase DTC.
- Perform DTC confirmation procedure. Refer to <u>EC-493, "DTC Logic"</u>.
- Check DTC.

EC

Α

Е

G

Н

K

L

M

N

0

D

INFOID:0000000011461782

P1652 STARTER MOTOR SYSTEM COMM

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the P1652 displayed again?

YES >> GO TO 2.

NO >> INSPECTION END

2. CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".

NG >> Repair or replace error-detected parts.

P1805 BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P1805 BRAKE SWITCH

DTC Logic INFOID:0000000011461783

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1805	BRAKE SW/CIRCUIT (Brake switch)	A stop lamp switch signal is not sent to ECM for extremely long time while the vehicle is driving.	Harness or connectors (Stop lamp switch circuit is open or shorted.) Stop lamp switch

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- Fully depress the brake pedal for at least 5 seconds.
- Erase the DTC.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-495, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect stop lamp switch harness connector.
- Check the voltage between stop lamp switch harness connector and ground.

Stop lam	p switch	_	Voltage	
Connector	Terminal			
E102 ^{*1} E118 ^{*2}	1	Ground	Battery voltage	

^{*1:} CVT models

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK STOP LAMP SWITCH INPUT SIGNAL CIRCUIT

- Disconnect ECM harness connector.
- Check the continuity between stop lamp switch harness connector and ECM harness connector.

+		-	-	
Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E102 ^{*1} E118 ^{*2}	2	E18	115	Existed

^{*1:} CVT models

EC-495 Revision: 2014 October 2015 JUKE

Α

EC

D

Е

F

INFOID:0000000011461784

Ν

^{*2:} M/T models

^{*2:} M/T models

Also check harness for short to ground and to power.

P1805 BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK STOP LAMP SWITCH

Check the stop lamp switch. Refer to EC-496, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace stop lamp switch. Refer to <u>BR-20, "Exploded View"</u>.

Component Inspection (Stop Lamp Switch)

INFOID:0000000011461785

1. CHECK STOP LAMP SWITCH-I

- 1. Turn ignition switch OFF.
- Disconnect stop lamp switch harness connector.
- 3. Check the continuity between stop lamp switch terminals as per the following conditions.

Stop lan	np switch	Condition			
+	_			ondition Continuity	
Tern	ninals				
			Fully released	Not existed	
1	2	Brake pedal	Slightly de- pressed	Existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH-II

- 1. Adjust stop lamp switch installation. Refer to BR-9, "Inspection and Adjustment".
- 2. Check the continuity between stop lamp switch terminals as per the following conditions.

Stop lan	np switch	Condition		
+	_			Continuity
Term	ninals			
			Fully released	Not existed
1	2	Brake pedal	Slightly de- pressed	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch. Refer to <u>BR-20, "Exploded View"</u>.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P2096, P2097 A/F SENSOR 1

DTC Logic INFOID:0000000011461786

DTC DETECTION LOGIC

EC

Α

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible Cause	С
P2096	POST CAT FUEL TRIM SYS B1 (Post catalyst fuel trim system too lean bank 1)	The output voltage computed by ECM from the A/F sensor 1 signal is shifts to the lean side for a specified period.	A/F sensor 1 A/F sensor 1 heater Heated oxygen sensor 2	D
P2097	POST CAT FUEL TRIM SYS B1 (Post catalyst fuel trim system too rich bank 1)	The A/F signal computed by ECM from the A/F sensor 1 signal is shifts to the rich side for a specified period.	Fuel pressureFuel injectorIntake air leaksExhaust gas leaks	E

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Clear the mixture ratio self-learning value, Refer to EC-161, "Work Procedure",
- Turn ignition switch OFF and wait at least 10 seconds. 2.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for 1 minute under no load.
- Let engine idle for 1 minute.
- Keep engine speed between 2,500 and 3,000 rpm for 20 minutes.
- 6. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-497, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

INFOID:0000000011461787

M

N

Р

1. CHECK HARNESS CONNECTOR

- Turn ignition switch OFF.
- Disconnect A/F sensor 1 harness connector.
- Check harness connector for water.

Water should not exit.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness connector.

2.RETIGHTEN A/F SENSOR 1 AND HEATED OXYGEN SENSOR 2

Loosen and retighten the A/F sensor 1 and heated oxygen sensor 2. Refer to EM-43, "Exploded View", EX-5, "Exploded View".

>> GO TO 3.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

3.CHECK FOR EXHAUST GAS LEAK

- 1. Start engine and run it at idle.
- 2. Listen for an exhaust gas leak before the three way catalyst 2.

Is exhaust gas leak detected?

YES >> Repair or replace malfunctioning parts.

NO >> GO TO 4.

4. CHECK FOR INTAKE AIR LEAK

- Reconnect A/F sensor 1 harness connector.
- 2. Start engine and run it at idle.
- Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

YES >> Repair or replace malfunctioning parts.

NO >> GO TO 5.

5.CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

- 1. Clear the mixture ratio self-learning value. Refer to EC-161, "Work Procedure".
- 2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171 or P0172 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171 or P0172. Refer to <u>EC-293, "DTC Logic"</u> or <u>EC-297, "DTC Logic"</u>.

NO >> GO TO 6.

6.CHECK A/F SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect A/F sensor 1 harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between A/F sensor 1 harness connector and ground.

+ A/F sensor 1			
		-	Voltage
Connector	Terminal		
F70	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 7.

7. CHECK A/F SENSOR 1 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and IPDM E/R harness connector.

+		_		
A/F ser	nsor 1	IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		•
F70	4	E14	36	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

8. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+		-		
A/F ser	nsor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F70	1	F25	21	Existed
170	2	123	25	LXISIEU

Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

	+		
A/F sensor 1		-	Continuity
Connector	Terminal		
F70	1	Ground	Not existed
170	2	Giodila	Not existed

E	+ ECM	-	Continuity
Connector	Terminal		
F25	21	Ground	Not existed
125	25	Giodila	Not existed

5. Also check harness for short to power.

Is the inspection result normal?

>> GO TO 9. YES

NO >> Repair or replace error-detected parts.

9.check a/f sensor 1 heater

Check the A/F sensor 1 heater. Refer to EC-200, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 12.

10.CHECK HEATED OXYGEN SENSOR 2

Check heated oxygen sensor 2. Refer to EC-272, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

11. CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace error-detected parts.

12.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1. Refer to EM-43, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved Anti-seize Lubricant (commercial service tool).

EC-499 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

K

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Do you have CONSULT?

YES >> GO TO 13.

NO >> GO TO 14.

13. CONFIRM A/F ADJUSTMENT DATA

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "A/F ADJ-B1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Make sure that "0.000" is displayed on CONSULT screen.

Is "0.000" displayed?

YES >> INSPECTION END

NO >> GO TO 14.

14. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

Clear the mixture ratio self-learning value. Refer to EC-161, "Work Procedure".

Do you have CONSULT?

YES >> GO TO 15.

NO >> INSPECTION END

15. CONFIRM A/F ADJUSTMENT DATA

(P)With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "A/F ADJ-B1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Make sure that "0.000" is displayed on CONSULT screen.

>> INSPECTION END

P2100, P2103 THROTTLE CONTROL MOTOR RELAY

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P2100, P2103 THROTTLE CONTROL MOTOR RELAY

DTC Logic

DTC DETECTION LOGIC

Α

D

Е

F

Н

Ν

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2100	ETC MOT PWR-B1 (Throttle control motor relay circuit open)	ECM detects a voltage of power source for throttle control motor is excessively low.	Harness or connectors (Throttle control motor relay circuit is open) Throttle control motor relay
P2103	ETC MOT PWR (Throttle control motor relay circuit short)	ECM detect the throttle control motor relay is stuck ON.	Harness or connectors (Throttle control motor relay circuit is shorted) Throttle control motor relay

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V.

Witch DTC is detected?

P2100 >> GO TO 2.

P2103 >> GO TO 3.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P2100

- 1. Turn ignition switch ON and wait at least 2 seconds.
- Start engine and let it idle for 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-501, "Diagnosis Procedure".

NO >> INSPECTION END

3.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P2103

- 1. Turn ignition switch ON and wait at least 1 second.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-501, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461789

1. CHECK THROTTLE CONTROL MOTOR RELAY POWER SUPPLY

- 1. Turn ignition switch OFF.
- Check the voltage between ECM harness connector and ground.

	+		_	
EC		CM		Voltage
Connector	Terminal	Connector	Terminal	
F26	77	E18	127	Battery voltage

Revision: 2014 October EC-501 2015 JUKE

P2100, P2103 THROTTLE CONTROL MOTOR RELAY

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK THROTTLE CONTROL MOTOR RELAY POWER SUPPLY CIRCUIT

- Disconnect ECM harness connector.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		_		
ECM		IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		
F26	77	E15	60	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL

Check the voltage between ECM harness connector and ground as per the following conditions.

ECM				V/ //
Connector	+	-	Condition	Voltage (Approx.)
Connector	Terminal			(
E18	122	127	Ignition switch: OFF	0 V
L10	122 121		Ignition switch: ON	Battery voltage

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 4.

4. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		_		
ECM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E18	122	E15	55	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

P2101 ELECTRIC THROTTLE CONTROL FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P2101 ELECTRIC THROTTLE CONTROL FUNCTION

DTC Logic INFOID:0000000011461790

DTC DETECTION LOGIC

NOTE:

- If DTC P2101 is displayed with DTC P2100, first perform the trouble diagnosis for DTC P2100. Refer to EC-501, "DTC Logic".
- If DTC P2101 is displayed with DTC P2119, first perform the trouble diagnosis for DTC P2119. Refer to EC-508, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P2101	ETC FNCTN/CIRC-B1 (Electric throttle control performance)	Electric throttle control function does not operate properly.	Harness or connectors (Throttle control motor circuit is open or shorted) Electric throttle control actuator

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V when engine is running.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 2 seconds.
- Start engine and let it idle for 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-503, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461791

1. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL

Check the voltage between ECM harness connector terminals as per the following conditions.

ECM				\/-\\	
Connector +		_	Condition	Voltage (Approx.)	
Connector	Terminal				
E18	122	127	Ignition switch: OFF	0 V	
LIO	122 127		Ignition switch: ON	Battery voltage	

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 2.

2.CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT

Turn ignition switch OFF.

EC

Α

D

Е

F

Н

K

M

Ν

P2101 ELECTRIC THROTTLE CONTROL FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Disconnect ECM harness connector.
- Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		_		
ECM		IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		
E18	122	E15	55	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE CONTROL MOTOR RELAY POWER SUPPLY CIRCUIT

1. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		_		
ECM		IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		
F26	77	E15	60	Existed

2. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK THROTTLE CONTROL MOTOR OUTPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		_		
Electric throttle control actuator		ECM		Continuity
Connector	Terminal	Connector Terminal		
F29	5	F26	51	Not existed
			52	Existed
			51	Existed
			52	Not existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

- Remove the intake air duct. Refer to <u>EM-27</u>, "<u>Exploded View</u>".
- Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Remove the foreign matter and clean the electric throttle control actuator inside, then perform throttle valve closed position learning. Refer to <u>EC-157</u>, "Work <u>Procedure"</u>.

P2101 ELECTRIC THROTTLE CONTROL FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

6. CHECK THROTTLE CONTROL MOTOR

Check the throttle control motor. Refer to EC-505, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

Component Inspection

INFOID:0000000011461792

1. CHECK THROTTLE CONTROL MOTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- 3. Check the resistance between electric throttle control actuator terminals as per the following.

Electric throttle	control actuator	
+ -		Resistance (Approx.)
Term	ninals	(+ + +)
5	6	1 - 15 Ω [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

Н

Α

EC

D

Е

F

Κ

L

M

Ν

U

Р

P2118 THROTTLE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P2118 THROTTLE CONTROL MOTOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P2118	ETC MOT-B1 (Throttle control motor circuit short)	ECM detects short in both circuits between ECM and throttle control motor.	Harness or connectors (Throttle control motor circuit is shorted.) Electric throttle control actuator (Throttle control motor)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 2 seconds.
- 2. Start engine and let it idle for 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-506, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461794

1. CHECK THROTTLE CONTROL MOTOR OUTPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- 3. Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		_		
Electric throttle control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
	5	F	51	Not existed
F29	5	F26	52	Existed
6	F20	51	Existed	
	6		52	Not existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

P2118 THROTTLE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

2.check throttle control motor

Check the throttle control motor. Refer to EC-507, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

Component Inspection

INFOID:0000000011461795

1. CHECK THROTTLE CONTROL MOTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- 3. Check the resistance between electric throttle control actuator terminals as per the following.

Electric throttle	control actuator	
+ -		Resistance (Approx.)
Term	ninals	(+ + +)
5	6	1 - 15 Ω [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

Н

Α

EC

D

Е

F

Κ

L

 \mathbb{N}

Ν

U

Р

P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

DTC Logic INFOID:000000011461796

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)			Possible cause
	ETC ACTR-B1	Α	Electric throttle control actuator does not function properly due to the return spring malfunction.	
P2119			Throttle valve opening angle in fail-safe mode is not in specified range.	Electric throttle control actuator
		С	ECM detect the throttle valve is stuck open.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure for malfunction a and b

- 1. Turn ignition switch ON and wait at least 1 second.
- 2. Set selector lever to D (CVT) or 1st (M/T) position and wait at least 3 seconds.
- 3. Set selector lever to P (CVT) or Neutral (M/T) position.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON and wait at least 1 second.
- 6. Set selector lever to D (CVT) or 1st (M/T) position and wait at least 3 seconds.
- 7. Set selector lever to P (CVT) or Neutral (M/T) position.
- 8. Turn ignition switch OFF, wait at least 10 seconds and then turn ON.
- 9. Check DTC.

Is DTC detected?

YES >> Proceed to EC-508, "Diagnosis Procedure".

NO >> GO TO 3.

3.perform dtc confirmation procedure for malfunction c

- 1. Turn ignition switch ON and wait at least 1 second.
- 2. Set selector lever to D (CVT) or 1st (M/T) position and wait at least 3 seconds.
- 3. Set selector lever to P (CVT) or Neutral (M/T) position.
- 4. Start engine and let it idle for 3 seconds.
- 5. Check DTC.

Is DTC detected?

YES >> Proceed to EC-508, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461797

1. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

- 1. Remove the intake air duct. Refer to EM-27, "Exploded View".
- 2. Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

YES >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> Remove the foreign matter and clean the electric throttle control actuator inside, then perform throttle valve closed position learning. Refer to <u>EC-157</u>, "Work <u>Procedure"</u>.

EC

Α

С

D

Е

F

G

Н

K

L

M

Ν

0

Р

P2122, P2123 APP SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P2122 or P2123 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to <u>EC-420, "DTC Logic"</u>.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	
P2122	APP SEN 1/CIRC (Accelerator pedal position sensor 1 circuit low input)	An excessively low voltage from the APP sensor 1 is sent to ECM.	Harness or connectors (APP sensor 1 circuit is open or shorted.)	
P2123	APP SEN 1/CIRC (Accelerator pedal position sensor 1 circuit high input)	An excessively high voltage from the APP sensor 1 is sent to ECM.	Accelerator pedal position sensor (APP sensor 1)	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-510, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461799

1. CHECK APP SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect accelerator pedal position (APP) sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between APP sensor harness connector and ground.

	+		
APP sensor		_	Voltage (Approx.)
Connector Terminal			, , ,
E101	4	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2. CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT

P2122, P2123 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between APP sensor harness connector and ECM harness connector.

+				
APP :	sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
E101	4	E18	101	Existed

Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK APP SENSOR 1 GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between APP sensor harness connector and ECM harness connector.

+			_	
APP :	sensor	E	CM	Continuity
Connector	Terminal	Connector	Terminal	
E101	2	E18	105	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

f 4.CHECK APP SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between APP sensor harness connector and ECM harness connector.

	+		_	
APP :	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
E101	3	E18	102	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.CHECK APP SENSOR

Check the APP sensor. Refer to EC-511, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace accelerator pedal assembly. Refer to EM-29, "Exploded View". NO

Component Inspection

1. CHECK ACCELERATOR PEDAL POSITION SENSOR

- Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Turn ignition switch ON.
- Check the voltage between ECM harness connector terminals as per the following condition.

Α

EC

D

Е

Ν

INFOID:0000000011461800

Revision: 2014 October

P2122, P2123 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	ECM		Condition		
Connector	+	_			Voltage
Connector	Terr	minal			
	102	105		Fully released	0.6 - 0.9 V
E18	102	103	Accelerator pedal	Fully depressed	3.9 - 4.7 V
£10	119	120	Accelerator pedar	Fully released	0.3 - 0.6 V
	119	120		Fully depressed	1.95 - 2.4 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace accelerator pedal assembly. Refer to EM-29, "Exploded View".

Α

EC

Н

M

INFOID:0000000011461802

P2127, P2128 APP SENSOR

DTC Logic INFOID:0000000011461801

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2127	APP SEN 2/CIRC (Accelerator pedal position sensor 2 circuit low input)	An excessively low voltage from the APP sensor 2 is sent to ECM.	Harness or connectors (APP sensor 2 circuit is open or shorted.) [Crankshaft position sensor (POS) circuit
P2128	APP SEN 2/CIRC (Accelerator pedal position sensor 2 circuit high input)	An excessively high voltage from the APP sensor 2 is sent to ECM.	is shorted.] (Refrigerant pressure sensor circuit is shorted.) (EVAP control system pressure sensor circuit is shorted.) (Battery current sensor circuit is shorted.) • Accelerator pedal position sensor (APP sensor 2) • Crankshaft position sensor (POS) • Refrigerant pressure sensor • EVAP control system pressure sensor • Battery current sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 1 second.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-513, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK APP SENSOR 2 POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect accelerator pedal position (APP) sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between APP sensor harness connector and ground.

-	+		Voltago	
APP sensor		_	Voltage (Approx.)	
Connector	Terminal		() 1 - 7	
E101	5	Ground	5 V	

Is the inspection result normal?

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 3. NO >> GO TO 2.

2. CHECK SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

E	СМ	Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1
	68	Battery current sensor	F52	1
F26	00	G sensor	B32	3
F20	72	CMP sensor	F109	1
	12	EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check app sensor 2 ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between APP sensor harness connector and ECM harness connector.

+				
APP	sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
E101	1	E18	120	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK APP SENSOR 2 INPUT SIGNAL CIRCUIT

1. Check the continuity between APP sensor harness connector and ECM harness connector.

	+		_	
APP	sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
E101	6	E18	119	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5. CHECK APP SENSOR

Check the APP sensor. Refer to EC-515, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

P2127, P2128 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> Replace accelerator pedal assembly. Refer to EM-29, "Exploded View".

Component Inspection

INFOID:0000000011461803

1.CHECK ACCELERATOR PEDAL POSITION SENSOR

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- Turn ignition switch ON.
- Check the voltage between ECM harness connector terminals as per the following condition.

	ECM					
Connector	+	_	Condition		Condition Voltage	
Connector	Terr	minal				
	102	105		Fully released	0.6 - 0.9 V	
E18	102	105	Accelerator pedal	Fully depressed	3.9 - 4.7 V	
E10	119	120	Accelerator pedar	Fully released	0.3 - 0.6 V	
	119	120		Fully depressed	1.95 - 2.4 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace accelerator pedal assembly. Refer to EM-29, "Exploded View". EC

Α

D

Е

F

Н

K

M

L

Ν

0

Р

P2135 TP SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P2135 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-420, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P2135	TP SENSOR-B1 (Throttle position sensor circuit range/perfor- mance)	Rationally incorrect voltage is sent to ECM compared with the signals from TP sensor 1 and TP sensor 2.	Harness or connector (TP sensor 1 or 2 circuit is open or shorted.) Electric throttle control actuator (TP sensor 1 or 2)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-516, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461805

1. CHECK THROTTLE POSITION SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between electric throttle control actuator harness connector and ground.

	+		
Electric throttle	Electric throttle control actuator		Voltage (Approx.)
Connector	Terminal		(11 /
F29	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.check throttle position sensor power supply circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ground.

+		_		
	Electric throttle control actuator		СМ	Continuity
Connector	Terminal	Connector	Terminal	
F29	1	F26	62	Existed

Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

>> Repair or replace error-detected parts. NO

${f 3.}$ CHECK THROTTLE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

	+ -			
	e control actu- tor	E	ECM	
Connector	Terminal	Connector	Terminal	
F29	4	F26	74	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

>> Repair or replace error-detected parts. NO

f 4.CHECK THROTTLE POSITION SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+		-		
	le control actu- tor	E	CM	Continuity
Connector	Terminal	Connector	Terminal	
F29	2	F26	75	Existed
1 29	3	1 20	76	LXISIEU

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

${f 5.}$ CHECK THROTTLE POSITION SENSOR

Check the throttle position sensor. Refer to EC-517, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace electric throttle control actuator. Refer to EM-29, "Exploded View". NO

Component Inspection

${f 1}$.CHECK THROTTLE POSITION SENSOR

- 1. Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.

EC-517 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

K

N

Р

INFOID:0000000011461806

P2135 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Perform "Throttle Valve Closed Position Learning". Refer to <u>EC-157, "Work Procedure".</u>
- 4. Turn ignition switch ON.
- 5. Set selector lever to D (CVT) or 1st (M/T) position.
- 6. Check the voltage between ECM harness connector terminals as per the following conditions.

	ECM		Condition Voltage				
Connector	+	_			Condition Voltage		Voltage
Connector	Terr	minal					
	75			Fully released	More than 0.36V		
F26	73	74	Accelerator	Fully depressed	Less than 4.75V		
F20	76	74	pedal	Fully released	Less than 4.75V		
	76		Fully depressed	More than 0.36V			

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-29, "Exploded View".

[MR FOR NISMO RS MODELS]

P2138 APP SENSOR

DTC Logic INFOID:0000000011461807

DTC DETECTION LOGIC

NOTE:

If DTC P2138 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-420, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2138	APP SENSOR (Accelerator pedal position sensor circuit range/performance)	Rationally incorrect voltage is sent to ECM compared with the signals from APP sensor 1 and APP sensor 2.	Harness or connector (APP sensor 1 or 2 circuit is open or shorted.) (Turbocharger boost sensor circuit is open or shorted.) (Fuel rail pressure sensor circuit is open or shorted.) (Battery current sensor circuit is open or shorted.) (G sensor circuit is open or shorted.) (Camshaft position sensor circuit is open or shorted.) (Exhaust valve timing control position sensor circuit is open or shorted.) (Engine oil pressure sensor circuit is open or shorted.) - Accelerator pedal position sensor (APP sensor 1 or 2) Turbocharger boost sensor Fuel rail pressure sensor Battery current sensor G sensor Camshaft position sensor Exhaust valve timing control position sensor Exhaust valve timing control position sensor Engine oil pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2.perform dtc confirmation procedure

- Start engine and let it idle for 1 second.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-520, "Diagnosis Procedure".

NO >> INSPECTION END EC

Α

M

Ν

[MR FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011461808

1. CHECK APP SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect accelerator pedal position (APP) sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between APP sensor harness connector and ground.

	+		V 16
APP sensor		_	Voltage (Approx.)
Connector	Connector Terminal		(11 /
E101	E101 4		5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between APP sensor harness connector and ECM harness connector.

+				
APP	sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
E101	4	E18	101	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK APP SENSOR 2 POWER SUPPLY

Check the voltage between APP sensor harness connector and ground.

	+		Valtana	
APP :	sensor	_	Voltage (Approx.)	
Connector Terminal			, , ,	
E101	5	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check harness connector for short to power and short to ground, between the following terminals.

EC	CM	Sensor		
Connector	Terminal	Name	Connector	Terminal
		FRP sensor	F5	1
F25	39	EOP sensor	F43	3
		Turbocharger boost sensor	F75	1

P2138 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

E	CM	Sensor		
Connector	Terminal	Name	Connector	Terminal
	68	Battery current sensor	F52	1
E26	F26 72	G sensor	B32	3
1 20		CMP sensor	F109	1
12		EVT control position sensor	F110	1
E18	118	APP sensor 2	E101	5

EC

Α

Is inspection result normal?

NO

YES >> Perform the trouble diagnosis for power supply circuit.

>> Repair or replace error-detected parts.

5. CHECK APP SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between APP sensor harness connector and ECM harness connector.

+		_		
APP :	sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
E101	1	E18	120	Existed
	2	L 10	105	LAISIGU

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

O.CHECK APP SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between APP sensor harness connector and ECM harness connector.

+		-		
APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E101	3	E18	102	Existed
L101	6	L10	119	LAISIEU

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts

1.CHECK APP SENSOR

Check the APP sensor. Refer to EC-515, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace accelerator pedal assembly. Refer to EM-29, "Exploded View".

Component Inspection

INFOID:0000000011461809

1. CHECK ACCELERATOR PEDAL POSITION SENSOR

- Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Turn ignition switch ON.
- Check the voltage between ECM harness connector terminals as per the following condition.

EC-521 Revision: 2014 October 2015 JUKE

D

Е

Ν

P2138 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

ECM			Condition		Voltage
Connector + -					
Connector	Terr	ninal			
	102	102 105 119 120	Accelerator pedal	Fully released	0.6 - 0.9 V
E18	102			Fully depressed	3.9 - 4.7 V
LIO	110			Fully released	0.3 - 0.6 V
	119			Fully depressed	1.95 - 2.4 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace accelerator pedal assembly. Refer to EM-29, "Exploded View".

P2162 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

P2162 VEHICLE SPEED SENSOR

Description INFOID:0000000011461810

ECM receives a rear wheel sensor signal from ABS actuator and electric unit (control unit) via CAN communication to switch combustion for the direct injection gasoline system. For the direct injection gasoline system, refer to EC-50, "DIRECT INJECTION GASOLINE SYSTEM: System Description".

INFOID:0000000011461811

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P2162 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX. Refer to EC-113, "DTC Index".
- If DTC P2162 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to EC-415, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2162	VEHICLE SPEED SEN A/B (Vehicle speed sensor A/B correlation)	ECM detects a rear LH wheel sensor signal or a rear RH wheel sensor signal transmitted from the ABS actuator and electric unit (control unit) via CAN communication at least for 15 seconds in a row when the vehicle is in stopped condition.	Harness or connectors (The CAN communication line is open or shorted) Rear LH wheel sensor Rear RH wheel sensor ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 9 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

Start engine and let it idle for at least 30 seconds.

NOTE:

Never depress the accelerator pedal during idle running.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-523, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

(P)With CONSULT

Check DTC with ABS actuator and electric unit (control unit). Refer to BRC-39, "CONSULT Function".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform diagnosis procedure corresponding to DTC indicated.

2.CHECK REAR WHEEL SENSOR-I

EC

Α

D

Е

F

Н

N

INFOID:0000000011461812

EC-523 Revision: 2014 October 2015 JUKE

P2162 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

(P)With CONSULT

- 1. Stop the vehicle.
- 2. Set the parking brake.
- 3. Use CONSULT to select "RR RH SENSOR" and "RR RH SENSOR" in "DATA MONITOR" mode of "ABS"
- 4. Check indications of "RR RH SENSOR" and "RR RH SENSOR".

NOTE:

Never cause the vehicle to vibrate.

Is 0 km/h (0 MPH) indicated for both "RR RH SENSOR" and "RR RH SENSOR"?

YES >> GO TO 3.

NO >> Perform trouble diagnosis of the rear wheel sensor if 0 km/h (0 MPH) is not displayed. Refer to BRC-81, "Diagnosis Procedure".

3. CHECK REAR WHEEL SENSOR-II

(P)With CONSULT

1. Drive the vehicle at 20 km/h (13 MPH).

CAUTION:

Always drive vehicle at a safe speed.

2. Check indications of "RR RH SENSOR" and "RR RH SENSOR".

Is the difference between the indicated values of "RR RH SENSOR" and "RR RH SENSOR" within \pm 1 km/h (1 MPH)?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Perform trouble diagnosis of the rear wheel sensor. Refer to BRC-81. "Diagnosis Procedure"

[MR FOR NISMO RS MODELS]

P2263 TC SYSTEM

DTC Logic INFOID:0000000011461813

DTC DETECTION LOGIC

NOTE:

If DTC P2263 is displayed with DTC P0237 or P0238, first perform the trouble diagnosis for DTC P0237 or P0238. Refer to <u>EC-328</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2263	TC SYSTEM-B1 (Turbocharger boost system performance)	In spite of the boosting area, the boost does not increase.	 Intake air leaks Exhaust gas leaks Turbocharger boost sensor Turbocharger boost control solenoid valve Recirculation valve Exhaust manifold and turbocharger assembly Boost control actuator

DTC CONFIRMATION PROCEDURE

1.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-525, "Component Function Check".

NOTE:

Use component function check to check the overall function of the turbocharger system circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-526, "Diagnosis Procedure".

Component Function Check

1. PERFORM COMPONENT FUNCTION CHECK-I

Check the following:

- Disconnection of air duct or hose between electric throttle control actuator and compressor wheel.
- Exhaust gas leaks of exhaust manifold
- Open stuck of recirculation valve
- Stuck of turbocharger

Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to EC-526, "Diagnosis Procedure".

2.perform component function check-ii

- 1. Turn ignition switch OFF.
- Disconnect turbocharger boost control solenoid valve harness connector.
- 3. Disconnect of hose between turbocharger boost control solenoid valve and compressor outlet pipe.
- 4. Install pressure pump to turbocharger boost control solenoid valve.

EC

Α

Е

D

F

ı

INFOID:0000000011461814

.

K

M

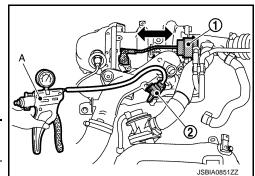
Р

< DTC/CIRCUIT DIAGNOSIS >

 Check that the rod of the boost control actuator (1) activates when supplying pressure and battery voltage to the turbocharger boost control solenoid valve (2) as per the following conditions.

A. Pressure pump

Operation	
Operation	
Boost control actuator rod operates	
Boost control actuator rod not operates	
E	



INFOID:0000000011461815

CAUTION:

Do not supply pressure over 83 kPa (623 mmHg, 24.51 inHg).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-526, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK FOR EXHAUST GAS LEAK

- 1. Start engine and run it at idle.
- 2. Listen for an exhaust gas leak of exhaust manifold.

Is exhaust gas leak detected?

YES >> Repair or replace malfunction parts.

NO >> GO TO 2.

2. CHECK FOR INTAKE AIR LEAK

Listen for an intake air leak between electric throttle control actuator and compressor wheel.

Is intake air leak detected?

YES >> Repair or replace malfunction parts.

NO >> GO TO 3.

3.CHECK RECIRCULATION VALVE

- 1. Turn ignition switch OFF.
- Check recirculation valve. Refer to EM-40, "Inspection".

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace recirculation valve. Refer to EM-32, "Exploded View".

f 4.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE POWER SUPPLY

- 1. Disconnect turbocharger boost control solenoid valve harness connector.
- Turn ignition switch ON.
- 3. Check the voltage between turbocharger boost control solenoid valve harness connector and ground.

	+		
_	st control solenoid lve	_	Voltage
Connector	Terminal		
F54 2		Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6. NO >> GO TO 5.

${f 5.}$ CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

Turn ignition switch OFF.

Turbocharger boost control so-

lenoid valve

Connector

F54

- Disconnect IPDM E/R harness connector.
- Check the continuity between turbocharger boost control solenoid valve harness connector and IPDM E/R harness connector.

Existed

E/R	Continuity

Also check harness for short to ground.

Terminal

2

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply.

IPDM

Connector

E14

NO >> Repair or replace error-detected parts.

6.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT

Terminal

36

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between turbocharger boost control solenoid valve harness connector and ECM harness connector.

+		_		
•	ooost control sod valve	ECM		Continuity
Connector	Terminal	Connector Terminal		
F54	1	F26	73	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

Check the turbocharger boost control solenoid valve. Refer to EC-528, "Component Inspection (Turbocharger Boost Control Solenoid Valve)".

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace turbocharger boost control solenoid valve. Refer to EM-39, "Exploded View".

8.CHECK BOOST CONTROL ACTUATOR

Check the boost control actuator. Refer to EM-40, "Inspection".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace exhaust manifold and turbocharger assembly. Refer to EM-39, "Exploded View".

9. CHECK TURBOCHARGER BOOST SENSOR

Check the turbocharger boost sensor. Refer to EC-528, "Component Inspection (Turbocharger Boost Sensor)".

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace turbocharger boost sensor. Refer to EM-32, "Exploded View".

10.CHECK EXHAUST MANIFOLD AND TURBOCHARGER ASSEMBLY

Check the exhaust manifold and turbocharger assembly. Refer to EM-44, "Inspection".

EC

Α

D

Н

K

M

N

2015 JUKE

Is the inspection result normal?

YES >> CHECK INTERMITTENT INCIDENT. Refer to GI-44, "Intermittent Incident".

NO >> Replace exhaust manifold and turbocharger assembly. Refer to EM-39, "Exploded View".

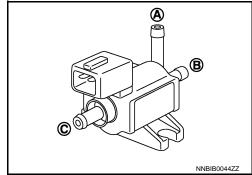
Component Inspection (Turbocharger Boost Control Solenoid Valve)

INFOID:0000000011461816

1. CHECK TURBOCHARGER BOOST CONTROL SOLENOID VALVE

- 1. Turn ignition switch OFF
- 2. Disconnect turbocharger boost control solenoid valve harness connector.
- 3. Disconnect hoses connected to turbocharger boost control solenoid valve.
- Check air passage continuity of turbocharger boost control solenoid valve as per the following conditions.

Condition	Air passage continuity between (A) and (B)	Air passage continuity between (A) and (C)
12 V direct current supply between terminals 1 and 2	Existed	Not existed
No supply	Not existed	Existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost control solenoid valve. Refer to EM-39, "Exploded View".

Component Inspection (Turbocharger Boost Sensor)

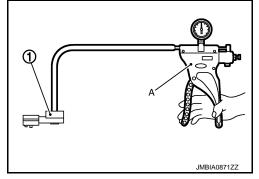
INFOID:0000000011461817

1. CHECK TURBOCHARGER BOOST SENSOR

- Turn ignition switch OFF.
- 2. Remove turbocharger boost sensor with its harness connector.
- Install pressure pump (A) to turbocharger boost sensor (1).
 CAUTION:

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminals as per the following conditions.



NOTE:

- · Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

ECM			Condition [Duranum (Delating to at	Malla	
Connector	+	-	Condition [Pressure (Relative to atmospheric pressure)]	Voltage (Approx.)	
Connector	Terminal		7	(
F25	41 44	0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V		
	41 44		40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	2.67 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to EM-39, "Exploded View".

FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

FUEL INJECTOR

Component Function Check

INFOID:0000000011461818

Α

EC

Е

F

Н

INFOID:0000000011461819

1.INSPECTION START

Turn ignition switch to START.

Is any cylinder ignited?

YES >> GO TO 2.

NO >> Proceed to <u>EC-529</u>, "<u>Diagnosis Procedure</u>".

2.CHECK FUEL INJECTOR FUNCTION

(P)With CONSULT

- 1. Start engine.
- Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Check that each circuit produces a momentary engine speed drop.

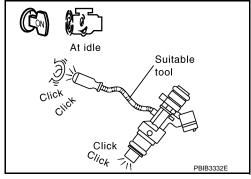
- 1. Let engine idle.
- 2. Listen to each fuel injector operating sound.

Clicking noise should be heard.

Is the inspection result normal?

YES >> INSPECTION END

>> Proceed to EC-529, "Diagnosis Procedure". NO



Diagnosis Procedure

1. CHECK FUEL INJECTOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect fuel injector harness connector.
- Turn ignition switch ON.
- Check the voltage between fuel injector harness connector and ground.

+				
Fuel injector			_	Voltage
Cylinder	Connector	Terminal		
1	F65	1		
2	F66	1	Ground	Battery voltage
3	F67	1	Giouna	
4	F68	1		

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 2.

2.CHECK FUEL INJECTOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between fuel injector harness connector and ECM harness connector.

(F)	A -2-	
	At idle	
ļ	ν	uitable
Ş	/to	ol
Clic _k		
Ċ	ich Charles	
	Click	,
	Click Click	
	-4 //l ²	PRIR3332F

K

Ν

Р

	+		-		
Fuel injector			ECM		Continuity
Cylinder	Connector	Terminal	Connector	Terminal	
1	F65	1		3	
2	F66	1	F25	1	Existed
3	F67	1	F25	4	LAISIEU
4	F68	1		3	

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK FUEL INJECTOR DRIVER POWER SUPPLY

- Reconnect ECM harness connector.
- 2. Turn ignition switch ON.
- 3. Check the voltage between ECM harness connector and ground.

	+			
E	СМ	_	Voltage	
Connector	Terminal			
F26	49	Ground	Battery voltage	
120	53	Giodila	Ballery Vollage	

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident"

NO >> GO TO 4.

4. CHECK FUEL INJECTOR DRIVER POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Disconnect fuel injector relay harness connector.
- 4. Check the continuity between ECM harness connector and fuel injector relay harness connector.

+		_		
E	CM	Fuel injector relay		Continuity
Connector	Terminal	Connector	Terminal	
F26	49	E57	5	Existed
1.20	53	L37	7	LAISIEU

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5. CHECK FUEL INJECTOR RELAY POWER SUPPLY (CONTACT SIDE)

Check the voltage between fuel injector relay harness connector and ground.

	+		
Fuel inje	ctor relay	_	Voltage
Connector	Terminal		
E57	3	Ground	Battery voltage
	O		

FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 6.

NO >> Perform the trouble diagnosis for power supply circuit.

6.check fuel injector relay power supply (excitation coil side)

- Reconnect all harness connectors disconnected.
- Turn ignition switch ON. 2.
- Check the voltage between fuel injector relay harness connector and ground.

	+		
Fuel injector relay		_	Voltage
Connector	Terminal		
E57	1	Ground	Battery voltage

Is the inspection result normal?

>> GO TO 8. YES NO >> GO TO 7

7.CHECK FUEL INJECTOR RELAY POWER SUPPLY CIRCUIT (EXCITATION COIL SIDE)

- Turn ignition switch OFF.
- 2. Disconnect fuel injector relay harness connector.
- 3. Disconnect IPDM E/R harness connector.
- Check the continuity between IPDM E/R harness connector and fuel injector harness connector.

+		-		
IPDN	M E/R	Fuel injector relay		Continuity
Connector	Terminal	Connector	Terminal	
E14	35	E57	1	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

8.CHECK FUEL INJECTOR RELAY GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect fuel injector relay harness connector. 2.
- Check the continuity between fuel injector relay harness connector and ground.

	+		
Fuel injector relay		_	Continuity
Connector	Terminal		
E57	2	Ground	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 10.

>> Repair or replace error-detected parts. NO

9. CHECK FUEL INJECTOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between fuel injector harness connector and ECM harness connector.

EC-531 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

L

N

+				_	
	Fuel injector			СМ	Continuity
Cylinder	Connector	Terminal	Connector	Terminal	
1	F65	2		5	
2	F66	2	F25	6	Existed
3	F67	2	125	7	LXISIEU
4	F68	2		8	

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace error-detected parts.

10. CHECK FUEL INJECTOR RELAY

Check the fuel injector relay. Refer to EC-532, "Component Inspection (Fuel Injector Relay)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident"

NO >> Replace fuel injector relay. Refer to PG-8, "Standardized Relay".

11. CHECK FUEL INJECTOR

Check the fuel injector. Refer to EC-532, "Component Inspection (Fuel Injector)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident"

NO >> Replace malfunctioning fuel injector. Refer to EM-53, "Exploded View".

Component Inspection (Fuel Injector)

INFOID:0000000011461820

1. CHECK FUEL INJECTOR

- Turn ignition switch OFF.
- 2. Disconnect fuel injector harness connector.
- Check resistance between fuel injector terminals as per the following.

Fuel injector		
+ -		Resistance
Terminals		
1	2	1.44 - 1.73 Ω [at 10 - 60°C (50 - 140°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning fuel injector. <u>EM-53</u>, "Exploded View"

Component Inspection (Fuel Injector Relay)

INFOID:0000000011461821

1. CHECK FUEL INJECTOR RELAY

- 1. Turn ignition switch OFF.
- 2. Remove fuel injector relay.

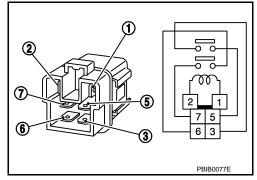
FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

3. Check the continuity between fuel heater relay terminals as per the following conditions.

Fuel injector relay			
+	-	Conditions	Continuity
Terr	minal		
3	5	12 V direct current supply between terminals 1 and 2	Existed
		No current supply	Not existed
6	7	12 V direct current supply between terminals 1 and 2	Existed
		No current supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace fuel injector relay.

Α

EC

С

D

Е

F

G

Н

K

L

M

Ν

0

Р

LOW PRESSURE FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

LOW PRESSURE FUEL PUMP

Component Function Check

INFOID:0000000011461822

1. CHECK FUEL PUMP FUNCTION

- 1. Turn ignition switch ON.
- 2. Pinch fuel feed hose with two fingers.

NOTE:

Fuel pressure pulsation should be felt on the fuel feed hose for 1 second after ignition switch is turned ON.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-534, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461823

1. CHECK FUEL PUMP RELAY POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between ECM harness connector terminals.

	ECM		
Connector	+	_	Voltage
Connector	Terr	minal	
E18	117	127	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK FUEL PUMP RELAY POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		_		
E	CM	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E18	117	E13	31	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK LOW FUEL PUMP POWER SUPPLY

- Turn ignition switch OFF.
- 2. Reconnect ECM harness connector.
- 3. Disconnect fuel level sensor unit and fuel pump harness connector.
- Turn ignition switch ON.
- 5. Check the voltage between fuel level sensor unit and fuel pump harness connector and ground.

LOW PRESSURE FUEL PUMP

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

+				
Fuel level sensor unit and fuel pump		-	Voltage	
Connector	Terminal			
B46	1	Ground	Battery voltage should for exist 1 second after ignition switch is turn ON.	

Is the inspection result normal?

YES >> GO TO 5. NO >> GO TO 4.

f 4.CHECK LOW FUEL PUMP POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between fuel level sensor unit and fuel pump harness connector and IPDM E/R harness connector.

+				
	nsor unit and pump	IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		
B46	1	E15	54	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 5}.$ CHECK LOW FUEL PUMP GROUND CIRCUIT

- Turn ignition switch OFF.
- Check the continuity between fuel level sensor unit and fuel pump harness connector and ground.

+				
Fuel level sensor unit and fuel pump		_	Continuity	
Connector Terminal				
B46	3	Ground	Existed	

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK LOW FUEL PUMP

Check the low fuel pump. Refer to EC-535, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace fuel level sensor unit and fuel pump. Refer to FL-5, "2WD : Exploded View".

Component Inspection

1. CHECK FUEL PRESSURE REGULATOR

- Turn ignition switch OFF.
- Check low fuel pressure. Refer to EC-162, "Work Procedure".

Is inspection result normal?

EC-535 Revision: 2014 October 2015 JUKE

EC

Α

Е

F

Ν

INFOID:0000000011461824

LOW PRESSURE FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> INSPECTION END

NO >> GO TO 2.

$2.\mathsf{CHECK}$ LOW PRESSURE FUEL PUMP

- 1. Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit.
- 3. Check resistance between fuel level sensor unit terminals as follows.

Fuel level sensor unit			
+	_	Condition	Resistance
Tern	ninals		
2	4	Temperature: 25°C (77°F)	0.2 - 5.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace fuel level sensor unit. Refer to FL-5, "2WD : Exploded View".

Component Function Check

INFOID:0000000011461825

Α

EC

D

Е

F

1. CHECK HIGH PRESSURE FUEL PUMP FUNCTION

(E)With CONSULT

- Start engine.
- 2. Check "FUEL PRES SEN V" in "DATA MONITOR" mode of "ENGINE" using CONSULT.

Monitor Item	Condition	Values/Status
	Engine speed: Idle	1,140 – 1,460 mV
FUEL PRES SEN V	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

Without CONSULT

- Start engine.
- 2. Check the voltage between ECM harness connector terminals as per the following conditions.

	ECM			
Connector	+	_	Condition	Voltage
Connector	Tern	ninal		
F26	55	50	[Engine is running] • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div 5V/div JPBIA4722ZZ
. 20	30		[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	BATTERY VOLTAGE (11 - 14 V) * 20mSec/div 5V/div JPBIA4723ZZ

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-537, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461826

Ν

Р

1. CHECK HIGH PRESSURE FUEL PUMP POWER SUPPLY

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector and ground.

+				
ECM		_	Voltage	
Connector	Terminal			
F26	54	Ground	Battery voltage	

Is inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

YES >> GO TO 8. NO >> GO TO 2.

2.CHECK HIGH PRESSURE FUEL PUMP POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Disconnect fuel injector relay harness connector.
- Check the continuity between ECM harness connector and high pressure fuel pump relay harness connector.

+		-		
E	СМ	High pressure fuel pump re- lay		Continuity
Connector	Terminal	Connector	Terminal	
F26	54	E58	3	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts

3.CHECK HIGH PRESSURE FUEL PUMP RELAY POWER SUPPLY (CONTACT SIDE)

Check the voltage between high pressure fuel pump relay harness connector and ground.

+			
High pressure fuel pump relay		_	Voltage
Connector	Terminal		
E58	5	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> Perform the trouble diagnosis for power supply circuit.

4.CHECK HIGH PRESSURE FUEL PUMP RELAY POWER SUPPLY (EXCITATION COIL SIDE)

- 1. Reconnect all harness connectors disconnected.
- 2. Turn ignition switch ON.
- 3. Check the voltage between high pressure fuel pump relay harness connector and ground.

_				
	+			
	High pressure fuel pump relay		_	Voltage
	Connector Terminal			
	E58	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5

${f 5.}$ CHECK HIGH PRESSURE FUEL PUMP RELAY POWER SUPPLY CIRCUIT (EXCITATION COIL SIDE)

- 1. Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump relay harness connector.
- 3. Disconnect IPDM E/R harness connector.
- check the continuity between ipdm e/r harness connector and high pressure fuel pump harness connector.

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

+			_	
IPDM E/R		High pressure fuel pump re- lay		Continuity
Connector	Terminal	Connector	Terminal	
E14	35	E58	2	Existed

Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

6.CHECK HIGH PRESSURE FUEL PUMP RELAY GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump relay harness connector.
- Check the continuity between high pressure fuel pump relay harness connector and ground.

+			
High pressure fuel pump relay		_	Continuity
Connector	Terminal		
E58	1	Ground	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK HIGH PRESSURE FUEL PUMP RELAY

Check the high pressure fuel pump relay. Refer to EC-541, "Component Inspection (High Pressure Fuel Pump Relay)".

Is inspection result normal?

>> GO TO 8. YES

NO >> Replace high pressure fuel pump relay. Refer to PG-8, "Standardized Relay".

8.CHECK HIGH PRESSURE FUEL PUMP CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector and high pressure fuel pump harness connector.
- Check the continuity between ECM harness connector and high pressure fuel pump harness connector.

+				
E	ECM High pressure fuel pump		Continuity	
Connector	Terminal	Connector	Terminal	
F26	55	F53	1	Existed
1 20	56	1 33	2	LXISIEU

4. Also check harness for short to ground and to power.

Is inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

9. CHECK HIGH PRESSURE FUEL PUMP

Check the high pressure fuel pump. Refer to EC-540, "Component Inspection (High Pressure Fuel Pump)". Is inspection result normal?

YES >> GO TO 10.

>> Replace high pressure fuel pump. Refer to EM-48, "Exploded View". NO

EC-539 Revision: 2014 October 2015 JUKE

EC

Е

K

N

Р

Α

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

10.check high pressure fuel pump installation condition

- 1. Turn ignition switch OFF.
- 2. Check that the high pressure fuel pump is installed with no backlash and looseness.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace error-detected parts.

11. CHECK CAMSHAFT

- 1. Remove camshaft. Refer to EM-87, "Exploded View".
- 2. Check camshaft. Refer to EM-91, "Inspection".

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace camshaft. Refer to EM-87, "Exploded View".

Component Inspection (High Pressure Fuel Pump)

INFOID:0000000011461827

1. CHECK HIGH PRESSURE FUEL PUMP-I

- 1. Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump harness connector.
- 3. Check the resistance between high pressure fuel pump terminals as follows.

High pressu	re fuel pump	Condition Resistar			
+	-			Resistance	
Terminal					
1	2	Temperature °C (°F)	20 – 30 (68 - 86)	0.46 - 0.51 Ω	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace high pressure fuel pump. Refer to EM-48, "Exploded View".

2.CHECK HIGH PRESSURE FUEL PUMP-II

(I) With CONSULT

- 1. Reconnect high pressure fuel pump harness connector.
- Start the engine.
- Check "FUEL PRES SEN" in "DATA MONITOR" of "ENGINE" using CONSULT.

Data monitor item	Condition	Voltage (Approx.)
FUEL PRES SEN V	Engine speed: idle	1,140 – 1,460 mV
TOLLTINES SEN V	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

- 1. Start the engine.
- Check fuel rail pressure sensor signal voltage.

	+			
Fuel rail pr	essure sensor	_	Condition	Value (Approx.)
Connector	Terminal			
			Engine speed: idle	1.14 – 1.46 V
F5	2	Ground	Engine speed: Revving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V

Is the inspection result normal?

HIGH PRESSURE FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NO >> Replace high pressure fuel pump. Refer to EM-48, "Exploded View".

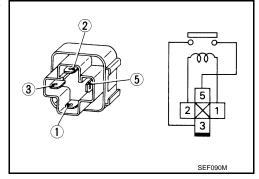
Component Inspection (High Pressure Fuel Pump Relay)

INFOID:0000000011461828

1. CHECK HIGH PRESSURE FUEL PUMP RELAY

- 1. Turn ignition switch OFF.
- 2. Remove high pressure fuel pump relay.
- Check the continuity between high pressure fuel pump relay terminals as per the following conditions.

High pressure fuel pump relay		0 - 15	Continuity	
+	_	Conditions	Continuity	
Terminal				
3	5	12 V direct current supply between terminals 1 and 2	Existed	
		No current supply	Not existed	



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace high pressure fuel pump relay.

EC

Α

D

Е

Н

1

K

L

M

Ν

0

IGNITION SIGNAL

Component Function Check

INFOID:0000000011461829

1. INSPECTION START

Turn ignition switch OFF, and restart engine.

Does the engine start?

YES >> GO TO 2.

NO >> Proceed to <u>EC-542</u>, "<u>Diagnosis Procedure</u>".

2.ignition signal function

(E)With CONSULT

- 1. Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 2. Check that each circuit produces a momentary engine speed drop.

⋈Without CONSULT

- 1. Let engine idle.
- 2. Check the voltage signal between ECM harness connector and ground with an oscilloscope.

ECM					
+ -			Voltage signal		
Connector	Terminal	Connector	Terminal		
	82				
	86			100mSec/div	
5 00	90	E18	407		
F26			E18	E18 127	=
	94				
				2V/div JPBIA4733ZZ	

NOTE:

The pulse cycle changes depending on rpm at idle.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-542, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461830

1. CHECK CONDENSER POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect condenser harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between condenser harness connector and ground.

•	+		
Cond	enser	_	Voltage
Connector	Terminal		
F13	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. CHECK CONDENSER POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between IPDM E/R harness connector and condenser harness connector.

IGNITION SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

-	-		+			
denser Contir	Condenser		Condenser		M E/R	IPDI
Terminal	r Ter	Connecto	Terminal	Connector		
1 Exist		F13	61	E15		

4. Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check condenser ground circuit

1. Turn ignition switch OFF.

Check the continuity between Condenser harness connector and ground.

	+		
Conc	lenser	_	Continuity
Connector	Terminal		
F13	2	Ground	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK CONDENSER

Check the condenser. refer to EC-545, "Component Inspection (Condenser)".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace condenser.

5.CHECK IGNITION COIL POWER SUPPLY

- Reconnect all harness connectors disconnected.
- 2. Disconnect ignition coil harness connector.
- Turn ignition switch ON.
- Check the voltage between ignition coil harness connector and ground.

	+			
	Ignition coil			Voltage
Cylinder	Connector	Terminal		
1	F33	3		
2	F34	3	Ground	Battery voltage
3	F35	3	Giouna	Ballery Vollage
4	F36	3		

Is the inspection result normal?

YES >> GO TO 6.

NO >> Perform the trouble diagnosis for power supply circuit.

6. CHECK IGNITION COIL GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Check the continuity between ignition coil harness connector and ground.

EC-543 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Ν

	+			
	Ignition coil	_	Continuity	
Cylinder	Connector	Terminal		
1	F33	2		
2	F34	2	Ground	Existed
3	F35	2	Giouna	Existed
4	F36	2		

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK IGNITION COIL OUTPUT SIGNAL CIRCUIT

- 1. Disconnect ECM harness connector.
- 2. Check the continuity between ECM harness connector and ignition coil harness connector.

+			-		
Ignition coil		ECM		Continuity	
Cylinder	Connector	Terminal	Connector	Terminal	
1	F33	1		82	
2	F34	1	F26	86	Existed
3	F35	1	120	90	LAISIEU
4	F36	1		94	

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

8.CHECK IGNITION COIL WITH POWER TRANSISTOR

Check the ignition coil with power transistor. Refer to <u>EC-544</u>, "Component Inspection (Ignition Coil with <u>Power Transistor)"</u>.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace malfunctioning ignition coil with power transistor. Refer to EM-59, "Exploded View".

Component Inspection (Ignition Coil with Power Transistor)

INFOID:0000000011461831

1. CHECK IGNITION COIL WITH POWER TRANSISTOR-I

- 1. Turn ignition switch OFF.
- Disconnect ignition coil harness connector.
- 3. Check resistance between ignition coil terminals as per the following.

Ignition coil with	power transistor		
+ -		Resistance [Ω at 25°C (77°F)]	
Terminal			
1	2	Except 0 or ∞	
3		Except 0	
2	3	Ελύθρι 0	

Is the inspection result normal?

YES >> GO TO 2.

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace malfunctioning ignition coil with power transistor. Refer to EM-59, "Exploded View".

2.CHECK IGNITION COIL WITH POWER TRANSISTOR-II

CAUTION:

Do the following procedure in the place where ventilation is good without the combustible.

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Remove fuel pump fuse in IPDM E/R to release fuel pressure.

NOTE:

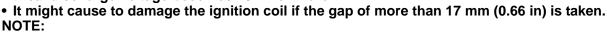
Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

- 4. Start engine.
- 5. After engine stalls, crank it two or three times to release all fuel pressure.
- 6. Turn ignition switch OFF.
- Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils. Refer to <u>EM-59</u>, "<u>Exploded View</u>".
- Remove ignition coil and spark plug of the cylinder to be checked. Refer to .0EM-59, "Exploded View"
- 9. Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
- 10. Connect spark plug and harness connector to ignition coil.
- 11. Fix ignition coil using a rope etc. with gap of 13 17 mm (0.52 0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
- 12. Crank engine for about three seconds, and check whether spark is generated between the spark plug and the grounded metal portion.



CAUTION:

 During the operation, always stay 0.5 cm (19.7 in) away from the spark plug and the ignition coil. Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.



When the gap is less than 13 mm (0.52 in), the spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning ignition coil with power transistor. Refer to EM-59, "Exploded View".

Component Inspection (Condenser)

INFOID:0000000011461832

1. CHECK CONDENSER

- Turn ignition switch OFF.
- Disconnect condenser harness connector.
- 3. Check resistance between condenser terminals as per the following.

Condenser		
+	_	Resistance
Terminal		
1	2	Above 1 MΩ [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace Condenser.

13 - 17 mm (0.52-0.66 in) Grounded metal portion (Cylinder head, cylinder block, etc.)

Α

EC

D

Е

F

K

M

N

ELECTRICAL LOAD SIGNAL

Description INFOID:0000000011461833

The electrical load signal (Headlamp switch signal, rear window defogger switch signal, etc.) is transferred via the CAN communication line.

Component Function Check

INFOID:0000000011461834

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Select "LOAD SIGNAL" and check indication as per the following conditions.

Monitor item	Condition	Indication	
LOAD SIGNAL Rear window defogger switch		ON	ON
LOAD SIGNAL	real wildow delogger switch	OFF	OFF

Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to <u>EC-546</u>, "<u>Diagnosis Procedure</u>".

2.check lighting switch function

(P)With CONSULT-III

Check "LOAD SIGNAL" indication as per the following conditions.

Monitor item	Con	Indication	
LOAD SIGNAL	Lighting switch	ON at 2nd position	ON
		OFF	OFF

Is the inspection result normal?

YES >> GO TO 3.

NO >> Proceed to EC-546, "Diagnosis Procedure".

3.CHECK HEATER FAN CONTROL SWITCH FUNCTION

(P)With CONSULT

Select "HEATER FAN SW" and check indication as per the following conditions.

Monitor item	Condition	Indication	
HEATER FAN	Heater fan control switch	ON	ON
SW	Heater ian control switch	OFF	OFF

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-546</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000011461835

1. INSPECTION START

Confirm the malfunctioning circuit (rear window defogger, headlamp or heater fan). Refer to <u>EC-546, "Component Function Check"</u>.

Which circuit is related to the incident?

Rear window defogger>>GO TO 2.

Headlamp>>GO TO 3.

Heater fan>>GO TO 4.

ELECTRICAL LOAD SIGNAL

ELECTRICAL LOAD SIGNAL		
< DTC/CIRCUIT DIAGNOSIS >	[MR FOR NISMO RS MODELS]	
2. CHECK REAR WINDOW DEFOGGER SYSTEM		А
Check the rear window defogger system. Refer to <u>DEF-18</u> , "Work Flow".	_	
>> INSPECTION END		EC
3.CHECK HEADLAMP SYSTEM		
Check the headlamp system. Refer to EXL-46. "Work Flow".		С
>> INSPECTION END		
4.CHECK HEATER FAN CONTROL SYSTEM		D
Check the heater fan control system. Refer to HAC-43, "Work Flow".		
>> INSPECTION END		Е
>> INSPECTION END		
		F
		G
		Н
		J
		K
		L
		M
		Ν
		0

Ρ

COOLING FAN

Component Function Check

INFOID:0000000011461836

1. CHECK COOLING FAN FUNCTION

(II) With CONSULT

- Turn ignition switch ON.
- Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Check that cooling fan speed varies according to the percentage.

- 1. Activate IPDM E/R auto active test and check cooling fan motors operation. Refer to PCS-11, "Diagnosis Description".
- 2. Check that cooling fan operates.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-548, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461837

1. CHECK COOLING FAN CONTROL MODULE POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect cooling fan control nodule harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between cooling fan control nodule harness connector and ground.

	+		
Cooling fan c	ontrol module	_	Voltage
Connector	Terminal		
E203	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5. NO >> GO TO 2.

2.CHECK COOLING FAN CONTROL MODULE POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect cooling fan relay harness connector.
- Check the continuity between cooling fan control nodule harness connector and cooling fan relay harness connector.

+		-		
Cooling fan o	ontrol module	Cooling fan relay		Continuity
Connector	Terminal	Connector	Terminal	
E203	3	E204	3	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK COOLING FAN RELAY POWER SUPPLY CIRCUIT

- 1. Disconnect IPDM E/R harness connector.
- 2. Check the continuity between cooling fan relay harness connector and IPDM E/R harness connector.

COOLING FAN

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

		1		1
+		_		
Cooling	fan relay	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E204	1	E17	67	Existed

EC

D

Е

F

Α

3. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK COOLING FAN RELAY

Check cooling fan relay. Refer to EC-550, "Component Inspection (Cooling Fan Relay)". Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Replace cooling fan relay. Refer to PG-8, "Standardized Relay".

5.CHECK COOLING FAN CONTROL MODULE GROUND CIRCUIT

Turn ignition switch OFF.

Check the continuity between cooling fan control nodule harness connector and ground.

	+		
Cooling fan o	control module	_	Continuity
Connector	Terminal		
E203	1	Ground	Existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK COOLING FAN CONTROL SIGNAL CIRCUIT

Disconnect IPDM E/R harness connector.

2. Check the continuity between cooling fan control nodule harness connector and IPDM E/R harness connector.

+		_		
Cooling fan o	control module	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E203	2	E17	72	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK COOLING FAN CONTROL MODULE OUTPUT SIGNAL CIRCUIT

- Reconnect all harness connectors disconnected.
- Disconnect cooling fan control module harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between cooling fan control module terminals and ground.

EC-549 Revision: 2014 October 2015 JUKE

N

< DTC/CIRCUIT DIAGNOSIS >

	+		
Cooling fan c	ontrol module	_	Voltage
Connector	Terminal		
E301	4	Ground	Battery voltage
E302	6	Giodila	Battery Voltage

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

8. CHECK COOLING FAN MOTORS -1 AND -2

Check the cooling fan motor. Refer to EC-550, "Component Inspection (Cooling Fan Motor)".

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace cooling motor. Refer to CO-18, "Exploded View".

Component Inspection (Cooling Fan Motor)

INFOID:0000000011461838

1. CHECK COOLING FAN MOTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect cooling fan control module harness connector.
- Supply cooling fan control module harness connector terminals with battery voltage as per the following, and check operation.

Cod	oling fan contro				
Motor	Connector	Terminal		Operation	
WOO	Connector	(+)	(-)		
1	E301	4	5	Cooling fan operates.	
2	E302	6	7	Cooling ian operates.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning cooling fan motor. Refer to CO-18, "Exploded View".

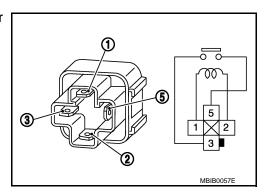
Component Inspection (Cooling Fan Relay)

INFOID:0000000011461839

1. CHECK COOLING FAN RELAY

- 1. Turn ignition switch OFF.
- 2. Remove cooling fan relay.
- 3. Check the continuity between cooling fan relay terminals under the following conditions.

Cooling	fan relay		
+	-	Conditions	Continuity
Terr	ninal		
3	5	12 V direct current supply between terminals 1 and 2	Existed
		No current supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace cooling fan relay.

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

Component Function Check

INFOID:0000000011461840

1. CHECK ORVR FUNCTION

Α

EC

D

Е

F

K

M

N

Check whether the following symptoms are present.

- · Fuel odor from EVAP canister is strong.
- Cannot refuel/Fuel odor from the fuel filler opening is strong while refueling.

Is any symptom present?

YES >> Proceed to EC-551, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011461841

1.INSPECTION START

Check whether the following symptoms are present.

A: Fuel odor from EVAP canister is strong.

B: Cannot refuel/Fuel odor from the fuel filler opening is strong while refueling.

Which symptom is present?

A >> GO TO 2.

B >> GO TO 8.

2. CHECK EVAP CANISTER

- 1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
- Weigh the EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

3.CHECK IF EVAP CANISTER IS SATURATED WITH WATER

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

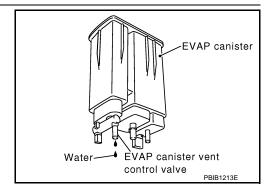
J

Check if water will drain from EVAP canister.

Does water drain from the EVAP canister?

YES >> GO TO 4.

NO >> GO TO 7.



4. REPLACE EVAP CANISTER

Replace EVAP canister with a new one.

>> GO TO 5.

5. CHECK DRAIN FILTER

Refer to EC-555, "Component Inspection (Drain filter)".

Is the inspection result normal?

OK >> GO TO 6.

NO >> Replace drain filter.

6.DETECT MALFUNCTIONING PART

Revision: 2014 October EC-551 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Check the EVAP hose between EVAP canister and vehicle frame for clogging or poor connection.

>> Repair or replace EVAP hose.

7. CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to EC-553, "Component Inspection (Refueling EVAP vapor cut valve)".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace refueling EVAP vapor cut valve with fuel tank.

8. CHECK EVAP CANISTER

- 1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
- Weigh the EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

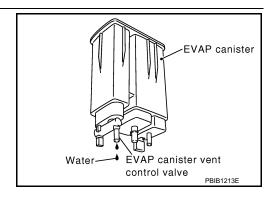
YES >> GO TO 9. NO >> GO TO 10.

9. CHECK IF EVAP CANISTER IS SATURATED WITH WATER

Check if water will drain from EVAP canister.

Does water drain from the EVAP canister?

YES >> GO TO 10. NO >> GO TO 13.



10. REPLACE EVAP CANISTER

Replace EVAP canister with a new one.

>> GO TO 11.

11. CHECK DRAIN FILTER

Refer to EC-555, "Component Inspection (Drain filter)".

Is the inspection result normal?

OK >> GO TO 12.

NO >> Replace drain filter.

12. DETECT MALFUNCTIONING PART

Check the EVAP hose between EVAP canister and vehicle frame for clogging or poor connection.

>> Repair or replace EVAP hose.

13. CHECK VENT HOSES AND VENT TUBES

Check hoses and tubes between EVAP canister and refueling control valve for clogging, kink, looseness and improper connection.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair or replace hoses and tubes.

14. CHECK RECIRCULATION LINE

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

EC

D

Е

Check recirculation line for clogging, dents and cracks.

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace fuel filler tube.

15. CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to EC-553, "Component Inspection (Refueling EVAP vapor cut valve)".

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace refueling EVAP vapor cut valve with fuel tank.

16. CHECK FUEL FILLER TUBE

Check fuel filler tube and hose connected to the fuel tank for clogging, dents and cracks.

Is the inspection result normal?

>> GO TO 17. YES

NO >> Replace fuel filler tube.

17.CHECK ONE-WAY FUEL VALVE-I

Check one-way valve for clogging.

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace one-way fuel valve with fuel tank.

18. CHECK ONE-WAY FUEL VALVE-II

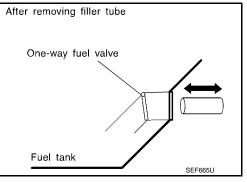
- Make sure that fuel is drained from the tank.
- Remove fuel filler tube and hose.
- Check one-way fuel valve for operation as per the following. When a stick is inserted, the valve should open, when removing stick it should close.

Do not drop any material into the tank.

Is the inspection result normal?

YES >> INSPECTION END

> >> Replace fuel filler tube or replace one-way fuel valve with fuel tank.



INFOID:0000000011461842

M

N

Р

Component Inspection (Refueling EVAP vapor cut valve)

1.INSPECTION START

NO

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK REFUELING EVAP VAPOR CUT VALVE

With CONSULT

- 1. Remove fuel tank. Refer to FL-17, "2WD: Removal and Installation".
- 2. Drain fuel from the tank as per the following:
- Remove fuel feed hose located on the fuel gauge retainer.
- Connect a spare fuel hose, one side to fuel gauge retainer where the hose was removed and the other side to a fuel container.
- Drain fuel using "FUEL PUMP RELAY" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Check refueling EVAP vapor cut valve for being stuck to close as per the following. Blow air into the refueling EVAP vapor cut valve (from the end of EVAP/ORVR line hose), and check that the air flows freely into the tank.
- Check refueling EVAP vapor cut valve for being stuck to open as per the following.

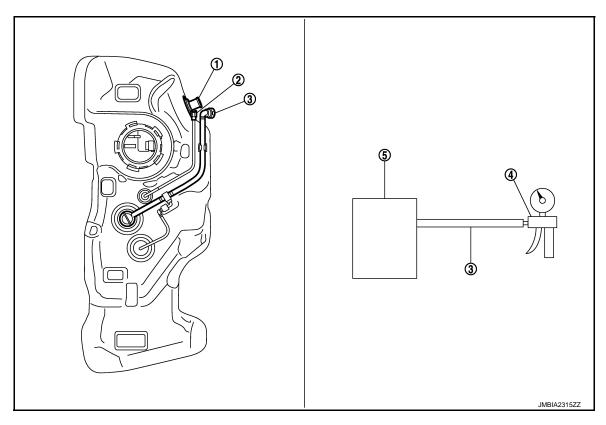
< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

- Connect vacuum pump to hose end.
- Remove fuel gauge retainer with fuel gauge unit.

Always replace O-ring with new one.

- Put fuel tank upside down.
- Apply vacuum pressure to hose end [-13.3 kPa (-0.136 kg/cm³, -1.93 psi)] with fuel gauge retainer remaining open and check that the pressure is applicable.



Filler tube

- 2. Recirculation line
- 3. EVAP/ORVR line

- 4. Vacuum/pressure handy pump
- 5. Fuel tank

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to FL-26, "2WD : Exploded View".

3.CHECK REFUELING EVAP VAPOR CUT VALVE

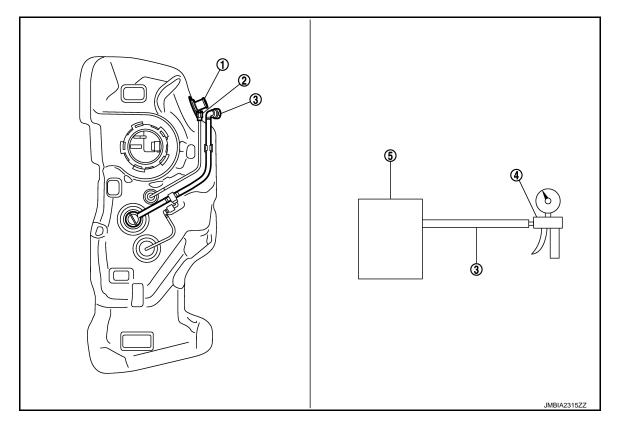
- 1. Remove fuel tank. Refer to FL-17, "2WD: Exploded View".
- 2. Drain fuel from the tank as per the following:
- Remove fuel gauge retainer.
- Drain fuel from the tank using a handy pump into a fuel container.
- Check refueling EVAP vapor cut valve for being stuck to close as per the following.
 Blow air into the refueling EVAP vapor cut valve (from the end of EVAP/ORVR line hose), and check that the air flows freely into the tank.
- 4. Check refueling EVAP vapor cut valve for being stuck to open as per the following.
- Connect vacuum pump to hose end.
- Remove fuel gauge retainer with fuel gauge unit.

Always replace O-ring with new one.

- Put fuel tank upside down.
- Apply vacuum pressure to hose end [-13.3 kPa (-0.136 kg/cm³, -1.93 psi)] with fuel gauge retainer remaining open and check that the pressure is applicable.

[MR FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >



- Filler tube
- 4. Vacuum/pressure handy pump
- 2. Recirculation line
- 5. Fuel tank

EVAP/ORVR line

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace refueling EVAP vapor cut valve with fuel tank .Refer to FL-26, "2WD : Exploded View".

Component Inspection (Drain filter)

INFOID:0000000011461843

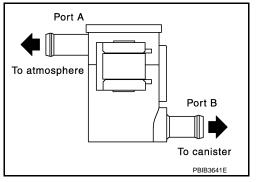
1. CHECK DRAIN FILTER

- 1. Check visually for insect nests in the drain filter air inlet.
- 2. Check visually for cracks or flaws in the appearance.
- 3. Check visually for cracks or flaws in the hose.
- 4. Blow air into port A and check that it flows freely out of port B.
- Block port B.
- 6. Blow air into port A and check that there is no leakage.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace drain filter.



Α

EC

D

Е

F

G

Н

843

M

Ν

0

REFRIGERANT PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

REFRIGERANT PRESSURE SENSOR

Component Function Check

INFOID:0000000011461844

1. CHECK REFRIGERANT PRESSURE SENSOR OVERALL FUNCTION

- 1. Start engine and warm it up to normal operating temperature.
- Turn A/C switch and blower fan switch ON.
- 3. Check the voltage between ECM harness connector and ground.

ECM			
Connector	+	_	Voltage
Connector	Teri		
F25	19	12	1.0 - 4.0V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-556, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461845

1. CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY

- 1. Turn ignition OFF.
- 2. Disconnect refrigerant pressure sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between refrigerant pressure sensor harness connector and ground.

	+		
Refrigerant pr	essure sensor	_	Voltage (Approx.)
Connector	Terminal		(11 /
E49	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between refrigerant pressure sensor harness connector and ECM harness connector.

+				
Refrigerant pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E49	3	F25	23	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3. CHECK REFRIGERANT PRESSURE SENSOR GROUND

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between refrigerant pressure sensor harness connector and ECM harness connector.

REFRIGERANT PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

	+							
	essure sensor	EC	CM	Continuity				
Connector	Terminal	Connector	Terminal	. Jonanany				
E49	1	F25	12	Existed				
. Also che	eck harness	for short to p	ower.					
	ction result n							
	GO TO 4.							
•		olace error-d	•					
				OR INPUT SI				
	he continuity	between E0	CM harness	connector a	nd refrigeran	nt pressure	sensor harness	s connec-
tor.								
	+							
	essure sensor	EC	CM	Continuity				
Connector	Terminal	Connector	Terminal	,				
E49	2	F25	19	Existed				
		for short to g						
	GO TO 5. Repair or rei	olace error-d	etected part	·s				
_		olace error-d	-	S.				
CHECK I	NTERMITTE	NT INCIDE	NT.					
		ent Incident"						
•	ction result n			5 (, 114	000 5	1 120 11		
		igerant press place error-d		Refer to HA	<u>C-96, "Explo</u>	oded View".		
110 //	rtopan or rep	Sidoo Ciroi u	cicoloa pari	.0.				

Revision: 2014 October EC-557 2015 JUKE

BRAKE PEDAL POSITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

BRAKE PEDAL POSITION SWITCH

Component Function Check

INFOID:0000000011461846

1.CHECK BRAKE PEDAL POSITION SWITCH FUNCTION

(II) With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "BRAKE SW1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "BRAKE SW1" indication as per the following conditions.

Monitor item	Condition		Indication
BRAKE SW1	Brake pedal	Slightly depressed	OFF
BIVARE SWI	Brake pedar	Fully released	ON

- Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector terminals as per the following.

Connector + - Terminal		Condition		Voltage (Approx.)		
						ninal
		E18	116	127	Brake pedal	Slightly depressed
L10	110 110 121		brake pedar	Fully released	Battery voltage	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-558, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011461847

1. CHECK BRAKE PEDAL POSITION SWITCH POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect brake pedal position switch harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between brake pedal position switch harness connector and ground.

+	-			
Brake pedal p	osition switch	_	Voltage	
Connector	Terminal			
E112	1	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK BRAKE PEDAL POSITION SWITCH INPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between brake pedal position switch harness connector and ECM harness connector.

+		-		
Brake pedal position switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E112	2	E18	116	Existed

BRAKE PEDAL POSITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK BRAKE PEDAL POSITION SWITCH

Check the brake pedal position switch. Refer to EC-559, "Component Inspection (Brake Pedal Position Switch)"

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace brake pedal position switch. Refer to BR-20, "Exploded View". NO

Component Inspection (Brake Pedal Position Switch)

INFOID:0000000011461848

1. CHECK BRAKE PEDAL POSITION SWITCH-I

- Turn ignition switch OFF.
- Disconnect brake pedal position harness connector. 2.
- Check the continuity between brake pedal position switch terminals as per the following conditions.

Brake pedal position switch					
+	+ -		Condition		
Terminals					
			Fully released	Existed	
1	2	Brake pedal	Slightly de- pressed	Not existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK BRAKE PEDAL POSITION SWITCH-II

- Adjust brake pedal position switch installation. Refer to BR-9, "Inspection and Adjustment".
- Check the continuity between brake pedal position switch terminals as per the following conditions.

Brake pedal p	Brake pedal position switch		Condition	
+	+ -			
Tern	Terminals			
			Fully released	Existed
1	2	Brake pedal	Slightly de- pressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace brake pedal position switch. Refer to BR-20, "Exploded View".

EC-559 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

Ν

CLUTCH PEDAL POSITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

CLUTCH PEDAL POSITION SWITCH

Component Function Check

INFOID:0000000011461849

1. CHECK FOR CLUTCH PEDAL POSITION SWITCH FUNCTION

- 1. Turn ignition switch ON.
- Check the voltage between ECM harness connector and ground.

ECM			Condition		V. II.
Connector + -		Voltage (Approx.)			
Connector	Teri	minal			,
E18	108	127	Clutch pedal	Slightly depressed	Battery voltage
LIO	100	121	Ciulcii peuai	Fully released	0V

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Proceed to <u>EC-560</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000011461850

1. CHECK CLUTCH PEDAL POSITION INPUT SIGNAL

- Turn ignition switch OFF.
- 2. Disconnect clutch pedal position switch harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between clutch pedal position switch harness connector and ground.

	+			
Clutch pedal	position switch	_	Voltage	
Connector	Connector Terminal			
E113	1	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.check clutch pedal position switch input signal circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connectors.
- 3. Check the continuity between clutch pedal position switch harness connector and ECM harness connector.

+		-		
Clutch pedal position switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E113	1	E18	108	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3. Check clutch pedal position switch ground circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connectors.
- 3. Check the continuity between clutch pedal position switch harness connector and ground

CLUTCH PEDAL POSITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

+					
Clutch pedal p	osition switch	_	Continuity		
Connector	Terminal				
E113	2	Ground	Existed		
. Also check I	narness for sh	ort to power.			
the inspection		<u> ?</u>			
YES >> GO NO >> Rep	_	error-detected p	orto		
	•	POSITION SWIT			
				4	
			o <u>EC-561, "Comp</u>	onent Inspection".	
the inspection YES >> Che			to GI-44, "Intermit	ttont Incident"	
				1, "Exploded View".	
component I	•				
omponent i	nspection				INFOID:0000000011461851
.CHECK CLU	TCH PEDAL I	POSITION SWIT	CH-I		
. Turn ignition	switch OFF.				
Disconnect	clutch pedal p		rness connector.		
Check the c	ontinuity betw	een clutch pedal	position switch te	erminals as per the follo	wing conditions.
Clutch pedal po	poition quitab				
+	DSITION SWITCH	Cor	ndition	Continuity	
Term	inal	-	idition	Continuity	
Tellii	ırıaı		Fully released	Existed	
1	2	Clutch pedal	Fully released Slightly depressed	Not existed	
the inequation	rocult normod	10	Slightly depressed	Not existed	
the inspection YES >> INS	<u>result normal</u> PECTION EN				
NO >> GO		D			
		POSITION SWIT	CH-II		
				12, "Inspection and Adju	uctmont"
				erminals as per the follo	
	,	•	•	•	Ü
Clutch pedal po	osition switch				
+	-	Cor	ndition	Continuity	
Term	inal	1			
		0	Fully released	Existed	
1	2	Clutch pedal	Slightly depressed	Not existed	
s the inspection	result normal	?		<u> </u>	
	PECTION EN				
			ch. Refer to CL-1	1, "Exploded View".	
- 1		•		•	

INFORMATION DISPLAY (ASCD)

< DTC/CIRCUIT DIAGNOSIS >

[MR FOR NISMO RS MODELS]

INFORMATION DISPLAY (ASCD)

Component Function Check

INFOID:0000000011461852

1. CHECK INFORMATION DISPLAY

- Start engine.
- Press ASCD MAIN switch on ASCD steering switch.
- 3. Drive the vehicle at more than 40 km/h (25 MPH).

CAUTION:

Always drive vehicle at a safe speed.

- 4. Press SET/- switch.
- Check that the reading of the speedometer shows the same value as the set speed indicated in the information display while driving the vehicle on a flat road.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-562</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000011461853

1.CHECK DTC

Check that DTC UXXXX, P0500 or P1574 is not displayed.

Is the inspection result normal?

YES >> GO TO 2.

NO-1 >> Perform trouble diagnosis for DTC UXXXX.

NO-2 >> Perform trouble diagnosis for DTC P0500. Refer to <u>EC-393, "EXCEPT FOR M/T MODELS : DTC Logic"</u>.

NO-3 >> Perform trouble diagnosis for DTC P1574. Refer to <u>EC-476, "DTC Logic"</u>.

2.CHECK DTC WITH COMBINATION METER

Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Perform trouble diagnosis for DTC indicated.

3.CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-60, "Removal and Installation".

NO >> Repair or replace error-detected parts.

MALFUNCTION INDICATOR LAMP

< DTC/CIRCUIT DIAGNOSIS:

IMR FOR NISMO RS MODELS1

< DTC/CIRCUIT DIAGNOSIS >	[MR FOR NISMO RS MODELS]	
MALFUNCTION INDICATOR LAMP	A	
Component Function Check	INFOID:000000011461854	
1. CHECK MIL FUNCTION	EC	
 Turn ignition switch ON. Check that MIL lights up. 		
Is the inspection result normal?	С	
YES >> INSPECTION END NO >> Proceed to <u>EC-563</u> , " <u>Diagnosis Procedure</u> ".		
Diagnosis Procedure	INFOID:000000011461855	
1.CHECK DTC	E	
Check that DTC UXXXX is not displayed.		
Is the inspection result normal? YES >> GO TO 2.	F	
NO >> Perform trouble diagnosis for DTC UXXXX.	r	
2.check dtc with meter		
Refer to MWI-21, "CONSULT Function".	G	
Is the inspection result normal? YES >> GO TO 3.		
YES >> GO TO 3. NO >> Perform trouble diagnosis for DTC indicated.	Н	
3. CHECK INTERMITTENT INCIDENT		
Refer to GI-44, "Intermittent Incident".	I	
Is the inspection result normal?		
YES >> Replace combination meter. Refer to MWI-60 , "Removal and NO >> Repair or replace error-detected parts.	Installation".	
	K	
	L	
	М	
	N	
	0	
	Р	

SYMPTOM DIAGNOSIS

ENGINE CONTROL SYSTEM

Symptom Table

SYSTEM — BASIC ENGINE CONTROL SYSTEM

SYMPTOM															
		HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page
	y symptom code	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	НА	
Fuel	Low pressure fuel pump circuit	1	1	2	3	2		2	2			3		2	EC-534
	Fuel pressure regulator system	3	3	4	4	4	4	4	4	4		4			EC-162
	Fuel injector circuit	1	1	2	3	2	4	2	2			2			EC-529
	Evaporative emission system	3	3	2	2	2	4	2	4	4		2			EC-574
	FRP sensor circuit High pressure fuel pump circuit	1	1	4	2	3			2			2			EC-308
Air	Positive crankcase ventilation sys-			4		3									EC-537
All	tem	3	3	4	4	4	4	4	4	4		4	1		EC-577
	Incorrect idle speed adjustment						1	1	1	1		1			EC-158
	Electric throttle control actuator	1	1	2	3	3	2	2	2	2		2		2	EC-503, EC-508
Ignition	Incorrect ignition timing adjustment	3	3	1	1	1		1	1			1			EC-573
	Ignition circuit	1	1	2	2	2		2	2			2			EC-542
Main po	wer supply and ground circuit	2	2	3	3	3		3	3		2	3			EC-183
Mass air	r flow sensor circuit	1			2										EC-234
Engine o	coolant temperature sensor circuit	•					3			3					EC-245
Air fuel r	ratio (A/F) sensor 1 circuit		1	2	3	2		2	2			2			EC-259, EC-263, EC-266, EC-288
Throttle position sensor circuit							2			2					EC-249, EC-319, EC-446, EC-447
Accelera	ator pedal position sensor circuit			3	2	1									EC-510, EC-513, EC-519

ENGINE CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[MR FOR NISMO RS MODELS]

						S	/MPT	ОМ							Δ
	HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page	A C D
Warranty symptom code	AA	AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА		
Heated oxygen sensor 2 circuit			6		6		6	6			5			EC-269, EC-275, EC-282	F
Knock sensor circuit			2								3			EC-337	G
Engine oil temperature sensor circuit			4		2						3			EC-316	
Engine oil pressure sensor circuit			4		4	3	3	3			3			EC-404	Н
Crankshaft position sensor (POS) circuit	2	2												EC-339	
Camshaft position sensor (PHASE) circuit	3	2												EC-342	
Turbocharger boost sensor circuit			3		3									EC-328	
Vehicle speed signal circuit		2	3		3						3			EC-393, EC-397, EC-523	J
ECM	2	2	3	3	3	3	3	3	3	3	3			EC-411, EC-412, EC-413, EC-414, EC-415, EC-416, EC-417	K
Intake valve timing control solenoid valve circuit		3	2		1	3	2	2	3		3			EC-192, EC-207	_
Exhaust valve timing control solenoid valve circuit		3	2		1	3	2	2	3		3			EC-195, EC-210	M
Exhaust valve timing control position sensor circuit	5	5	5	5	5		5	5			5			EC-426	N
Turbocharger boost control solenoid valve circuit			3		3									EC-205	
PNP signal circuit			3		3		3	3			3			EC-422	0
Refrigerant pressure sensor circuit		2				3			3		4			EC-556	
Cooling fan control module circuit Battery current sensor circuit	5	5	5	5	5	4	5	5	5	4	5		3	EC-548 EC-453, EC-456, EC-459, EC-462	Р
Starter relay circuit	3													EC-488	
Starter control relay circuit	3													EC-491	
Electrical load signal circuit							3							EC-546	

Revision: 2014 October EC-565 2015 JUKE

		SYMPTOM												
	HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page
Warranty symptom code	AA	AB	AC	AD	AE	AF	AG	AH	AJ	AK	AL	AM	HA	
Air conditioner circuit	2	2	3	3	3	3	3	3	3		3		2	HAC-43
ABS actuator and electric unit (control unit)			4											BRC-58

^{1 - 6:} The numbers refer to the order of inspection. (continued on next page)

SYSTEM — ENGINE MECHANICAL & OTHER

							S`	YMPT	ОМ						
		HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page
Warranty	symptom code	A A	AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА	
Fuel	Fuel tank	5													FL-21, FL-23
	Fuel piping			5	5	5		5	5			5			<u>EM-53</u>
	Vapor lock		5												_
	Valve deposit														_
	Poor fuel (Heavy weight gasoline, Low octane)	5		5	5	5		5	5			5			_

ENGINE CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[MR FOR NISMO RS MODELS]

		SYMPTOM														0
		(NO					HIGH					Α
		(EXCP. HA)		F		ACCELERATION					URE	z		(ii)		EC
				r spot	z	CELE					ERAT	IPT10	NOIL	CHARGE)		
		START/RESTART		SING/FLA ⁻	TONATIO)LE	HING	7	N TO IDLE	ER TEMPI	CONSUMPTION	CONSUMPTION	JNDER CH	Reference page	С
			: STALL	HESITATION/SURGING/FLAT	SPARK KNOCK/DETONATION	OF POWER/POOR	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE	SIVE FUEL	EXCESSIVE OIL C	Y DEAD (UNDER		D
		HARD/NO	ENGINE STALL	HESITA	SPARK	LACK 0	нен п	ROUGH	IDLING	SLOW/N	OVERH	EXCESSIVE	EXCES	BATTERY		Е
Warranty s	ymptom code	A A	AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА		F
Air	Air duct Air cleaner														EM-27 EM-27	
	Air leakage from air duct (Mass air flow sensor — electric throttle control actuator)	5	5	5	5	5	5	5	5	5		5			EM-29	G H
	Air leakage from intake manifold/ Collector/Gasket															
Cranking	Battery	1	1	1		1		1	1					1	PG-116	ı
	Generator circuit Starter circuit	3								-					CHG-8 STR-5	
	Signal plate	6										1			EM-114	J
	PNP signal	4													TM-24, TM-323	K
Engine	Cylinder head	5	5	5	5	5		5	5			5			EM-100	
	Cylinder head gasket									-	4		3	-		I
	Cylinder block															_
	Piston												4			
	Piston ring	6	6	6	6	6		6	6			6			<u>EM-114</u>	M
	Connecting rod															
	Bearing Crankshaft															Ν
Valve	Timing chain														<u>EM-76</u>	
mecha-	Camshaft														EM-88	
nism	Intake valve timing control														EM-76	0
	Exhaust valve timing control	5	5	5	5	5		5	5			5			EM-76	
	Intake valve															Р
	Exhaust valve												3		<u>EM-88</u>	
Exhaust	Exhaust manifold/Tube/Muffler/ Gasket														EM-43, EX-10	
	Three way catalyst	5	5	5	5	5		5	5			5			EM-34, EM-36, EX-10	

							S'	YMPT	OM						
			ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page
Warranty	Warranty symptom code		AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА	
Lubrica- tion	Oil pan/Oil strainer/Oil pump/Oil filter/Oil gallery/Oil cooler	5	5	5	5	5		5	5			5			EM-47, EM-112, LU-14, LU- 18
	Oil level (Low)/Filthy oil														<u>LU-9</u>
Cooling	Radiator/Hose/Radiator filler cap														<u>CO-15</u>
	Thermostat									5					<u>CO-22</u>
	Water pump				_	_		_				_			<u>CO-20</u>
	Water gallery	5	5	5	5	5		5	5		4	5			<u>CO-24</u>
	Cooling fan														<u>CO-18</u>
	Coolant level (Low)/Contaminated coolant									5					<u>CO-9</u>
NVIS (Nis	san Vehicle Immobilizer System -	1	1												SEC-14

^{1 - 6:} The numbers refer to the order of inspection.

ASCD TEMPORARY RELEASE CANNOT BE PERFORMED BY THE CLUTCH PEDAL

< SYMPTOM DIAGNOSIS >

[MR FOR NISMO RS MODELS]

Α

ASCD TEMPORARY RELEASE CANNOT BE PERFORMED BY THE CLUTCH PEDAL

Diagnosis Procedure	EC
1. CHECK DTC WITH ECM	
Check that DTC is not displayed.	С
Is the inspection result normal?	
YES >> GO TO 2. NO >> Perform trouble diagnosis relevant to DTC indicated.	D
2. CHECK CLUTCH PEDAL POSITION SWITCH	D
Refer to EC-560, "Component Function Check".	
Is the inspection result normal?	Е
YES >> GO TO 3. NO >> Repair or replace malfunctioning part.	
3. CHECK INTERMITTENT INCIDENT	F
Refer to GI-44, "Intermittent Incident".	-
	G
>> INSPECTION END	
	Н
	I
	J
	K
	17
	L
	M
	Ν
	0
	Р

INFORMATION DISPLAY IS MALFUNCTIONING

< SYMPTOM DIAGNOSIS >

[MR FOR NISMO RS MODELS]

INFORMATION DISPLAY IS MALFUNCTIONING

Diagnosis Procedure

INFOID:0000000011461858

1. CHECK DTC WITH ECM

Check that DTC is not displayed.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform trouble diagnosis relevant to DTC indicated.

2. CHECK INFORMATION DISPLAY (ASCD)

Refer to EC-562, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning part.

3. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

>> INSPECTION END

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MR FOR NISMO RS MODELS]

NORMAL OPERATING CONDITION

Description INFOID:0000000011461859

FUEL CUT CONTROL (AT NO LOAD AND HIGH ENGINE SPEED)

If the engine speed is above 2,500 rpm under no load (for example, the selector lever position is neutral and engine speed is over 2,500 rpm) fuel will be cut off after some time. The exact time when the fuel is cut off varies based on engine speed.

Fuel cut will be operated until the engine speed reaches 2,000 rpm, then fuel cut will be cancelled. **NOTE:**

This function is different from deceleration control listed under direct injection gasoline system, <u>EC-50</u>, <u>"DIRECT INJECTION GASOLINE SYSTEM : System Description"</u>.

EC

Α

С

D

Е

F

G

Н

J

K

M

L

Ν

0

PERIODIC MAINTENANCE

IDLE SPEED

Inspection INFOID:0000000011461860

1. CHECK IDLE SPEED

With CONSULT

Check idle speed in "DATA MONITOR" mode of "ENGINE" using CONSULT.

Check idle speed with Service \$01 of GST.

>> INSPECTION END

IGNITION TIMING

< PERIODIC MAINTENANCE >

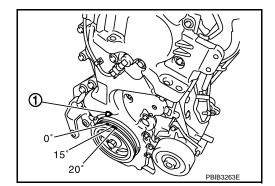
[MR FOR NISMO RS MODELS]

IGNITION TIMING

Inspection INFOID:000000011461861

1. CHECK IGNITION TIMING

- 1. Attach timing light to the ignition coil No.1 harness.
- 2. Check ignition timing.
 - 1 : Timing indicator
 - >> INSPECTION END



EC

Α

С

D

Е

F

G

Н

.

L

K

M

Ν

0

EVAPORATIVE EMISSION SYSTEM

< PERIODIC MAINTENANCE >

[MR FOR NISMO RS MODELS]

EVAPORATIVE EMISSION SYSTEM

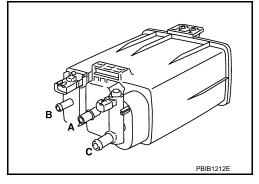
Inspection INFOID:0000000011461862

EVAP CANISTER

1. CHECK EVAP CANISTER

- 1. Block port (B).
- 2. Blow air into port (A) and check that it flows freely out of port (C).
- 3. Release blocked port (B).
- 4. Apply vacuum pressure to port (B) and check that vacuum pressure exists at the ports (A) and (C).
- 5. Block port (A) and (B).
- 6. Apply pressure to port (C) and check that there is no leakage.





EVAP LEAK CHECK

Inspection INFOID:0000000011461863

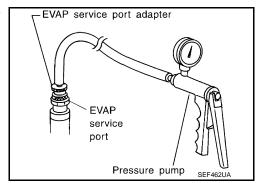
CAUTION:

- Do not use compressed air or a high pressure pump.
- Do not exceed 4.12 kPa (0.042 kg/cm², 0.6 psi) of pressure in EVAP system. NOTE:
- Do not start engine.
- Improper installation of EVAP service port adapter [commercial service tool: (J-41413-OBD)] to the EVAP service port may cause a leak.

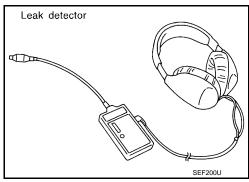
1.EVAP LEAK CHECK

(P)With CONSULT

1. Install EVAP service port adapter [commercial service tool: (J-41413-OBD)] and pressure pump to EVAP service port.

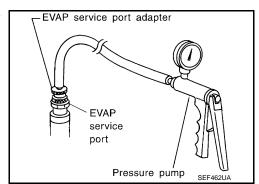


- 2. Turn ignition switch ON.
- 3. Select the "EVAP SYSTEM CLOSE" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 4. Touch "START". A bar graph (Pressure indicating display) will appear on the screen.
- Apply positive pressure to the EVAP system until the pressure indicator reaches the middle of the bar graph.
- Remove EVAP service port adapter [commercial service tool: (J-41413-OBD)] and hose with pressure pump.
- Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to <u>EC-65</u>, "EVAPORATIVE EMISSION SYSTEM: System Description".



⋈Without CONSULT

 Install EVAP service port adapter [commercial service tool: (J-41413-OBD)] and pressure pump to EVAP service port.



EC

Α

D

Е

F

K

L

M

Ν

С

Ρ

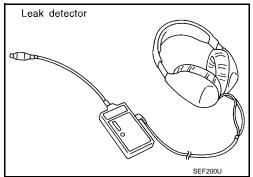
EVAP LEAK CHECK

< PERIODIC MAINTENANCE >

[MR FOR NISMO RS MODELS]

- 2. Apply battery voltage between the terminals of EVAP canister vent control valve to make a closed EVAP system.
- 3. To locate the leak, deliver positive pressure to the EVAP system until pressure gauge points reach 1.38 to 2.76 kPa (0.014 to 0.028 kg/cm², 0.2 to 0.4 psi).
- 4. Remove EVAP service port adapter [commercial service tool: (J-41413-OBD)] and hose with pressure pump.
- 5. Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to <u>EC-65</u>, "EVAPORATIVE EMISSION SYSTEM: System Description".

>> INSPECTION END



POSITIVE CRANKCASE VENTILATION

< PERIODIC MAINTENANCE >

[MR FOR NISMO RS MODELS]

POSITIVE CRANKCASE VENTILATION

Inspection INFOID:0000000011461864

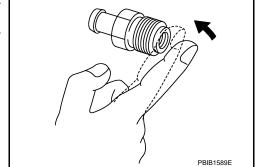
1. CHECK PCV VALVE

With engine running at idle, remove PCV valve from rocker cover. A properly working valve makes a hissing noise as air passes through it. A strong vacuum should be felt immediately when a finger is placed over valve inlet.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace PCV valve. Refer to EM-59, "Exploded View".



EC

Α

С

D

Е

F

G

Н

Κ

L

M

Ν

0

Р

REMOVAL AND INSTALLATION

ECM

Removal and Installation

INFOID:0000000011461865

CAUTION:

Perform ADDITIONAL SERVICE WHEN REPLACING ECM. Refer to EC-153, "Work Procedure"

REMOVAL

- 1. Remove fusible link bracket. Keep a service area.
- 2. Disconnect ECM harness connectors. Refer to PG-5, "Harness Connector".
- 3. Remove ECM mounting nuts, and then remove ECM.

INSTALLATION

Install in the reverse order of removal.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[MR FOR NISMO RS MODELS]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Idle Speed INFOID:0000000011461866

Transmission	Condition	Specification
CVT	No load* (in P or N position)	650 ± 50 rpm
M/T	No load* (in Neutral position)	600 ± 50 rpm

*: Under the following conditions

· A/C switch: OFF

· Electric load: OFF (Lights, heater fan & rear window defogger)

· Steering wheel: Kept in straight-ahead position

Ignition Timing

INFOID:0000000011461867

Transmission	Condition	Specification
CVT	No load* (in P or N position)	6 ± 2° BTDC
M/T	No load* (in Neutral position)	8 ± 2° BTDC

^{*:} Under the following conditions

· A/C switch: OFF

· Electric load: OFF (Lights, heater fan & rear window defogger)

· Steering wheel: Kept in straight-ahead position

Calculated Load Value

Condition	Specification (Using CONSULT or GST)
At idle	5 – 35 %
At 2,500 rpm	5 – 35 %

Mass Air Flow Sensor

INFOID:0000000011461869

Supply voltage	Battery voltage (11 – 14 V)	
Output voltage at idle	0.9 – 1.2V*	
Mass air flow (Using CONSULT or GST)	1.0 – 4.0 g/s at idle* 2.0 – 10.0 g/s at 2,500 rpm*	

^{*:} Engine is warmed up to normal operating temperature and running under no load.

EC-579 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

INFOID:0000000011461868

M

Ν

Ρ

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the "SRS AIR BAG" and "SEAT BELT" of this Service Manual.

WARNING:

Always observe the following items for preventing accidental activation.

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision that would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see "SRS AIR BAG".
- Never use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

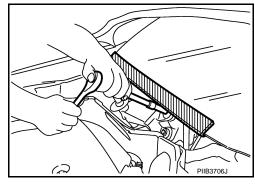
Always observe the following items for preventing accidental activation.

- When working near the Air Bag Diagnosis Sensor Unit or other Air Bag System sensors with the
 ignition ON or engine running, never use air or electric power tools or strike near the sensor(s) with
 a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing
 serious injury.
- When using air or electric power tools or hammers, always switch the ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution for Procedure without Cowl Top Cover

INFOID:0000000011610710

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc to prevent damage to windshield.



Precautions For Xenon Headlamp Service

INFOID:0000000011610711

WARNING:

Comply with the following warnings to prevent any serious accident.

- Disconnect the battery cable (negative terminal) or the power supply fuse before installing, removing, or touching the xenon headlamp (bulb included). The xenon headlamp contains high-voltage generated parts.
- Never work with wet hands.
- Check the xenon headlamp ON-OFF status after assembling it to the vehicle. Never turn the xenon headlamp ON in other conditions. Connect the power supply to the vehicle-side connector.

(Turning it ON outside the lamp case may cause fire or visual impairments.)

Never touch the bulb glass immediately after turning it OFF. It is extremely hot.

CAUTION:

Comply with the following cautions to prevent any error and malfunction.

- Install the xenon bulb securely. (Insufficient bulb socket installation may melt the bulb, the connector, the housing, etc. by high-voltage leakage or corona discharge.)
- Never perform HID circuit inspection with a tester.
- Never touch the xenon bulb glass with hands. Never put oil and grease on it.
- Dispose of the used xenon bulb after packing it in thick vinyl without breaking it.
- Never wipe out dirt and contamination with organic solvent (thinner, gasoline, etc.).

Precautions for Removing Battery Terminal

 When removing the 12V battery terminal, turn OFF the ignition switch and wait at least 30 seconds.

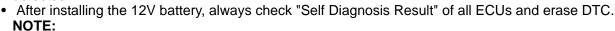
NOTE:

ECU may be active for several tens of seconds after the ignition switch is turned OFF. If the battery terminal is removed before ECU stops, then a DTC detection error or ECU data corruption may occur.

• For vehicles with the 2-batteries, be sure to connect the main battery and the sub battery before turning ON the ignition switch.

NOTE:

If the ignition switch is turned ON with any one of the terminals of main battery and sub battery disconnected, then DTC may be detected.



The removal of 12V battery may cause a DTC detection error.

On Board Diagnostic (OBD) System of Engine and CVT

The ECM has an on board diagnostic system. It will light up the malfunction indicator lamp (MIL) to warn the driver of a malfunction causing emission deterioration.

CAUTION:

- Be sure to turn the ignition switch OFF and disconnect the negative battery cable before any repair or inspection work. The open/short circuit of related switches, sensors, solenoid valves, etc. will cause the MIL to light up.
- Be sure to connect and lock the connectors securely after work. A loose (unlocked) connector will
 cause the MIL to light up due to the open circuit. (Be sure the connector is free from water, grease,
 dirt, bent terminals, etc.)
- Certain systems and components, especially those related to OBD, may use a new style slide-locking type harness connector. For description and how to disconnect, refer to <u>PG-5</u>, "<u>Harness Connector</u>".
- Be sure to route and secure the harnesses properly after work. The interference of the harness with a bracket, etc. may cause the MIL to light up due to the short circuit.
- Be sure to connect rubber tubes properly after work. A misconnected or disconnected rubber tube
 may cause the MIL to light up due to the malfunction of the EVAP system or fuel injection system,
 etc.
- Be sure to erase the unnecessary malfunction information (repairs completed) from the ECM and TCM (Transmission control module) before returning the vehicle to the customer.

BATTERY

INFOID:0000000011797475

D

Α

EC

Е

F

G

Н

INFOID:0000000011734332

K

L

M

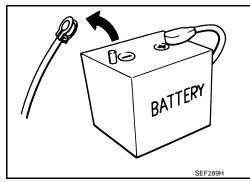
Ν

Р

INFOID:0000000011734333

General Precautions

- Always use a 12 volt battery as power source.
- Do not attempt to disconnect battery cables while engine is running.
- Before connecting or disconnecting the ECM harness connector, turn ignition switch OFF and disconnect negative battery cable. Failure to do so may damage the ECM because battery voltage is applied to ECM even if ignition switch is turned OFF.
- Before removing parts, turn ignition switch OFF and then disconnect battery ground cable.



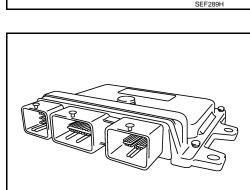
- Do not disassemble ECM.
- If a battery cable is disconnected, the memory will return to the ECM value.

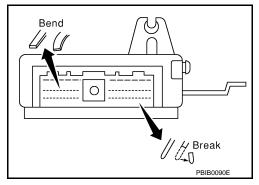
The ECM will now start to self-control at its initial value. Engine operation can vary slightly when the terminal is disconnected. However, this is not an indication of a malfunction. Do not replace parts because of a slight variation.

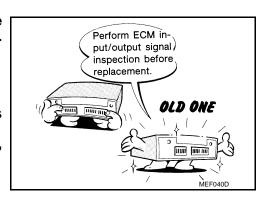
- If the battery is disconnected, the following emission-related diagnostic information will be lost within 24 hours.
- Diagnostic trouble codes
- 1st trip diagnostic trouble codes
- Freeze frame data
- 1st trip freeze frame data
- System readiness test (SRT) codes
- Test values
- When connecting or disconnecting pin connectors into or from ECM, take care not to damage pin terminals (bend or break).

Make sure that there are not any bends or breaks on ECM pin terminal, when connecting pin connectors.

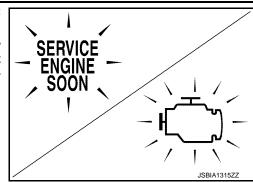
- Securely connect ECM harness connectors.
 A poor connection can cause an extremely high (surge) voltage to develop in coil and condenser, thus resulting in damage to ICs.
- Keep engine control system harness at least 10 cm (4 in) away from adjacent harness, to prevent engine control system malfunctions due to receiving external noise, degraded operation of ICs, etc.
- Keep engine control system parts and harness dry.
- Before replacing ECM, perform ECM Terminals and Reference Value inspection and make sure ECM functions properly. Refer to EC-668, "Reference Value".
- Handle mass air flow sensor carefully to avoid damage.
- · Do not clean mass air flow sensor with any type of detergent.
- Do not disassemble electric throttle control actuator.
- Even a slight leak in the air intake system can cause serious incidents.
- Do not shock or jar the camshaft position sensor (PHASE), crankshaft position sensor (POS).



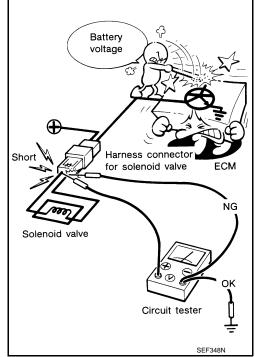




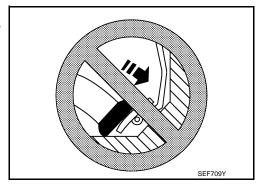
 After performing each TROUBLE DIAGNOSIS, perform DTC CONFIRMATION PROCEDURE or Component Function Check. The DTC should not be displayed in the DTC Confirmation Procedure if the repair is completed. The Component Function Check should be a good result if the repair is completed.



 When measuring ECM signals with a circuit tester, never allow the two tester probes to contact.
 Accidental contact of probes will cause a short circuit and damage the ECM power transistor.



- Do not operate fuel pump when there is no fuel in lines.
- Tighten fuel hose clamps to the specified torque.
- Do not depress accelerator pedal when starting.
- Immediately after starting, do not rev up engine unnecessarily.
- Do not rev up engine just prior to shutdown.



EC

Α

D

C

Е

F

G

Н

|

K

L

M

Ν

0

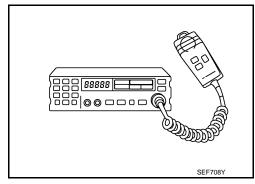
Ρ

PRECAUTIONS

< PRECAUTION >

[MR EXCEPT FOR NISMO RS MODELS]

- When installing C.B. ham radio or a mobile phone, be sure to observe the following as it may adversely affect electronic control systems depending on installation location.
- Keep the antenna as far as possible from the electronic control units.
- Keep the antenna feeder line more than 20 cm (8 in) away from the harness of electronic controls.
 Do not let them run parallel for a long distance.
- Adjust the antenna and feeder line so that the standing-wave ratio can be kept smaller.
- Be sure to ground the radio to vehicle body.



PREPARATION

[MR EXCEPT FOR NISMO RS MODELS]

PREPARATION

PREPARATION

Special Service Tools

INFOID:0000000011610713

Α

EC

NOTE:

The actual shapes of TechMate tools may differ from those of special service tools illustrated here.

Tool number (TechMate No.) Tool name		Description
KV10117100 Heated oxygen sensor wrench		Loosening or tightening heated oxygen sensor 2 (AWD) and air fuel ratio sensor 1 For 22 mm (0.87 in) width hexagon nut
KV10114400 Heated oxygen sensor wrench	S-NT379 a S-NT636	Loosening or tightening heated oxygen sensor 2 (2WD models) a: For 22 mm (0.87 in) width hexagon nut
(J-44321) Fuel pressure gauge kit	LEC642	Checks fuel pressure
(J-44321-6) Fuel pressure adapter	LBIA0376E	Connects fuel pressure gauge to quick connector type fuel lines.
KV10120000 Fuel tube adapter		Measuring fuel pressure
	JSBIA0410ZZ	

[MR EXCEPT FOR NISMO RS MODELS]

Commercial Service Tools

INFOID:0000000011610714

Tool name (TechMate No.)		Description
Leak detector i.e.: (J-41416)	S-NT703	Locates the EVAP leak
EVAP service port adapter i.e.: (J-41413-OBD)	S-NT704	Applies positive pressure through EVAP service port
Fuel filler cap adapter i.e.: (MLR-8382)	S-NT815	Checks fuel tank vacuum relief valve opening pressure
Quick connector re- lease	PBIC0198E	Removing fuel tube quick connectors in engine room (Available in SEC. 164 of PARTS CATALOG: Par No. 16441 6N210)
Socket wrench	19 mm (0.75 in) More than 32 mm (1.26 in)	Removing and installing engine coolant temperature sensor

PREPARATION

< PREPARATION >

[MR EXCEPT FOR NISMO RS MODELS]

Tool name (TechMate No.)		Description	А
Oxygen sensor thread cleaner	a Mating surface shave cylinder	Reconditioning the exhaust system threads before installing a new oxygen sensor. Use with antiseize lubricant shown below. a: 18 mm diameter with pitch 1.5 mm for Zirconia Oxygen Sensor	EC
	FlutesAEM488	b: 12 mm diameter with pitch 1.25 mm for Tita- nia Oxygen Sensor	С
Anti-seize lubricant i.e.: (Permatex TM 133AR or equivalent meeting MIL specifica-		Lubricating oxygen sensor thread cleaning tool when reconditioning exhaust system threads.	D
tion MIL-A-907)			Е
	S-NT779		F

Н

Κ

L

 \mathbb{N}

Ν

0

Ρ

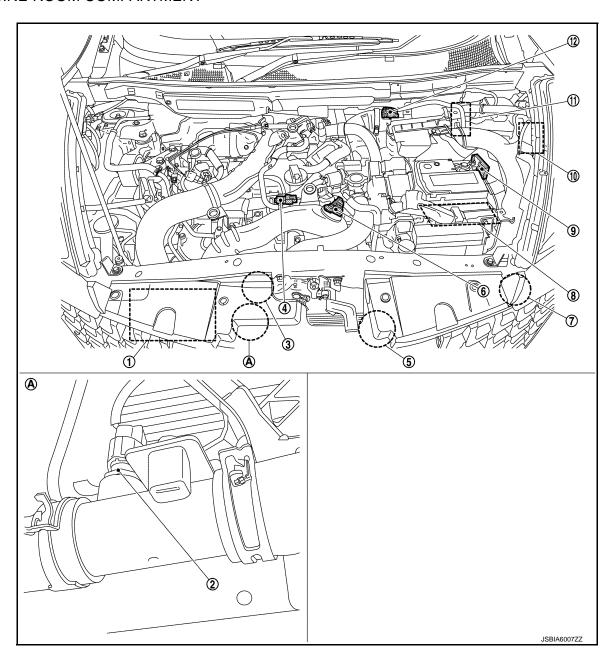
SYSTEM DESCRIPTION

COMPONENT PARTS ENGINE CONTROL SYSTEM

ENGINE CONTROL SYSTEM: Component Parts Location

INFOID:0000000011610715

ENGINE ROOM COMPARTMENT



- 1. Inter cooler
- 4. EVAP canister purge volume control 5. solenoid valve
- 7. Refrigerant pressure sensor
- 10. IPDM E/R

- 2. Engine coolant temperature sensor 2 3.
- Cooling fan motor
- 8. ECM
- 11. TCM

- Cooling fan control module
- 6. Turbocharger boost sensor
- 9. Battery current sensor
- 12. Mass air flow sensor

ENGINE COMPARTMENT

Α

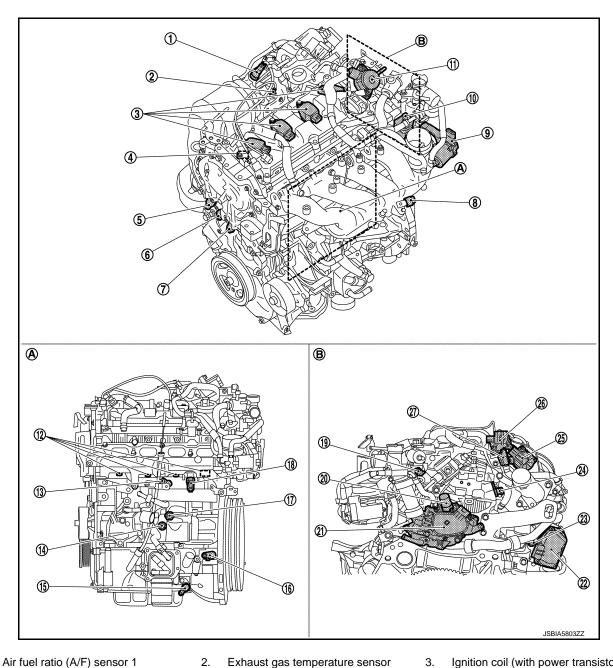
EC

D

M

Ν

Р



- Air fuel ratio (A/F) sensor 1
- PCV valve
- 7. Intake valve timing control solenoid
- 10. Intake manifold runner control valve
- Knock sensor
- Crankshaft position sensor 16.
- 19. Camshaft position sensor
- EGR volume control valve
- Electric wastegate control actuator
- Cylinder block left side

High pressure fuel pump 11.

valve

8.

- Engine oil temperature sensor
- 17. Engine oil pressure sensor
- Engine coolant temperature sensor

Exhaust valve timing control solenoid

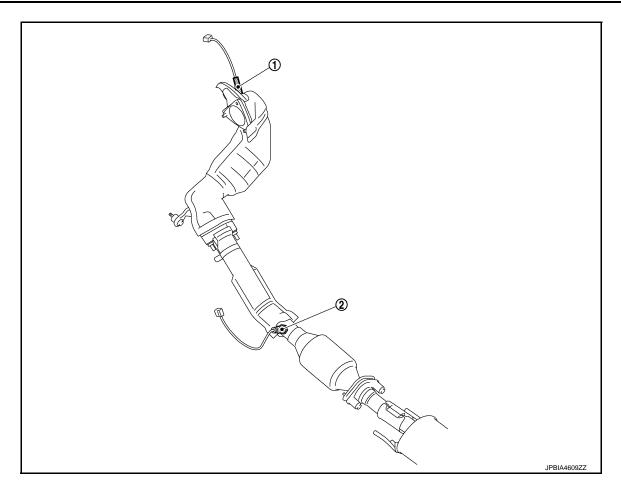
Manifold absolute pressure sensor

- 23. EGR temperature sensor
- 26. Turbocharger bypass control valve
- Engine rear end

- 3. Ignition coil (with power transistor)
- Intake valve timing intermediate lock 6. control solenoid valve
- 9. Electric throttle control actuator
- 12. Fuel injector
- 15. Engine oil pressure control solenoid valve
- 18. Fuel rail pressure sensor
- 21. Multi-way control valve
- Exhaust valve timing control position sensor
- 27. EGR pressure sensor

EXHAUST COMPARTMENT

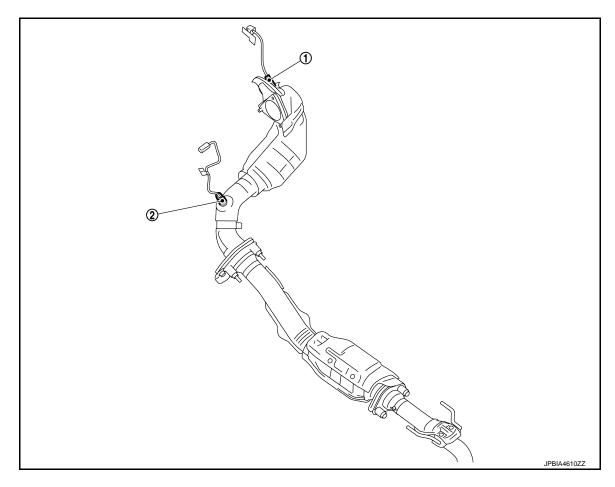
2WD



1. A/F sensor 1

2. Heated oxygen sensor 2

AWD



1. A/F sensor 1

2. Heated oxygen sensor 2

BODY COMPARTMENT

Α

EC

D

Е

F

G

Н

J

Κ

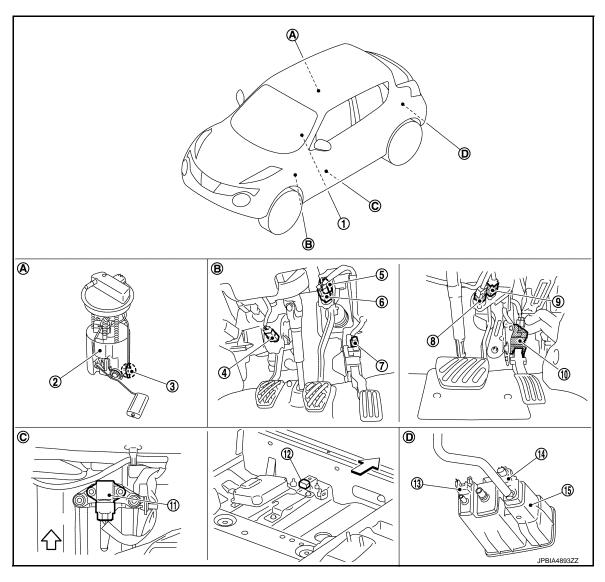
L

M

Ν

0

Р



- ASCD steering switch
- 4. Clutch pedal position switch (with M/T models)
- 7. Accelerator pedal position sensor (with M/T models)
- 10. Accelerator pedal position sensor (with CVT models)
- 13. EVAP control system pressure sensor 14.
- A. Under of right side second seat
- D. Fuel tank rear

- Fuel level sensor unit, fuel filter and fuel pump assembly
- 5. Brake pedal position switch (with M/T models)
- 8. Brake pedal position switch (with CVT models)
- 11. G sensor (with 2WD models)
- 14. EVAP canister vent control valve
- B. Periphery of pedals

- 3. Fuel tank temperature sensor
- 6. Stop lamp switch (with M/T models)
- 9. Stop lamp switch (with CVT models)
- G sensor (with AWD models)
- 15. EVAP canister
- C. Under of left side front seat

ENGINE CONTROL SYSTEM : Component Description

INFOID:0000000011610716

Component	Reference	
ECM	EC-594, "ECM"	
Accelerator pedal position sensor	EC-594, "Accelerator Pedal Position Sensor"	

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Component	Reference	
Electric throttle control actuator		
Throttle control motor	EC-594, "Electric Throttle Control Actuator"	
Throttle position sensor		
Ignition coil with power transistor	EC-595, "Ignition Coil With Power Transistor"	
Fuel injector	EC-596, "Fuel Injector"	
High pressure fuel pump	EC-596, "High Pressure Fuel Pump"	
Fuel rail pressure sensor	EC-597, "Fuel Rail Pressure Sensor"	
Low pressure fuel pump	EC-597, "Low Pressure Fuel Pump"	
Mass air flow sensor	EC-597, "Mass Air Flow Sensor (With Intake Air Temperature Sen-	
Intake air temperature sensor 1	<u>sor 1)"</u>	
Turbocharger		
Electric wastegate control actuator	EC-597, "Turbocharger"	
Turbocharger bypass control solenoid valve		
Turbocharger boost sensor	EC-598, "Turbocharger Boost Sensor (With Intake Air Tempera-	
Intake air temperature sensor 2	ture Sensor 2)"	
Engine coolant temperature sensor	EC-599, "Engine Coolant Temperature Sensor 1", EC-600, "Engine Coolant Temperature Sensor 2"	
Crankshaft position sensor	EC-601, "Crankshaft Position Sensor (POS)"	
Camshaft position sensor	EC-601, "Camshaft Position Sensor (PHASE)"	
Intake valve timing control solenoid valve	EC-601, "Intake Valve Timing Control Solenoid Valve"	
Exhaust valve timing control position sensor	EC-602, "Exhaust Valve Timing Control Position Sensor"	
Exhaust valve timing control solenoid valve	EC-602, "Exhaust Valve Timing Control Solenoid Valve"	
Air fuel ratio (A/F) sensor 1	EC-603, "Air Fuel Ratio (A/F) Sensor 1"	
Heated oxygen sensor 2	EC-604, "Heated Oxygen Sensor 2"	
Knock sensor	EC-605, "Knock Sensor"	
Engine oil pressure sensor	EC-605, "Engine Oil Pressure Sensor"	
Engine oil temperature sensor	EC-605, "Engine Oil Temperature Sensor"	
Cooling fan	EC-606, "Cooling Fan"	
EVAP canister purge volume control solenoid valve	EC-606, "EVAP Canister Purge Volume Control Solenoid Valve"	
Battery current sensor EC-607, "Battery Current Sensor (With Battery Tempe		
Battery temperature sensor	sor)"	
Malfunction indicator lamp (MIL)	EC-608, "Malfunction Indicator lamp (MIL)"	
Oil pressure warning lamp	EC-608, "Oil Pressure Warning Lamp"	
Refrigerant pressure sensor	EC-608, "Refrigerant Pressure Sensor"	
Stop lamp switch	FO 000 00 0, 11 0 0 1 0 0 1 0 0 1 0 0	
Brake pedal position switch	EC-609, "Stop Lamp Switch & Brake Pedal Position Switch"	
Clutch pedal position switch (M/T models)	EC-609, "Clutch Pedal Position Switch"	
ASCD steering switch	EC-609, "ASCD Steering Switch"	
Information display	EC-609, "Information Display"	
Exhaust gas temperature sensor	EC-600, "Exhaust Gas Temperature Sensor"	
G sensor	EC-603, "G Sensor"	
Manifold absolute pressure sensor	EC-608, "Manifold Absolute Pressure Sensor"	
Engine oil pressure control solenoid valve	EC-605, "Engine Oil Pressure Control Solenoid Valve"	
Intake valve timing intermediate lock control solenoid valve	FC-601 "Intake Valve Timing Intermediate Lock Control Solenoic	

COMPONENT PARTS

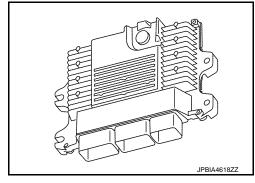
< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Component	Reference
EGR temperature sensor	EC-603, "EGR Temperature Sensor"
EGR pressure sensor	EC-603, "EGR Pressure Sensor"
EGR volume control valve	EC-602, "EGR Volume Control Valve"
Electric wastegate control actuator	EC-597, "Turbocharger"
Multi-way control valve	EC-599, "Multi-way Control Valve"
Intake manifold runner control valve	EC-602, "Intake Manifold Runner Control Valve"

ECM INFOID:0000000011610718

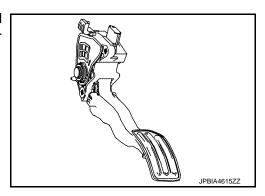
The ECM consists of a microcomputer and connectors for signal input and output and for power supply. The ECM controls the engine.



Accelerator Pedal Position Sensor

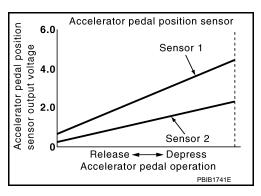
INFOID:0000000011610719

The accelerator pedal position sensor is installed on the upper end of the accelerator pedal assembly. The sensor detects the accelerator position and sends a signal to the ECM.



Accelerator pedal position sensor has two sensors. These sensors are a kind of potentiometers which transform the accelerator pedal position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the accelerator pedal and feed the voltage signals to the ECM. The ECM judges the current opening angle of the accelerator pedal from these signals and controls the throttle control motor based on these signals.

Idle position of the accelerator pedal is determined by the ECM receiving the signal from the accelerator pedal position sensor. The ECM uses this signal for the engine operation such as fuel cut.

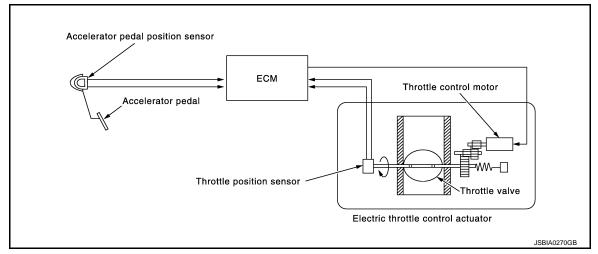


Electric Throttle Control Actuator

INFOID:0000000011610720

OUTLINE

Electric throttle control actuator consists of throttle body, throttle valve, throttle control motor and throttle position sensor.



THROTTLE CONTROL MOTOR RELAY

Power supply for the throttle control motor is provided to the ECM via throttle control motor relay. The throttle control motor relay is ON/OFF controlled by the ECM. When the ignition switch is turned ON, the ECM sends an ON signal to throttle control motor relay and battery voltage is provided to the ECM. When the ignition switch is turned OFF, the ECM sends an OFF signal to throttle control motor relay and battery voltage is not provided to the ECM.

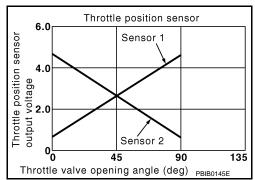
THROTTLE CONTROL MOTOR

The throttle control motor is operated by the ECM and it opens and closes the throttle valve.

The current opening angle of the throttle valve is detected by the throttle position sensor and it provides feedback to the ECM to control the throttle control motor to make the throttle valve opening angle properly in response to driving condition.

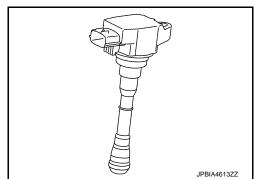
THROTTLE POSITION SENSOR

The throttle position sensor responds to the throttle valve movement. The throttle position sensor has two sensors. These sensors are a kind of potentiometers which transform the throttle valve position into output voltage, and emit the voltage signal to the ECM. In addition, these sensors detect the opening and closing speed of the throttle valve and feed the voltage signals to the ECM. The ECM judges the current opening angle of the throttle valve from these signals and the ECM controls the throttle control motor to make the throttle valve opening angle properly in response to driving condition.



Ignition Coil With Power Transistor

The ignition signal from the ECM is sent to and amplified by the power transistor. The power transistor turns ON and OFF the ignition coil primary circuit. This ON/OFF operation induces the proper high voltage in the coil secondary circuit.



EC

Α

П

Е

_

Н

K

_

M

N

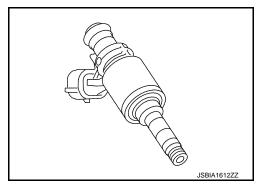
INFOID:0000000011610721

0

Ρ

Fuel Injector

For the fuel injector, a high pressure fuel injector is used and this enables a high-pressure fuel injection at a high voltage within a short time. The ECM is equipped with an injector driver unit and actuates the fuel injector at a high voltage (approximately 65 V at the maximum).



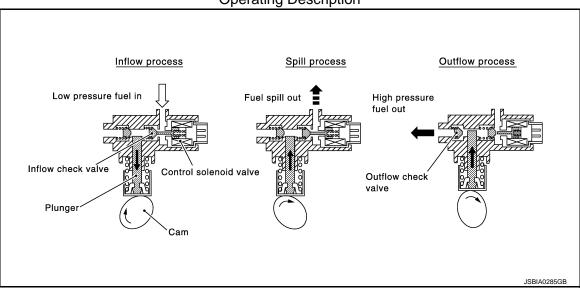
High Pressure Fuel Pump

INFOID:0000000011610723

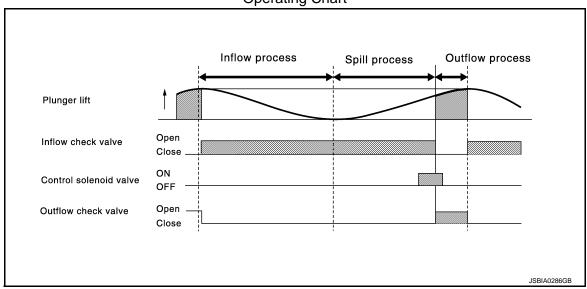
The high pressure fuel pump is activated by the exhaust camshaft.

ECM controls the high pressure fuel pump control solenoid valve built into the high pressure fuel pump and adjusts the amount of discharge by changing the suction timing of the low pressure fuel.

Operating Description



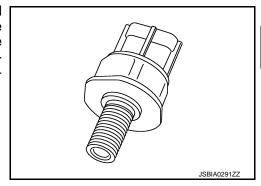
Operating Chart



[MR EXCEPT FOR NISMO RS MODELS]

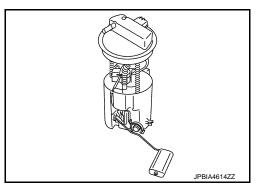
Fuel Rail Pressure Sensor

The fuel rail pressure (FRP) sensor is placed to the fuel rail and measures fuel pressure in the fuel rail. The sensor transmits voltage signal to the ECM. As the pressure increases, the voltage rises. The ECM controls the fuel pressure in the fuel rail by operating high pressure fuel pump. The ECM uses the signal from fuel rail pressure sensor as a feedback signal.



Low Pressure Fuel Pump

The low pressure fuel pump is integrated with a fuel pressure regulator and a fuel filter. This pump is build into the fuel tank.

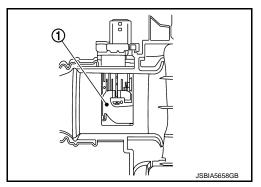


Mass Air Flow Sensor (With Intake Air Temperature Sensor 1)

MASS AIR FLOW SENSOR

The mass air flow sensor (MAF sensor) ① is placed in the stream of intake air. It measures the intake flow rate by measuring a part of the entire intake flow. The MAF sensor controls the temperature of the heater in sensing element to a certain amount.

The temperature distribution around the heater changes according to the increase in intake air volume. The change is detected by a thermistor and the air volume data is sent to ECM by the MAF sensor.



INTAKE AIR TEMPERATURE SENSOR 1

The intake air temperature sensor 1 (IAT sensor 1) is built-into the mass air flow sensor. The sensor detects intake air temperature and transmits a signal to the ECM.

The temperature sensing unit uses a thermistor which is sensitive to the change in temperature.

<Reference data>

Intake air temperature	Voltage*
25°C (77°F)	2.0 – 2.2 V
80°C (176°F)	3.0 – 3.2 V

^{*:} These data are reference values on the diagnosis tool.

Turbocharger INFOID:0000000011610728

TURBOCHARGER BOOST CONTROL

Revision: 2014 October EC-597 2015 JUKE

EC

Α

INFOID:0000000011610724

INFOID:0000000011610725

INFOID:0000000011610727

D

F

G

Н

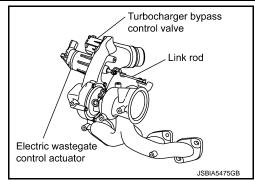
Κ

M

Ν

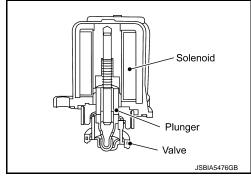
[MR EXCEPT FOR NISMO RS MODELS]

The electric wastegate control actuator operates based on a signal from ECM and adjusts the turbo charger boost control valve angle via link rod. The electronic control allows the turbocharger wastegate control valve to be opened even in non-supercharging regions. This reduces pumping losses and contributes to the fuel economy. In charging regions, wastegate valve angles are controlled by the electronic control with a high degree of accuracy.



TURBOCHARGER BYPASS CONTROL

When an operating signal received from ECM energizes the solenoid, the turbocharger bypass control valve opens the valve by sucking in the plunger. The electronically-controlled turbocharger bypass control valve quickly opens the bypass valve when releasing the accelerator pedal during driving under supercharge. This reduces surge sound generated by the back flow of supercharged air to the compressor fin.

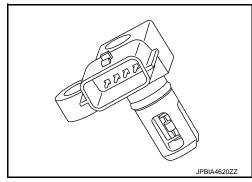


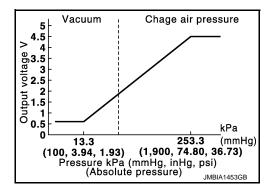
Turbocharger Boost Sensor (With Intake Air Temperature Sensor 2)

INFOID:0000000011610729

TURBOCHARGER BOOST SENSOR

The turbocharger boost sensor detects the pressure of the outlet side of the intercooler. When increasing the pressure, the output voltage of the sensor to the ECM increases.





INTAKE AIR TEMPERATURE SENSOR 2

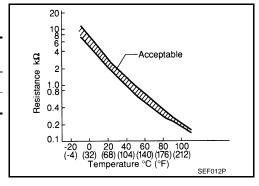
The intake air temperature sensor 2 is built-into turbocharger boost sensor. The sensor detects intake air temperature and transmits a signal to the ECM.

The temperature sensing unit uses a thermistor which is sensitive to the change in temperature. Electrical resistance of the thermistor decreases in response to the temperature rise.

<Reference data>

Intake air temperature [°C (°F)]	Voltage [*] (V)	Resistance (kΩ)
25 (77)	3.27-3.35	1.940 - 2.089
80 (176)	1.19-1.23	0.310 - 0.322

^{*:} These data are reference values and are measured between ECM terminals.



INFOID:0000000011610730

Α

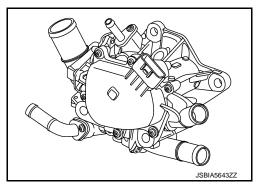
EC

D

Е

Multi-way Control Valve

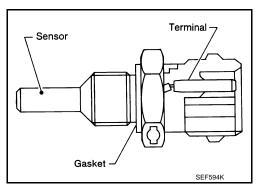
The multi-way control valve changes flow paths to Heater & EGR cooler, Oil cooler, and Radiator, according to coolant temperature and driving conditions.



INFOID:0000000011610731

Engine Coolant Temperature Sensor 1

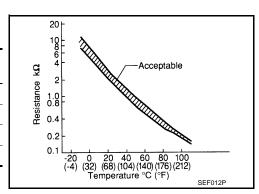
The engine coolant temperature sensor is used to detect the engine coolant temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine coolant temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine coolant temperature [°C (°F)]	Voltage [*] (V)	Resistance (kΩ)
-10 (14)	4.29-4.50	7.0 - 11.4
20 (68)	3.48-3.58	2.37 - 2.63
50 (122)	2.03-2.49	0.68 - 1.00
90 (194)	0.97-1.04	0.236 - 0.260

^{*:} These data are reference values and are measured between ECM terminals.



Revision: 2014 October EC-599 2015 JUKE

M

Ν

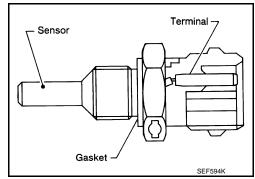
0

Ρ

Engine Coolant Temperature Sensor 2

INFOID:0000000011610732

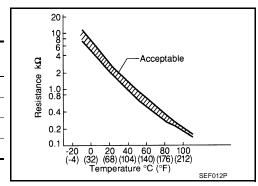
The engine coolant temperature sensor is used to detect the radiator-outlet water temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the radiator-outlet water temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



<Reference data>

Engine coolant temperature [°C (°F)]	Voltage [*] (V)	Resistance (kΩ)
-10 (14)	4.29-4.50	7.0 - 11.4
20 (68)	3.48-3.58	2.37 - 2.63
50 (122)	2.03-2.49	0.68 - 1.00
90 (194)	0.97-1.04	0.236 - 0.260

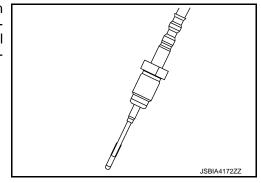
^{*:} These data are reference values and are measured between ECM terminals.



INFOID:0000000011610733

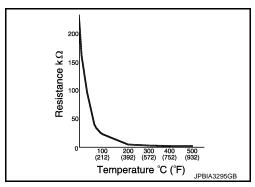
Exhaust Gas Temperature Sensor

Exhaust gas temperature sensor (EGT sensor) is installed upstream three way catalyst. Exhaust gas temperature sensor uses a thermistor which is sensitive to the change in temperature. Electrical resistance of the thermistor decreases in response to the temperature rises.



<Reference data>

Exhaust gas temperature	Voltage	Resistance
100°C (212°F)	4.74 V	18.2 kΩ
200°C (392°F)	4.00 V	4.0 kΩ
400°C (752°F)	1.96 V	0.64 kΩ
600°C (1112°F)	0.85 V	0.20 kΩ



Crankshaft Position Sensor (POS)

The crankshaft position sensor (POS) is located on the oil pan facing the gear teeth (cogs) of the signal plate. It detects the fluctuation of the engine revolution.

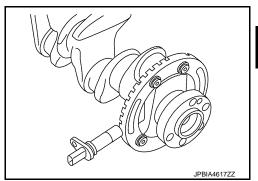
The sensor consists of a permanent magnet and Hall IC.

When the engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

The changing gap causes the magnetic field near the sensor to change.

Due to the changing magnetic field, the voltage from the sensor changes.

The ECM receives the voltage signal and detects the fluctuation of the engine revolution.



INFOID:0000000011610735

INFOID:0000000011610734

Camshaft Position Sensor (PHASE)

The camshaft position sensor (PHASE) senses the retraction of intake camshaft to identify a particular cylinder. The camshaft position sensor (PHASE) senses the piston position.

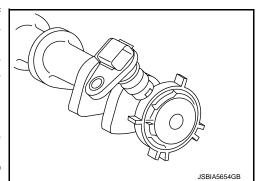
When the crankshaft position sensor (POS) system becomes inoperative, the camshaft position sensor (PHASE) provides various controls of engine parts instead, utilizing timing of cylinder identification signals.

The sensor consists of a permanent magnet and Hall IC.

When engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

The changing gap causes the magnetic field near the sensor to change.

Due to the changing magnetic field, the voltage from the sensor changes.



Intake Valve Timing Control Solenoid Valve

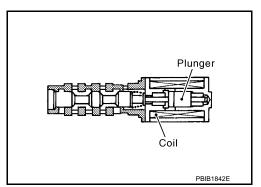
Intake valve timing control solenoid valve is activated by ON/OFF pulse duty (ratio) signals from the ECM.

The intake valve timing control solenoid valve changes the oil amount and direction of flow through intake valve timing control unit or stops oil flow.

The longer pulse width advances valve angle.

The shorter pulse width retards valve angle.

When ON and OFF pulse widths become equal, the solenoid valve stops oil pressure flow to fix the intake valve angle at the control position.

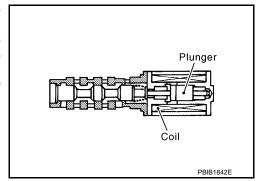


Intake Valve Timing Intermediate Lock Control Solenoid Valve

Intake valve timing intermediate lock control solenoid valve is activated by ON/OFF signals from the ECM.

The intake valve timing intermediate lock control solenoid valve opens/closes the path of oil pressure acting on the lock key in the camshaft sprocket (INT).

- When the solenoid valve becomes ON, oil pressure to the lock key is drained to perform intermediate lock.
- When the solenoid valve becomes OFF, oil pressure is acted on the lock key to release the intermediate lock.



EC

Α

С

D

G

Н

INFOID:0000000011610739

J

K

L

NΛ

Ν

0

Р

Revision: 2014 October EC-601 2015 JUKE

Exhaust Valve Timing Control Position Sensor

Exhaust valve timing control position sensor detects the protrusion of the signal plate installed to the exhaust camshaft front end.

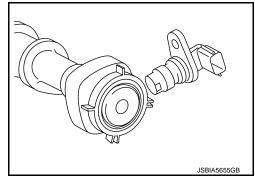
This sensor signal is used for sensing a position of the exhaust camshaft

The sensor consists of a permanent magnet and Hall IC.

When engine is running, the high and low parts of the teeth cause the gap with the sensor to change.

The changing gap causes the magnetic field near the sensor to change.

Due to the changing magnetic field, the voltage from the sensor changes.



INFOID:0000000011610741

INFOID:0000000011610740

Exhaust Valve Timing Control Solenoid Valve

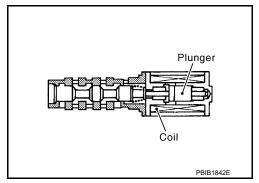
Exhaust valve timing control solenoid valve is activated by ON/OFF pulse duty (ratio) signals from the ECM.

The exhaust valve timing control solenoid valve changes the oil amount and direction of flow through exhaust valve timing control unit or stops oil flow.

The longer pulse width retards valve angle.

The shorter pulse width advances valve angle.

When ON and OFF pulse widths become equal, the solenoid valve stops oil pressure flow to fix the exhaust valve angle at the control position.



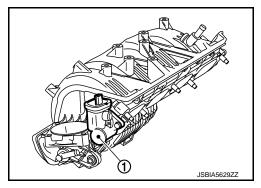
INFOID:0000000011610742

Intake Manifold Runner Control Valve

Intake manifold runner control valve (1) is integrated to intake manifold.

Intake manifold runner control valve is mounted each port of the intake manifold and opened/closed by the intake manifold runner control valve motor.

ECM controls the intake manifold runner control valve motor, according to signals of engine speed, water temperature, etc. and stabilizes combustion by generating a strong tumble flow.



INTAKE MANIFOLD RUNNER CONTROL VALVE MOTOR

Intake manifold runner control valve motor is connected to the rear end of the valve shaft.

The motor opens or closes the valve by the output signal of the ECM.

EGR Volume Control Valve

INFOID:0000000011610743

EGR VOLUME CONTROL VALVE

The EGR volume control valve used a DC motor and controls the flow rate of EGR from downstream of exhaust manifold catalyst. ECM controls the DC motor to make the valve opening angle in response to driving conditions.

EGR CONTROL POSITION SENSOR

The EGR control valve control position sensor is built in the EGR control valve and uses a permanent magnet and a semiconductor device. This sensor measures valve shaft movements and transmits a voltage signal to ECM. Based on this signal, ECM judges the valve opening angle as of then and controls the motor to achieve opening angle appropriate to the driving conditions.

INFOID:0000000011610744

Α

EC

D

Е

M

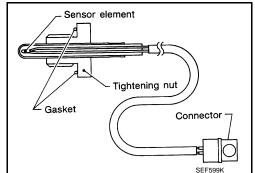
N

Р

EGR Temperature Sensor

The EGR temperature sensor detects temperature changes in the EGR passageway. When the cooling efficiency of EGR cooler is extremery deteriorated, exhaust gas is not cooled than expected, and the temperature in the passageway changes. The EGR temperature sensor is a thermistor that modifies a voltage signal sent from the ECM. This modified signal then returns to the ECM as an input signal. As the temperature increases, EGR temperature sensor resistance decreases.

This sensor is not directly used to control the engine system. It is used only for the fail safe.



<Reference data>

EGR temperature [°C (°F)]	Voltage* (V)	Resistance $(M\Omega)$
0 (32)	4.87	0.62 - 1.05
50 (122)	4.54	0.065 - 0.094
100 (212)	2.88	0.011 - 0.015

^{*:} These data are reference values and are measured between ECM terminals.

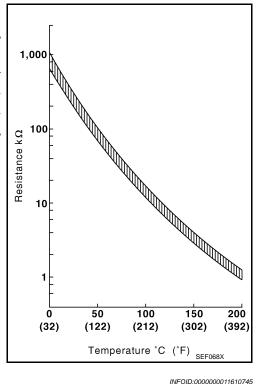
NOTE:

When EGR system is operating.

Voltage: Approx. 1 – 4 V

CAUTION:

Never use ECM ground terminals when measuring input/output voltage. Doing so may damage the ECM's transistor. Use a ground other than ECM terminals, such as the ground.



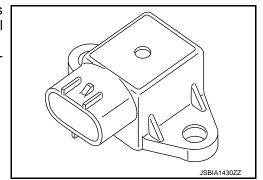
EGR Pressure Sensor

The EGR pressure sensor detects the pressure difference between before and behind the EGR volume control valve. This sensor is not directly used for the engine system control, but used only for self-diagnosis.

G Sensor (INFOID:000000011610749

The G sensor has a semiconductor acceleration sensor and detects longitudinal G and tilt angle of the vehicle based on gravitational acceleration.

In addition, the G sensor converts a detected tilt angle into an electric signal and transmits it to ECM.



Air Fuel Ratio (A/F) Sensor 1

INFOID:0000000011610750

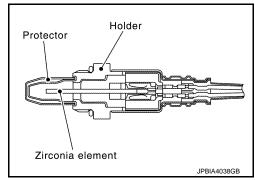
DESCRIPTION

< SYSTEM DESCRIPTION >

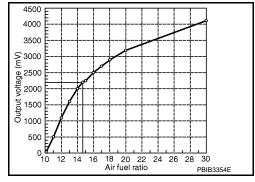
The sensor element of the A/F sensor 1 is composed an electrode layer, which transports ions. It has a heater in the element.

The sensor is capable of precise measurement $\lambda = 1$, but also in the lean and rich range. Together with its control electronics, the sensor outputs a clear, continuous signal throughout a wide λ range.

The exhaust gas components diffuse through the diffusion layer at the sensor cell. An electrode layer is applied voltage, and this current relative oxygen density in lean. Also this current relative hydrocarbon density in rich.



Therefore, the A/F sensor 1 is able to indicate air fuel ratio by this electrode layer of current. In addition, a heater is integrated in the sensor to ensure the required operating temperature of approximately 760°C (1,400°F).



A/F SENSOR 1 HEATER

A/F sensor 1 heater is integrated in the sensor.

The ECM performs ON/OFF duty control of the A/F sensor 1 heater corresponding to the engine operating condition to keep the temperature of A/F sensor 1 element within the specified range.

Heated Oxygen Sensor 2

INFOID:0000000011610751

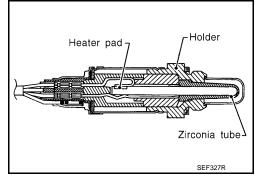
DESCRIPTION

The heated oxygen sensor 2, after three way catalyst (manifold), monitors the oxygen level in the exhaust gas.

Even if switching characteristics of the air fuel ratio (A/F) sensor 1 are shifted, the air fuel ratio is controlled to stoichiometric, by the signal from the heated oxygen sensor 2.

This sensor is made of ceramic zirconia. The zirconia generates voltage from approximately 1 V in richer conditions to 0 V in leaner conditions.

Under normal conditions the heated oxygen sensor 2 is not used for engine control operation.



HEATED OXYGEN SENSOR 2 HEATER

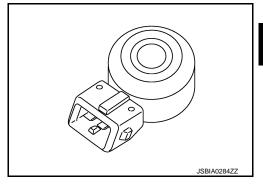
Heated oxygen sensor 2 heater is integrated in the sensor.

The ECM performs ON/OFF control of the heated oxygen sensor 2 heater corresponding to the engine speed, amount of intake air and engine coolant temperature.

Engine speed	Heated oxygen sensor 2 heater
Above 3,600 rpm	OFF
 Below 3,600 rpm after the following conditions are met. Engine: After warming up Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 	ON

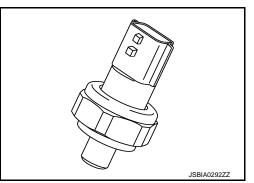
Knock Sensor

The knock sensor is attached to the cylinder block. It senses engine knocking using a piezoelectric element. A knocking vibration from the cylinder block is sensed as vibrational pressure. This pressure is converted into a voltage signal and sent to the ECM.



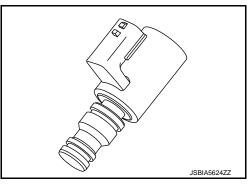
Engine Oil Pressure Sensor

The engine oil pressure (EOP) sensor is detects engine oil pressure and transmits a voltage signal to the ECM.



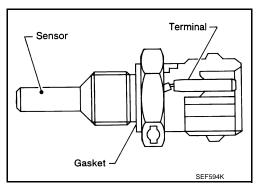
Engine Oil Pressure Control Solenoid Valve

The engine oil pressure control solenoid valve performs the variable hydraulic control (low oil pressure control and high oil pressure control) according to oil temperature and engine load.



Engine Oil Temperature Sensor

The engine oil temperature sensor is used to detect the engine oil temperature. The sensor modifies a voltage signal from the ECM. The modified signal returns to the ECM as the engine oil temperature input. The sensor uses a thermistor which is sensitive to the change in temperature. The electrical resistance of the thermistor decreases as temperature increases.



EC

Α

D

INFOID:0000000011610753

F

G

Н

INFOID:0000000011610754

Κ

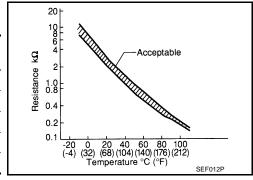
L

Ν

INFOID:0000000011610755

<Reference data>

Engine oil temperature [°C (°F)]	Voltage [*] (V)	Resistance (kΩ)
-10 (14)	4.29-4.50	7.0 - 11.4
20 (68)	3.48-3.58	2.37 - 2.63
50 (122)	2.03-2.49	0.68 - 1.00
90 (194)	0.97-1.04	0.236 - 0.260
110 (230)	0.63-0.67	0.143 - 0.153



^{*:} These data are reference values and are measured between ECM terminals.

Cooling Fan

COOLING FAN CONTROL MODULE

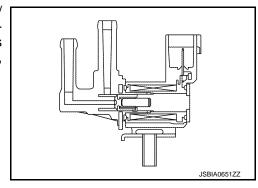
Cooling fan control module receives ON/OFF pulse duty signal from IPDM E/R. Corresponding to this ON/OFF pulse duty signal, cooling fan control module sends cooling fan motor operating voltage to cooling fan motor. The revolution speed of cooling fan motor is controlled by duty cycle of the voltage.

COOLING FAN MOTOR

Cooling fan motor receives cooling fan motor operating voltage from cooling fan control module. The revolution speed of cooling fan motor is controlled by duty cycle of the voltage.

EVAP Canister Purge Volume Control Solenoid Valve

The EVAP canister purge volume control solenoid valve uses a ON/ OFF duty to control the flow rate of fuel vapor from the EVAP canister. The EVAP canister purge volume control solenoid valve is moved by ON/OFF pulses from the ECM. The longer the ON pulse, the greater the amount of fuel vapor that will flow through the valve.



INFOID:0000000011610757

INFOID:0000000011772945

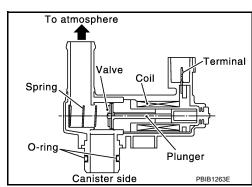
EVAP Canister Vent Control Valve

The EVAP canister vent control valve is located on the EVAP canister and is used to seal the canister vent.

This solenoid valve responds to signals from the ECM. When the ECM sends an ON signal, the coil in the solenoid valve is energized. A plunger will then move to seal the canister vent. The ability to seal the vent is necessary for the on board diagnosis of other evaporative emission control system components.

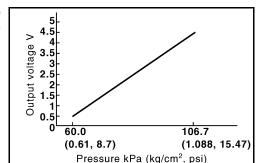
This solenoid valve is used only for diagnosis, and usually remains opened.

When the vent is closed, under normal purge conditions, the evaporative emission control system is depressurized and allows "EVAP Control System" diagnosis.



EVAP Control System Pressure Sensor

The EVAP control system pressure sensor detects pressure in the purge line. The sensor output voltage to the ECM increases as pressure increases.



(Absolute pressure)

Battery Current Sensor (With Battery Temperature Sensor)

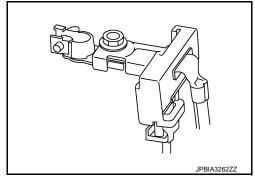
PBIB3370E INFOID:0000000011610758

INFOID:0000000011772946

OUTLINE

The power generation voltage variable control enables fuel consumption to be decreased by reducing the engine load which is caused by the power generation of the generator.

Based on sensor signals, ECM judges whether or not the power generation voltage variable control is performed. When performing the power generation voltage variable control, ECM calculates the target power generation voltage based on the sensor signal. And ECM sends the calculated value as the power generation command value to IPDM E/R. For the details of the power generation voltage variable control, refer to CHG-8, "POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM: System Description".



CAUTION:

Never connect the electrical component or the ground wire directly to the battery terminal. The connection causes the malfunction of the power generation voltage variable control, and then the battery discharge may occur.

BATTERY CURRENT SENSOR

The battery current sensor is installed to the battery negative cable. The sensor measures the charging/discharging current of the battery.

BATTERY TEMPERATURE SENSOR

Battery temperature sensor is integrated in battery current sensor.

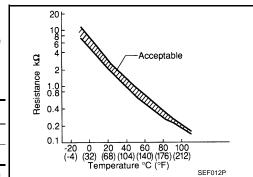
The sensor measures temperature around the battery.

The electrical resistance of the thermistor decreases as temperature increases.

<Reference data>

Temperature [°C (°F)]	Voltage [*] (V)	Resistance ($k\Omega$)
25 (77)	3.333	1.9 - 2.1
90 (194)	0.969	0.222 - 0.258

^{*:} These data are reference values and are measured between battery temperature sensor signal terminal and sensor ground.



EC

Α

D

K

N

Malfunction Indicator lamp (MIL)

Malfunction Indicator lamp (MIL) is located on the combination meter.

MIL will illuminate when the ignition switch is turned ON without the engine running. This is a bulb check.

When the engine is started, MIL should turn OFF. If the MIL remains illuminated, the on board diagnostic system has detected an engine system malfunction.

For details, refer to EC-655, "DIAGNOSIS DESCRIPTION: Malfunction Indicator Lamp (MIL)".

Control modules that a DTC of MIL ON/Blink is stored (Control module varies among DTCs.):

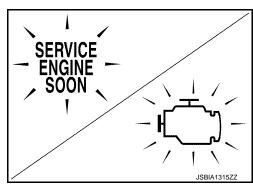
- ECM
- TCM

Oil Pressure Warning Lamp

Oil pressure warning lamp is located on the combination meter. It indicates the low pressure of the engine oil and the malfunction of the engine oil pressure system.

Combination meter turns the oil pressure warning lamp ON/OFF according to the oil pressure warning lamp signal received from ECM via CAN communication.

For details, refer to EC-633, "ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE: System Description".





INFOID:0000000011610760

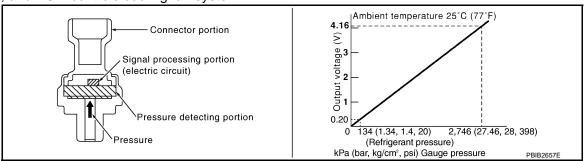
INFOID:0000000011610759

PBIA8559J INFOID:0000000011610761

INFOID:0000000011610762

Refrigerant Pressure Sensor

The refrigerant pressure sensor is installed at the condenser of the air conditioner system. The sensor uses an electrostatic volume pressure transducer to convert refrigerant pressure to voltage. The voltage signal is sent to ECM, and ECM controls cooling fan system.



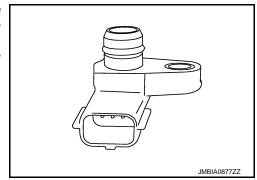
EC-608

Manifold Absolute Pressure Sensor

Revision: 2014 October

The manifold absolute pressure (MAP) sensor is placed at intake manifold collector. It detects intake manifold pressure and sends the voltage signal to the ECM.

The sensor uses a silicon diaphragm which is sensitive to the change in pressure. As the pressure increases, the voltage rises.



COMPONENT PARTS

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Stop Lamp Switch & Brake Pedal Position Switch

INFOID:0000000011610763

Α

EC

D

Е

Н

Stop lamp switch and brake pedal position switch are installed to brake pedal bracket. ECM detects the state of the brake pedal by those two types of input (ON/OFF signal).

Brake pedal	Brake pedal position switch	Stop lamp switch
Released	ON	OFF
Depressed	OFF	ON

Clutch Interlock Switch

INFOID:0000000011610736

When the clutch pedal is depressed, the clutch interlock switch turns ON and the clutch interlock switch signal is sent to the ECM. The ECM judges the clutch pedal conditions via the signal (ON or OFF).

Clutch pedal	Clutch interlock switch
Released	OFF
Depressed	ON

Clutch Pedal Position Switch

INFOID:0000000011610764

When the clutch pedal is depressed, the clutch pedal position switch turns OFF and the clutch pedal position switch signal is sent to the ECM. The ECM judges the clutch pedal conditions via the signal (ON or OFF).

Clutch pedal	Clutch pedal position switch
Released	ON
Depressed	OFF

ASCD Steering Switch

INFOID:0000000011610765

ASCD steering switch has variant values of electrical resistance for each button. ECM reads voltage variation of switch, and determines which button is operated.

Information Display

INFOID:0000000011610766

The operation mode of the ASCD is indicated on the information display in the combination meter. ECM transmits the status signal to the combination meter via CAN communication according to ASCD operation.

. //

L

N

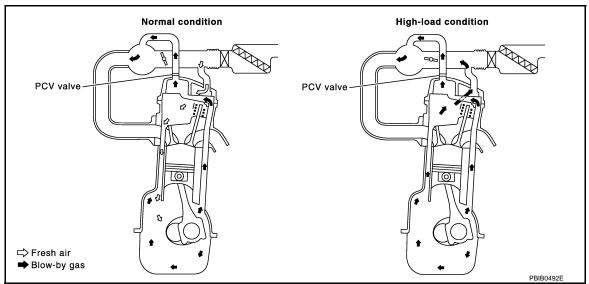
0

Р

STRUCTURE AND OPERATION

Positive Crankcase Ventilation

INFOID:0000000011610768



This system returns blow-by gas to the intake manifold.

The positive crankcase ventilation (PCV) valve is provided to conduct crankcase blow-by gas to the intake manifold.

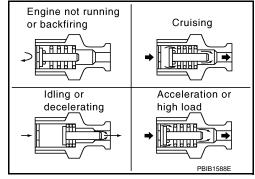
During partial throttle operation of the engine, the intake manifold sucks the blow-by gas through the PCV valve.

Normally, the capacity of the valve is sufficient to handle any blow-by and a small amount of ventilating air.

The ventilating air is then drawn from the air inlet tubes into the crankcase. In this process the air passes through the hose connecting air inlet tubes to rocker cover.

Under full-throttle condition, the manifold vacuum is insufficient to draw the blow-by flow through the valve. The flow goes through the hose connection in the reverse direction.

On vehicles with an excessively high blow-by, the valve does not meet the requirement. This is because some of the flow will go through the hose connection to the air inlet tubes under all conditions.



STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

On Board Refueling Vapor Recovery (ORVR)

INFOID:0000000011786843 EVAP/ORVR line uel filler tube Recirculation line To EVAP canister purge volume One-way fuel valve Fuel tank control solenoid valve FVAP canister Refueling EVAP vapor cut valve

From the beginning of refueling, the air and vapor inside the fuel tank go through refueling EVAP vapor cut valve and EVAP/ORVR line to the EVAP canister. The vapor is absorbed by the EVAP canister and the air is released to the atmosphere.

When the refueling has reached the full level of the fuel tank, the refueling EVAP vapor cut valve is closed and refueling is stopped because of auto shut-off. The vapor which was absorbed by the EVAP canister is purged during driving.

WARNING:

When conducting inspections below, be sure to observe the following:

- Put a "CAUTION: FLAMMABLE" sign in workshop.
- Do not smoke while servicing fuel system. Keep open flames and sparks away from work area.
- Be sure to furnish the workshop with a CO2 fire extinguisher.

CAUTION:

- Before removing fuel line parts, carry out the following procedures:
- Put drained fuel in an explosion-proof container and put lid on securely.
- Release fuel pressure from fuel line. Refer to EC-1251, "Inspection".
- Disconnect battery ground cable.
- Always replace O-ring when the fuel gauge retainer is removed.
- Do not kink or twist hose and tube when they are installed.
- Do not tighten hose and clamps excessively to avoid damaging hoses.
- After installation, run engine and check for fuel leaks at connection.
- Do not attempt to top off the fuel tank after the fuel pump nozzle shuts off automatically. Continued refueling may cause fuel overflow, resulting in fuel spray and possibly a fire.

EC

Α

D

Н

N

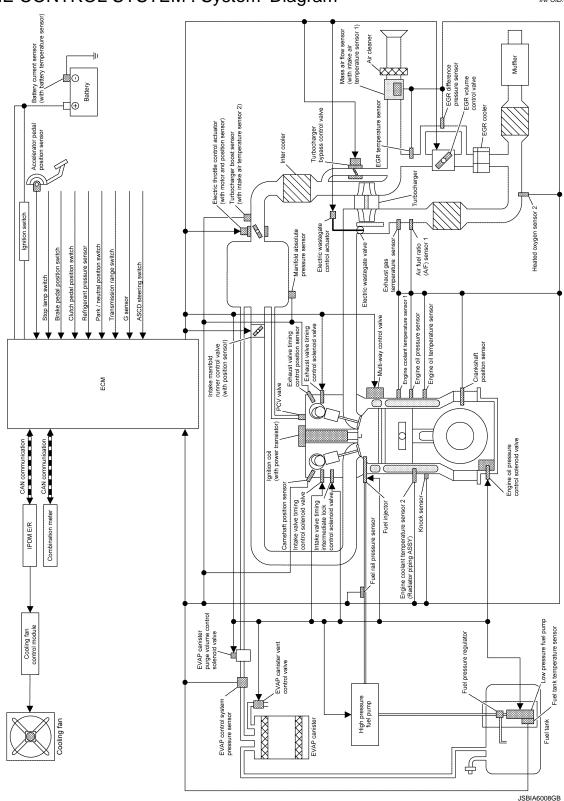
Р

SYSTEM

ENGINE CONTROL SYSTEM

ENGINE CONTROL SYSTEM: System Diagram

INFOID:0000000011610769



ENGINE CONTROL SYSTEM: System Description

INFOID:0000000011610770

ECM controls the engine by various functions.

Function	Reference	F				
Engine oil pressure control	EC-624, "ENGINE OIL PRESSURE CONTROL SYSTEM: System Description"					
EGR system	EC-626, "EGR SYSTEM : System Description"					
Intake manifold runner control	EC-632, "INTAKE MANIFOLD RUNNER CONTROL : System Description"					
Thermal management control	EC-636, "THERMAL MANAGEMENT CONTROL : System Description"	(
Fuel injection control	EC-619, "DIRECT INJECTION GASOLINE SYSTEM: System Description"					
Fuel pressure control	EC-622, "FUEL PRESSURE CONTROL: System Description"					
Electric ignition control	EC-625, "ELECTRIC IGNITION SYSTEM : System Description"					
Intake valve timing control	EC-628, "INTAKE VALVE TIMING CONTROL : System Description"					
Exhaust valve timing control	EC-631, "EXHAUST VALVE TIMING CONTROL : System Description"					
Turbocharger boost control	EC-632, "TURBOCHARGER BOOST CONTROL : System Description"					
Engine protection control (Low engine oil pressure)	EC-633. "ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE: System Description"	(
Air conditioning cut control	EC-634, "AIR CONDITIONING CUT CONTROL : System Description"	ı				
Cooling fan control	EC-635, "COOLING FAN CONTROL : System Description"					
Starter motor drive control	EC-638, "STARTER MOTOR DRIVE CONTROL : System Description"					
Evaporative emission	EC-639, "EVAPORATIVE EMISSION SYSTEM : System Description"					
Alternator power generation voltage variable control system	EC-640. "ALTERNATOR POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM: System Description"					
Fuel filler cap warning system	EC-641, "FUEL FILLER CAP WARNING SYSTEM : System Description"					
ASCD (Automatic speed control device)	EC-642. "AUTOMATIC SPEED CONTROL DEVICE (ASCD) : System Description"					
Nissan dynamic control	EC-643. "INTEGRATED CONTROL SYSTEM : System Description"					
CAN communication	EC-644, "CAN COMMUNICATION : System Description"					

ENGINE CONTROL SYSTEM: Integrated Engine Control

INFOID:0000000011610771

SYSTEM DESCRIPTION

ECM calculates the target intake air amount and the target boost pressure according to the effective volume of cylinder, operation rate of EGR, and boost pressure to achieve driving condition requested by the driver. ECM properly combines the intake and exhaust air VTC, EGR valve, throttle valve, and turbocharger bypass control valve based on the calculations.

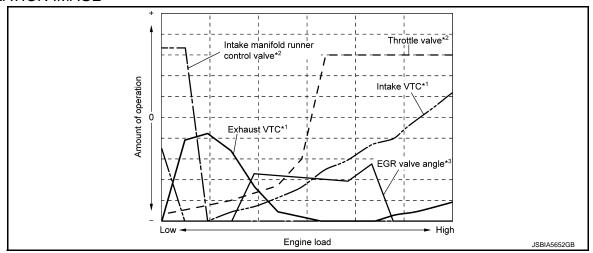
Ρ

M

Ν

0

OPERATION IMAGE



ENGINE CONTROL SYSTEM: Fail Safe

INFOID:0000000011758662

NON DTC RELATED ITEM

Detected items	Engine operating condition in fail-safe mode	Remarks	Reference page
Malfunction indicator lamp circuit	Engine speed will not rise more than 2,500 rpm due to the fuel cut	When there is an open circuit on MIL circuit, the ECM cannot warn the driver by lighting up MIL when there is malfunction on engine control system. Therefore, when electrical controlled throttle and part of ECM related diagnoses are continuously detected as NG for 5 trips, ECM warns the driver that engine control system malfunctions and MIL circuit is open by means of operating fail safe function. The fail safe function also operates when above diagnoses except MIL circuit are detected and demands the driver to repair the malfunction.	EC-1236, "Component Function Check"

DTC RELATED ITEM

Description

When a DTC is detected, ECM executes a mode (in the Fail-safe mode) applicable to the DTC. The fail-safe mode has the preset traveling control mode (accelerator angle variation and engine output limit) and device fix mode.

Fail sa	fe mode	Vehicle behavior
	Accelerator angle variation control	ECM controls the accelerator pedal depression speed to make it slower than actual speed. This causes a drop in accelerating performance and encourages the driver to repair malfunction. NOTE: ECM does not control the accelerator pedal releasing speed.
Traveling con- trol mode	Engine output control	ECM reduces the engine output, according to the rise in engine speed. This reduces the vehicle speed to encourage the driver to repair malfunction. • Engine output control 1: Limits the maximum speed to 120 km/h (75 MPH)* • Engine output control 2: Limits the maximum speed to 55 km/h (34 MPH)* *: This value is a reference value converted from engine power to vehicle speed. Actual power limitation value differs due to the malfunctioning part and driving condition.
Device fix mode		 This mode fixes the IVT control solenoid valve and the EVT control solenoid valve in the reference position. A control signals is not transmitted to EGR volume control valve and the EGR volume control is deactivated. The Intake manifold runner control valve motor is turned OFF (Intake manifold runner control valve opens).

Combustion control mode erating	Fail s	afe mode		Vehicle behavior
trol Stops feedback control of the speed and controls with specified speed control at decelerating and controls with specified speed erating and control at decelerating and control and erating and control at decelerating and c		combustion control at start-		starting (cold start).
Combustion control mode			Stops feedback control of idle spee	ed and controls with specified speed.
trol Stops idle neutral control.	Combustion control mode	control at decel-		ne fuel cut at decelerating and controls with specified speed.
correction control Retardation control Controls ignition timing delay control in the intermediate water temperature range. Pattern Pattern Fail safe mode A Accelerator angle variation control Engine output control 1 Engine output control 2 D Device fix mode E Stratified charge combustion control at starting lide speed control at decelerating lide neutral control Retardation control Fail safe mode Accelerator angle variation control Engine output control 1 Engine output control 2 Stratified charge combustion control at starting lide speed control at decelerating lide neutral control Recovery speed control at decelerating lide neutral control Indiction timing correction control Indictio			Stops idle neutral control.	
Pattern Pattern Fail safe mode A Accelerator angle variation control Engine output control 2 Device fix mode Combustion control mode Combustion control mode Combustion control mode Combustion control mode Control in the intermediate water temperature range. Accelerator angle variation control Engine output control 1 Engine output control 2 Stratified charge combustion control at starting lidle speed control Recovery speed control at decelerating lidle neutral control Identition timing correction control Identition timing correction control		correction con-	Partially controls ignition timing co	ntrol.
A Coelerator angle variation control B Traveling control mode Engine output control 1 Engine output control 2 D Device fix mode E Stratified charge combustion control at starting lide speed control at starting lide neutral control Recovery speed control at decelerating lide neutral control I Ignition timing correction control			Controls ignition timing delay controls	rol in the intermediate water temperature range.
A Coelerator angle variation control B Traveling control mode Engine output control 1 Engine output control 2 D Device fix mode E Stratified charge combustion control at starting lide speed control at starting lide neutral control Recovery speed control at decelerating lide neutral control I Ignition timing correction control	ail Safe Patte	ern		
B Traveling control mode Engine output control 1 Engine output control 2 D Device fix mode E Stratified charge combustion control at startir Idle speed control Recovery speed control at decelerating Idle neutral control Idle neutral control Idle neutral control	Pat	ttern		Fail safe mode
C Engine output control 2 D Device fix mode E Stratified charge combustion control at starting lidle speed control engaged c		A		Accelerator angle variation control
D Device fix mode E Stratified charge combustion control at startii Idle speed control Recovery speed control at decelerating Idle neutral control Idle neutral control		В	Traveling control mode	Engine output control 1
F Combustion control mode Stratified charge combustion control at starting Idle speed control Recovery speed control at decelerating Idle neutral control Idle neutral control	(С		Engine output control 2
Combustion control mode Idle speed control Recovery speed control at decelerating Idle neutral control		D	Device fix mode	
F Combustion control mode • Recovery speed control at decelerating • Idle neutral control • Ignition timing correction control		E		Stratified charge combustion control at starting
Ignition timing correction control		F	Combustion control mode	Recovery speed control at decelerating
Retardation control		G		Ignition timing correction controlRetardation control
				Vehicle behavior
Vehicle behavior	DTC			

		Vehicle behavior								
DTC No.	Detected items				Patterr	1		Others		
		Α	В	С	D	Е	F	G	Others	
P0011 P0075 P052A P052B	Intake valve timing control	_	_	_	×	_	_	_	_	
P0014 P0078	Exhaust valve timing control	_	_	_	×	_	_	_	_	
P0046	Electric wastegate control actuator	×	×	_	×	_	_	_	The ECM stops the electric wastegate actuator control, engine can not be supercharged driving. The ECM requlates engine power limiter and EGR Off.	
P0087 P0090	FRP control system	×	_	×	×	×	_	_	_	
P0088	FRP control system	×	_	×	_	×	_	_	_	
P00B3 P00B4	Engine coolant temperature sensor 2	_	_	_	_	_	_	_	High coolant temperature control does not function.	
P0101 P0102 P0103	Mass air flow sensor	×	×	_	×	×	×	×	NOTE: Fail-safe mode may not start depending on malfunction type of ECM	

Ν

 \bigcirc

Р

[MR EXCEPT FOR NISMO RS MODELS]

DTO							Ve	ehicle b	ehavior
DTC No.	Detected items				Patterr	1			Others
		Α	В	С	D	Е	F	G	
P0117 P0118	Engine coolant temperature sensor 1	_		_	_	×	×	_	The engine speed does not exceed 2,000 rpm due to fuel cut
P0122 P0123 P0222 P0223 P2135	Throttle position sensor	_	_	_	×	_	_	_	The ECM controls the electric throttle control actuator in regulating the throttle opening in order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the normal condition. So, the acceleration will be poor.
P0171 P0172	Fuel injection system	×	_	_	_	×	×	_	_
P0190	FRP sensor	×	×	×	×	×	×	_	High pressure fuel pump is activated at maximum discharge pressure. NOTE: Fail-safe mode may not start depending on malfunction type of ECM
P0192	FRP sensor	×	×	_	_	×	_	_	High pressure fuel pump is activated at maximum discharge pressure. NOTE: Fail-safe mode may not start depending on malfunction type of ECM
P0193	FRP sensor	×	×	_	_	×	_	_	High pressure fuel pump is activated at maximum discharge pressure. NOTE: Fail-safe mode may not start depending on malfunction type of ECM
P0196 P0197 P0198	Engine oil temperature sensor	_	_		-	_	_	_	Exhaust valve timing control does not function.
P0201 P0202 P0203 P0204	Injector	×	_	×	- 1	×	_	_	_
P0237	Turbocharger boost sensor	×	×	_	×	_	_	_	_
P0300 P0301 P0302 P0303 P0304	Misfire	×	_	_	ı	×	×	_	_
P0335	Crankshaft position sensor	_	_	_	×	_	_	_	_
P0340	Camshaft position sensor	_	_	_	×	_	_	_	
P0365	Exhaust valve timing control position sensor	_	_	_	×	_	_	_	_
P0401 P0402	EGR system	_	_	_	×	_	_	_	_
P0404	EGR volume control valve	×	_	×	×	×	×	_	_
P0407 P0408 P046E P046F P0486	EGR pressure sensor	_	_	_	×	_	_	_	_
P040B P040C P040D	EGR temperature sensor	_	_	_	×	_	_	_	_

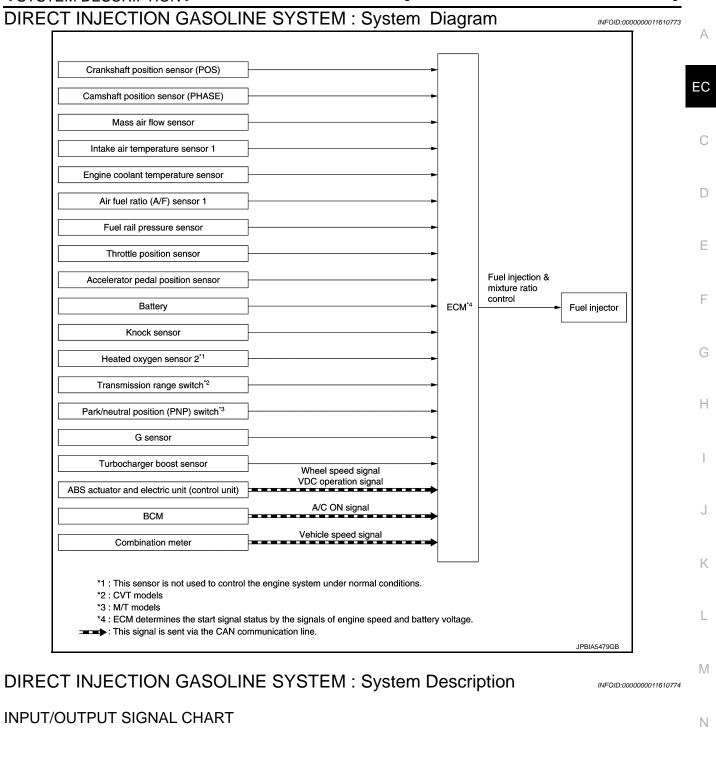
[MR EXCEPT FOR NISMO RS MODELS]

DTC	Detected items				Dotton		VE	enicie c	ehavior	
No.	Detected items	Α	В	С	Patterr D	E	F	G	Others	
P0448	EVAP canister vent control valve	×		_	×	_		_	_	
P044A P044B P044C P044D P044E	EGR volume control valve position sensor	×	_	_	×	_	_	_	_	
P0500		×	_	_		×	×	_		
P0501 P2159	Vehicle speed sensor	×	_	_		×		_	_	
P050A	Cold start control	×	_	_	_	×	_	_	_	
P0524	Engine oil pressure	_	_	_	-	_	_	_	 ECM illuminates oil pressure warning lamp on the combination meter. Engine speed will not rise more than 4,000rpm due to the fuel cut. Fail-safe is canceled when ignition switch OFF → ON. 	
P0603 P0607		×	×	_	l		l	_	_	
P0604 P0605 P0606 P060B	ECM	_	_	_	×	_		_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.	
P060A		×	×	_	×	_		_	NOTE:	
P062B		×	_	×	1	×		_	Fail-safe mode may not start depending on malfunction type of ECM	
P0643	Sensor power supply	_	_	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.	
P119A	FRP sensor	×	_	_	_	×	_	_	_	
P119B	FRP sensor	×	_	_	_	×	_	_	_	
P119C	FRP sensor	×	_	_		×		_	_	
P1197	Out of gas	_	_	×	×	_		_	_	
P1217	Engine over temperature	_	_	_	_	_	-	_	The engine speed does not exceed 2,000 rpm due to fuel cut	
P159B	G sensor	×		_	_	×	_	_	_	
P2100 P2103	Throttle control motor relay	_	_	_	×	_	l	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at fixed opening (approx. 5 degrees) by the return spring.	
P2004	Intake manifold runner control valve	_	_	_	×	_	-	_	_	
P2014	Intake manifold runner control valve position sensor	_	_	_	×	_	_	_	_	
P2016	Intake manifold runner control valve position sensor	_	_	_	×	_	_	_	_	
P2017	Intake manifold runner control valve position sensor	_	_	_	×	_	_	_	_	
P2018	Intake manifold runner control valve position sensor	_	_	_	×	_	_	_	_	

[MR EXCEPT FOR NISMO RS MODELS]

							Ve	ehicle b	ehavior
DTC No.	Detected items				Patteri	า			Others
		Α	В	С	D	Е	F	G	Others
P2101	Electric throttle control func- tion	_	_	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.
P2118	Throttle control motor	_	_	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.
P2119	Electric throttle control actuator	×	×	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring. NOTE: Fail-safe mode may not start depending on malfunction type of ECM
P2122 P2123 P2127 P2128 P2138	Accelerator pedal position sensor	_	_	_	×	_	_	_	The ECM controls the electric throttle control actuator in regulating the throttle opening in order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the normal condition. So, the acceleration will be poor.
P2162	Vehicle speed sensor	×	_	_		×	_	_	_
P2263	Turbocharger system	×	×	_	×	_	_	_	_
P2413	EGR system		_	_	×	_	_	_	_
P2457	EGR cooling system	_	_	_	×	_	_	_	_
P2562 P2566	Electric wastegate control valve position sensor	×	×	_	×	_	_	_	The ECM stops the electric wastegate actuator control, engine can not be supercharged driving. The ECM requlates engine power limiter and EGR Off.
P2563	Electric wastegate control valve position sensor	×	×	_	×	_	_	_	_
P2564	Electric wastegate control valve position sensor	×	×	_	×	_	_	_	_
P2565	Electric wastegate control valve position sensor	×	×	_	×	_	_	_	_
P26A3 P26A5 P26A6 P26A7	Multi-way control valve	_	_	_	_	_	_	_	 When detecting a malfunction with the valve closed, ECM fully opens the valve. When detecting a malfunction with the valve opened, ECM maintains valve angle. When detecting a malfunction in sensor, ECM fully opens the valve. ECM limits the engine output depending on malfunctions.

DIRECT INJECTION GASOLINE SYSTEM



Sensor		Input signal to ECM	ECM func- tion	Actuator
Crankshaft position sensor (POS)	Engine speed*4			
Camshaft position sensor (PHASE)	Camshaft position	on	-	
Mass air flow sensor	Amount of intake	e air	-	
Intake air temperature sensor 1	Intake air tempe	rature		
Engine coolant temperature sensor	Engine coolant to	emperature		
Air fuel ratio (A/F) sensor 1	Density of oxyge	en in exhaust gas		
Fuel rail pressure sensor	Fuel rail pressure	e		Fuel injector
Throttle position sensor	Throttle position			
Accelerator pedal position sensor	Accelerator peda	al position	Fuelinjection	
Battery	Battery voltage*4	ı	& mixture ra- tio control	
Knock sensor	Engine knocking	condition	lio control	
Heated oxygen sensor 2*1	Density of oxyge	en in exhaust gas		
Transmission range switch*2	Coorposition			
Park/neutral position (PNP) switch*3	Gear position			
G sensor	Inclination angle			
Turbocharger boost sensor	Turbocharger bo	ost		
ABS actuator and electric unit (control unit)	CAN communication • Wheel speed signal • VDC/TCS operation command			
ВСМ	CAN communication A/C ON signal			
Combination meter	CAN communication Vehicle speed signal			

^{*1:} This sensor is not used to control the engine system under normal conditions.

SYSTEM DESCRIPTION

The adoption of the direct fuel injection method enables more accurate adjustment of fuel injection quantity by injecting atomized high-pressure fuel directly into the cylinder. This method allows high-powered engine, low fuel consumption, and emissions-reduction.

The amount of fuel injected from the fuel injector is determined by the ECM. The ECM controls the length of time the valve remains open (injection pulse duration). The amount of fuel injected is a program value in the ECM memory. The program value is preset by engine operating conditions. These conditions are determined by input signals (for engine speed, intake air, fuel rail pressure and boost) from the crankshaft position sensor, camshaft position sensor, mass air flow sensor, fuel rail pressure sensor and the turbocharger boost sensor.

VARIOUS FUEL INJECTION INCREASE/DECREASE COMPENSATION

In addition, the amount of fuel injected is compensated to improve engine performance under various operating conditions as listed below.

<Fuel increase>

- During warm-up
- · When starting the engine
- During acceleration
- Hot-engine operation
- When selector lever position is changed from N to D (CVT models)
- · High-load, high-speed operation

<Fuel decrease>

- During deceleration
- During high engine speed operation

^{*2:} CVT models

^{*3:} M/T models

^{*4:} ECM determines the start signal status by the signals of engine speed and battery voltage.

FUEL INJECTION CONTROL

Stratified-charge Combustion

Stratified-charge combustion is a combustion method which enables extremely lean combustion by injecting fuel in the latter half of a compression process, collecting combustible air-fuel around the spark plug, and forming fuel-free airspace around the mixture.

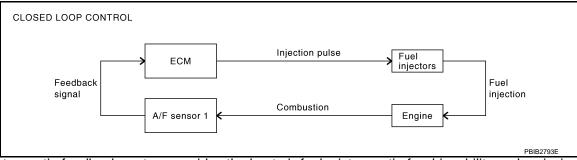
Right after a start with the engine cold, the catalyst warm-up is accelerated by stratified-charge combustion.

Homogeneous Combustion

Homogeneous combustion is a combustion method that fuel is injected during intake process so that combustion occurs in the entire combustion chamber, as is common with conventional methods.

As for a start except for starts with the engine cold, homogeneous combustion occurs.

MIXTURE RATIO FEEDBACK CONTROL (CLOSED LOOP CONTROL)



The mixture ratio feedback system provides the best air-fuel mixture ratio for driveability and emission control. The three way catalyst (manifold) can better reduce CO, HC and NOx emissions. This system uses A/F sensor 1 in the exhaust manifold to monitor whether the engine operation is rich or lean. The ECM adjusts the injection pulse width according to the sensor voltage signal. For more information about A/F sensor 1, refer to EC-603, "Air Fuel Ratio (A/F) Sensor 1". This maintains the mixture ratio within the range of stoichiometric (ideal air-fuel mixture).

This stage is referred to as the closed loop control condition.

Heated oxygen sensor 2 is located downstream of the three way catalyst (manifold). Even if the switching characteristics of A/F sensor 1 shift, the air-fuel ratio is controlled to stoichiometric by the signal from heated oxygen sensor 2.

Open Loop Control

The open loop system condition refers to when the ECM detects any of the following conditions. Feedback control stops in order to maintain stabilized fuel combustion.

- Deceleration and acceleration
- High-load, high-speed operation
- Malfunction of A/F sensor 1 or its circuit
- Insufficient activation of A/F sensor 1 at low engine coolant temperature
- High engine coolant temperature
- During warm-up
- After shifting from N to D (CVT models)
- When starting the engine

MIXTURE RATIO SELF-LEARNING CONTROL

The mixture ratio feedback control system monitors the mixture ratio signal transmitted from A/F sensor 1. This feedback signal is then sent to the ECM. The ECM controls the basic mixture ratio as close to the theoretical mixture ratio as possible. However, the basic mixture ratio is not necessarily controlled as originally designed. Both manufacturing differences (i.e., mass air flow sensor hot wire) and characteristic changes during operation (i.e., fuel injector clogging) directly affect mixture ratio.

Accordingly, the difference between the basic and theoretical mixture ratios is monitored in this system. This is then computed in terms of "injection pulse duration" to automatically compensate for the difference between the two ratios.

"Fuel trim" refers to the feedback compensation value compared against the basic injection duration. Fuel trim includes "short-term fuel trim" and "long-term fuel trim".

"Short term fuel trim" is the short-term fuel compensation used to maintain the mixture ratio at its theoretical value. The signal from A/F sensor 1 indicates whether the mixture ratio is RICH or LEAN compared to the theoretical value. The signal then triggers a reduction in fuel volume if the mixture ratio is rich, and an increase in fuel volume if it is lean.

EC

Α

Е

D

G

J

M

0

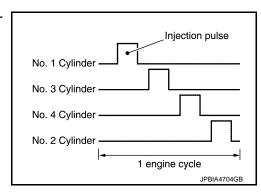
Р

"Long-term fuel trim" is overall fuel compensation carried out over time to compensate for continual deviation of the "short-term fuel trim" from the central value. Continual deviation will occur due to individual engine differences, wear over time and changes in the usage environment.

FUEL INJECTION TIMING

Sequential Direct Injection Gasoline System

Fuel is injected into each cylinder during each engine cycle according to the ignition order.



STRATIFIED-CHARGE START CONTROL

The use of the stratified-charge combustion method enables emissions-reduction when starting the engine with engine coolant temperature between 5°C (41°F) and 40°C (104°F).

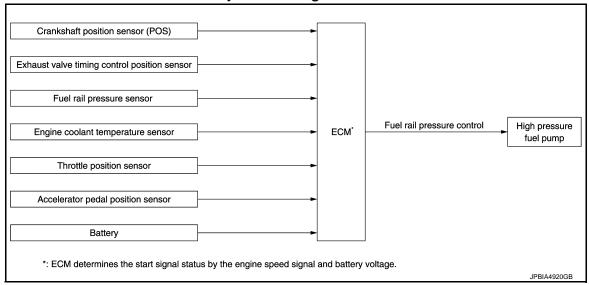
FUEL SHUT-OFF

Fuel to each cylinder is shut-off during deceleration, operation of the engine at excessively high speed or operation of the vehicle at excessively high speed.

FUEL PRESSURE CONTROL

FUEL PRESSURE CONTROL: System Diagram

INFOID:0000000011610775



FUEL PRESSURE CONTROL: System Description

INFOID:0000000011610776

INPUT/OUTPUT SIGNAL CHART

Α

EC

D

Е

F

Н

K

M

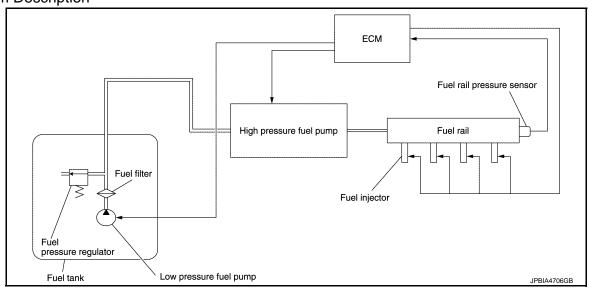
Ν

Р

Sensor	Input signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed*		
Exhaust valve timing control position sensor	Camshaft position		
Fuel rail pressure sensor	Fuel rail pressure		
Engine coolant temperature sensor	Engine coolant temperature	Fuel rail pres- sure control	High pressure fuel pump
Throttle position sensor	Throttle position	oure control	
Accelerator pedal position sensor	Accelerator pedal position		
Battery	Battery voltage*		

^{*:} ECM determines the start signal status by the engine speed signal and battery voltage.

System Description



Low fuel pressure control

- The low fuel pressure pump is controlled by ECM. The pumped fuel passes through the fuel filter and is sent to the high pressure fuel pump.
- Low fuel pressure is adjusted by the fuel pressure regulator.

High fuel pressure control

Revision: 2014 October

The high pressure fuel pump raises the pressure of the fuel sent from the low pressure fuel pump. Actuated by the exhaust camshaft, the high pressure fuel pump activates the high pressure fuel pump solenoid based on a signal received from ECM, and adjusts the amount of discharge by changing the timing of closing the inlet check valve to control fuel rail pressure.

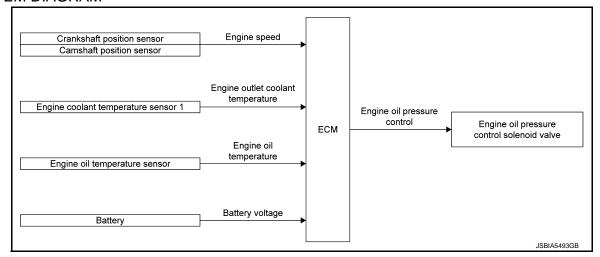
ENGINE OIL PRESSURE CONTROL SYSTEM

EC-623 2015 JUKE

ENGINE OIL PRESSURE CONTROL SYSTEM: System Description

INFOID:0000000011610777

SYSTEM DIAGRAM



SYSTEM DESCRIPTION

ECM performs the variable hydraulic control (low oil pressure control and high oil pressure control) based on signals from each sensor according to oil temperature and engine load. ECM activates the engine oil pressure control solenoid valve and switches to the low oil pressure control and high oil pressure control. ECM uses the low oil pressure control for 80-90 % of the operating area to maintain low oil pressure and stops piston cooling jet (i.e. achievement of less than or equal to jet injection valve opening pressure).

High oil pressure control start condition

- High oil pressure control start condition
- High engine speed
- Coolant temperature is 60°C (140°F)or more under high engine load condition

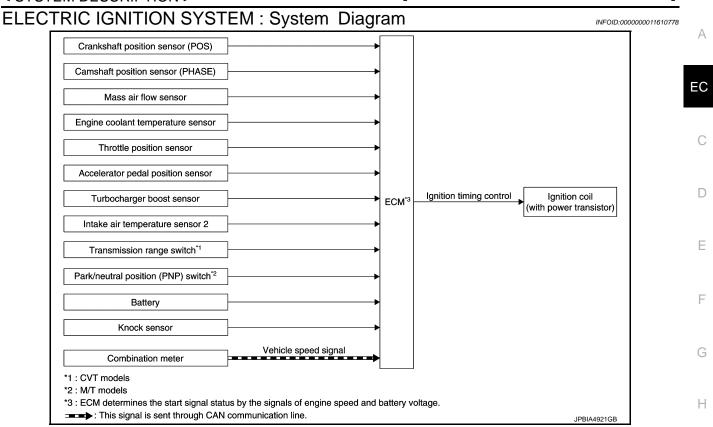
Low oil pressure control start condition

- Coolant temperature is less than 60°C (140°F) under low engine speed condition
- Coolant temperature is 60°C (140°F) or more under low engine load and low engine speed conditions

ELECTRIC IGNITION SYSTEM

INFOID:0000000011610779

Ν



ELECTRIC IGNITION SYSTEM: System Description

INPUT/OUTPUT SIGNAL CHART

Sensor	ı	nput Signal to ECM	ECM func- tion	Actuator
Crankshaft position sensor (POS)	Engine speed	*3		
Camshaft position sensor (PHASE)	Piston position			
Mass air flow sensor	Amount of inta	ake air		
Engine coolant temperature sensor	Engine coolan	t temperature		
Throttle position sensor	Throttle position	on		
Accelerator pedal position sensor	Accelerator pe	edal position		
Turbocharger boost sensor	Turbocharger boost		Ignition tim-	Ignition coil (with power transistor)
Intake air temperature sensor 2	Intake air temperature		ing control	
Transmission range switch*1	Coorposition	0		
Park/neutral position (PNP) switch*2	Gear position Battery voltage*3 Engine knocking condition			
Battery				
Knock sensor				
Combination meter	CAN commu- nication	Vehicle speed signal		

^{*1:} CVT models

SYSTEM DESCRIPTION

Firing order: 1 - 3 - 4 - 2

^{*2:} M/T models

^{*3:} ECM determines the start signal status by the signals of engine speed and battery voltage.

The ignition timing is controlled by the ECM to maintain the best air-fuel ratio for every running condition of the engine. The ignition timing data is stored in the ECM.

The ECM receives information such as the injection pulse width and camshaft position sensor (PHASE) signal. Computing this information, ignition signals are transmitted to the power transistor.

During the following conditions, the ignition timing is revised by the ECM according to the other data stored in the ECM.

- At starting
- During warm-up
- At idle
- At low battery voltage
- During acceleration

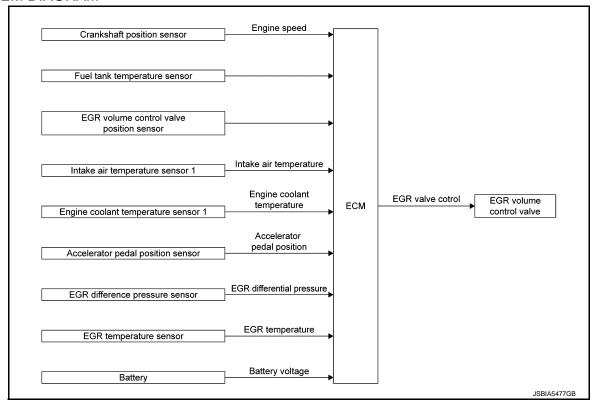
The knock sensor retard system is designed only for emergencies. The basic ignition timing is programmed within the anti-knocking zone, if recommended fuel is used under dry conditions. The retard system does not operate under normal driving conditions. If engine knocking occurs, the knock sensor monitors the condition. The signal is transmitted to the ECM. The ECM retards the ignition timing to eliminate the knocking condition.

EGR SYSTEM

EGR SYSTEM: System Description

INFOID:0000000011610780

SYSTEM DIAGRAM



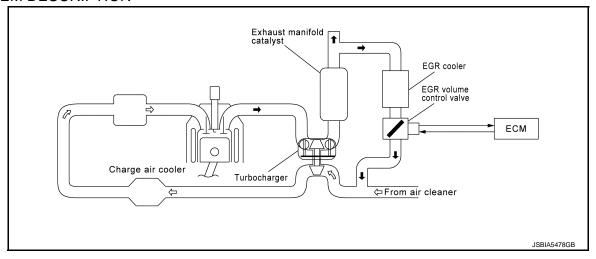
Α

EC

D

Ν

SYSTEM DESCRIPTION



EGR VOLUME CONTROL

The EGR volume control regulates the flow rate of exhaust gas flowing from downstream of exhaust manifold catalyst to intake manifold. The exhaust gas flow rate is controlled by opening/closing the EGR path in the EGR control valve.

A built-in DC motor moves the valve continuously corresponding to the ECM output signal.

The EGR volume control valve position sensor detects the valve position and sends the voltage signals to the

The adoption of water-cooled EGR cooler reduces the knocking by efficiently cooling the gas circulated by the EGR system to lower the combustion temperature and improves fuel efficiency by raising the thermal efficiency.

The ECM judges the current opening angle of the valve from this signals and the ECM controls the DC motor to make the valve opening angle properly.

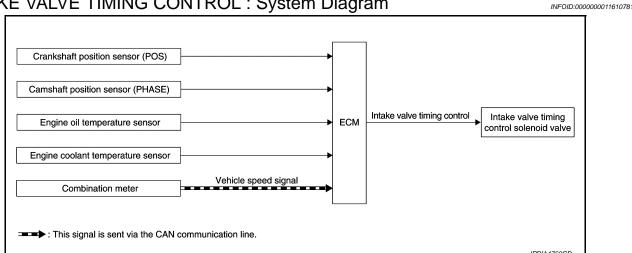
The opening angle of the valve varies for optimum engine control. The optimum value stored in the ECM is determined by considering various engine conditions.

The EGR volume control valve remains close under the following conditions.

- Engine stopped
- Engine starting
- Low engine coolant temperature
- Excessively high engine coolant temperature
- High engine speed
- Accelerator pedal fully depressed
- · Low intake air temperature

INTAKE VALVE TIMING CONTROL

INTAKE VALVE TIMING CONTROL: System Diagram



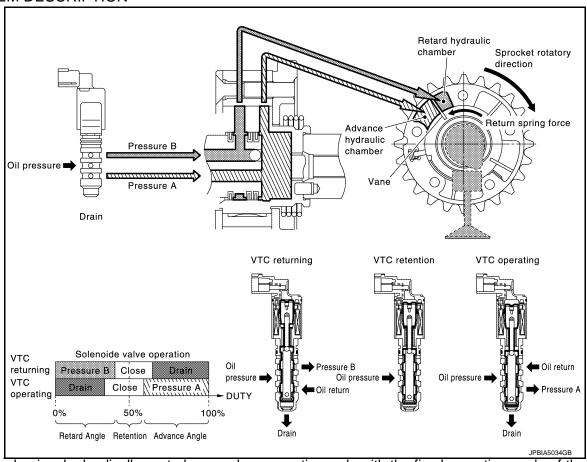
INTAKE VALVE TIMING CONTROL: System Description

INFOID:0000000011610782

INPUT/OUTPUT SIGNAL CHART

Sensor		Input signal to ECM	ECM function	Actuator	
Crankshaft position sensor (POS)	Engine speed	and piston position			
Camshaft position sensor (PHASE)	Lingine speed	and pistori position			
Engine oil temperature sensor	Engine oil temperature		Intake valve tim-	Intake valve timing con-	
Engine coolant temperature sensor	Engine coolant temperature		ing control	trol solenoid valve	
Combination meter	CAN commu- nication	Vehicle speed signal			

SYSTEM DESCRIPTION



This mechanism hydraulically controls cam phases continuously with the fixed operating angle of the intakevalve.

The ECM receives signals such as crankshaft position, camshaft position, engine speed, and engine coolant-temperature. Then, the ECM sends ON/OFF pulse duty signals to the intake valve timing (IVT) control solenoid valve depending on driving status. This makes it possible to control the shut/open timing of the intake valve to increase engine torque in low/mid speed range and output in high-speed range.

INTAKE VALVE TIMING INTERMEDIATE LOCK CONTROL

Α

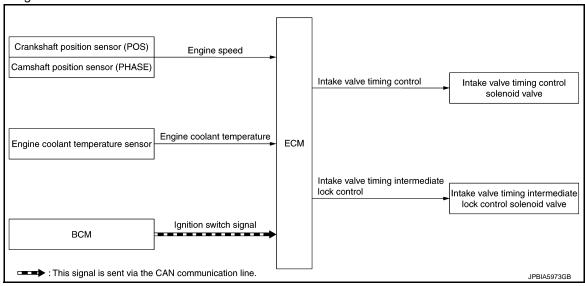
EC

Н

M

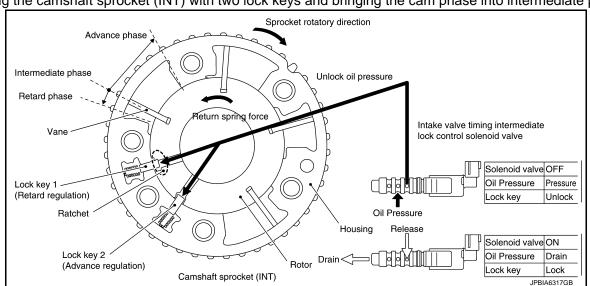
Ν

System Diagram



System Description

The intake valve timing intermediate lock control improves the cleaning ability of exhaust gas at cold starting by fixing the camshaft sprocket (INT) with two lock keys and bringing the cam phase into intermediate phase.



Cam phase is fixed at the intermediate phase by two lock keys in the camshaft sprocket (INT). Lock key 1 controls retard position and lock key 2 controls advance position.

ECM controls the intermediate phase lock by opening/closing the intake valve timing intermediate lock control solenoid valve to control oil pressure acting on the lock key and locking/unlocking the lock key.

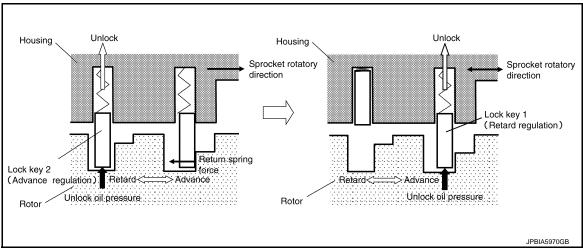
Lock/Unlock Activation

When ECM activates the intake valve timing intermediate lock control solenoid valve, oil pressure generated in the oil pump is drained through the oil pressure path in the control valve. Since oil pressure is not acted on the lock key, the lock key position is fixed by the spring tension and the cam phase is fixed at the intermediate phase.

When ECM deactivates the intake valve timing intermediate lock control solenoid valve, unlocking oil pressure acts on each lock key. Lock key 1 is not released because it is under load due to sprocket rotational force. For this reason, lock key 2 is released first by being pushed up by unlocking oil pressure. When lock key 2 is released, some clearance is formed between lock key 1 and the rotor due to sprocket rotational force and

Revision: 2014 October EC-629 2015 JUKE

return spring force. Accordingly, lock key 1 is pushed up by unlocking oil pressure and the intermediated phase lock is released.



When stopping the engine

When the ignition switch is turned from idle state to OFF, ECM receives an ignition switch signal from BCM via CAN communication and activates the intake valve timing intermediate lock control solenoid valve and drains oil pressure acting on the lock key before activating the intake valve timing control solenoid valve and operating the cam phase toward the advance position.

The cam phase is fixed by the lock key when shifting to the intermediated phase and ECM performs Lock judgment to stop the engine.

When starting the engine

When starting the engine by cold start, ECM judges the locked/unlocked state when ignition switch is turned ON. When judged as locked state (fixed at the intermediate phase), the intake valve timing intermediate lock control solenoid valve is activated. Since oil pressure does not act on the lock key even when the engine is started, the cam phase is fixed at the intermediate phase and the intake valve timing control is not performed. When the engine stops without locking the cam phase at the intermediate phase due to an engine stall and the state is not judged as locked, the intake valve timing intermediate lock control solenoid valve and the intake valve timing control solenoid valve are activated and the cam phase shifts to the advanced position to be locked at the intermediate phase. Even when not locked in the intermediate lock phase due to no oil pressure or low oil pressure, a ratchet structure of the camshaft sprocket (INT) rotor allows the conversion to the intermediate phase in stages by engine vibration.

When engine coolant temperature is more than 60°C (140°F), the intake valve timing is controlled by deactivating the intake valve timing intermediate lock control solenoid valve and releasing the intermediate phase lock.

When the engine is started after warming up, ECM releases the intermediate phase lock immediately after the engine start and controls the intake valve timing.

EXHAUST VALVE TIMING CONTROL

EXHAUST VALVE TIMING CONTROL: System Diagram

INFOID:0000000011610783 Crankshaft position sensor (POS) Camshaft position sensor (PHASE) Exhaust valve timing control Exhaust valve timing FCM Engine oil temperature sensor control solenoid valve Exhaust valve timing control position sensor Vehicle speed signal Combination meter : This signal is sent via the CAN communication line.

EXHAUST VALVE TIMING CONTROL: System Description

INFOID:0000000011610784

Α

EC

D

Е

F

Н

K

M

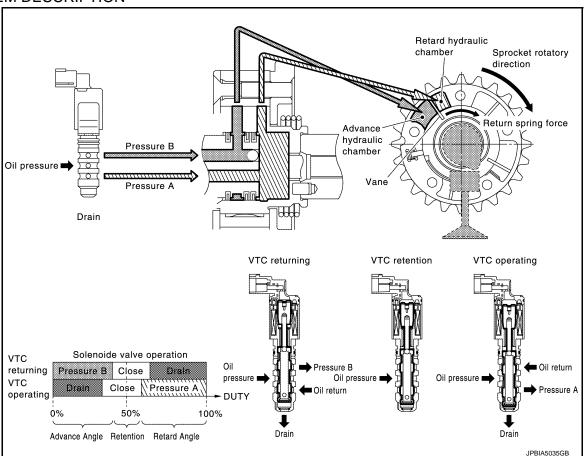
0

Р

INPUT/OUTPUT SIGNAL CHART

Sensor	I	nput signal to ECM	ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed	and piston position		
Camshaft position sensor (PHASE)	Liigiile speed	and pistori position		
Engine oil temperature sensor	Engine oil temperature		Exhaust valve	Exhaust valve timing control
Exhaust valve timing control position sensor	Exhaust valve timing signal		timing control	solenoid valve
Combination meter	CAN communication Vehicle speed signal			

SYSTEM DESCRIPTION



This mechanism hydraulically controls cam phases continuously with the fixed operating angle of the exhaust valve.

The ECM receives signals such as crankshaft position, camshaft position, engine speed, and engine oil temperature. Then, the ECM sends ON/OFF pulse duty signals to the exhaust valve timing (EVT) control solenoid valve depending on driving status. This makes it possible to control the shut/open timing of the exhaust valve to increase engine torque and output in a range of high engine speed.

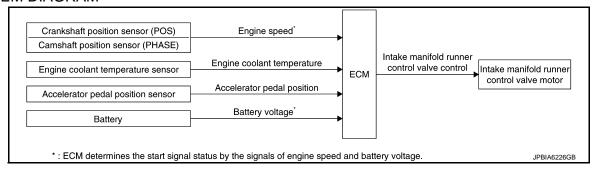
INTAKE MANIFOLD RUNNER CONTROL

Revision: 2014 October EC-631 2015 JUKE

INTAKE MANIFOLD RUNNER CONTROL: System Description

INFOID:0000000011610785

SYSTEM DIAGRAM



SYSTEM DESCRIPTION

Intake manifold runner control valve has a valve portion in the intake passage of each cylinder.

When the engine speed is 2800rpm or less, the intake manifold runner control valve closes. Thus the velocity of the air in the intake passage increases, promoting the vaporization of the fuel and producing a intake manifold runner in the combustion chamber.

Because of this operation, this system tends to increase the burning speed of the gas mixture, improve exhaust emission, and increase the stability in running conditions.

Also, except when idling and during low engine coolant temperature, this system opens the intake manifold runner control valve.

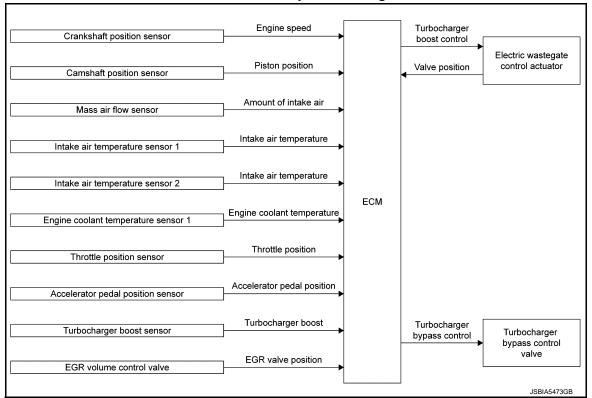
In this condition, this system tends to increase power by improving intake efficiency via reduction of intake flow resistance.

The intake manifold runner control valve is operated by the ECM.

TURBOCHARGER BOOST CONTROL

TURBOCHARGER BOOST CONTROL: System Diagram

INFOID:0000000011610786



TURBOCHARGER BOOST CONTROL: System Description

INFOID:0000000011610787

ECM controls the electric wastegate control actuator according to driving conditions.

The rod connected to the electric wastegate control actuator controls turbocharger boost by changing the angle of the wastegate valve in the exhaust side turbine.

ECM determines a target boost pressure based on engine speed, accelerator pedal position, throttle valve position, and EGR volume control valve position. ECM then calculates intake air pressure around the turbine entrance according to the amount of intake air and intake air pressure. Based on this information, ECM determines the wastegate valve angle to satisfy the target boost pressure.

The electronically-controlled wastegate control actuator enables the adjustment of wastegate valve angle, allowing the improvement of the response to driving conditions and the achievement of high-precision boost pressure control.

When the engine is cold, the wastegate valve is opened and heat loss caused by turbocharger is minimized to accelerate the warm-up (activation) of catalyst. This allows the wastegate valve to be opened in non-supercharging regions and improves the fuel economy by reducing piston pumping loss.

In addition, the adoption of the electronically-controlled turbocharger bypass control valve quickly starts opening the bypass valve when releasing the accelerator pedal, and accordingly this reduces surge sound generated by the back flow of supercharged air to the compressor fin.

NOTE:

Boost pressure varies according to the environment where the vehicle is used.

ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE

ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE : System Diagram

Engine oil pressure sensor

Oil pressure warning lamp signal Malfunction indicator lamp signal

Crankshaft position sensor (POS)

Engine oil temperature sensor

This signal is sent through CAN communication line.

ENGINE PROTECTION CONTROL AT LOW ENGINE OIL PRESSURE : System Description

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator	
Engine oil pressure sensor	Engine pressure	Engine protection control		
Crankshaft position sensor (POS)	Engine speed	Oil pressure warning lamp signal	Combination meter Oil pressure warning lamp	
Engine oil temperature sensor	Engine oil temperature	FUel cut control		

SYSTEM DESCRIPTION

- The engine protection control at low engine oil pressure warns the driver of a decrease in engine oil pressure by the oil pressure warning lamp a before the engine becomes damaged.
- When detecting a decrease in engine oil pressure at an engine speed less than 1,000 rpm, ECM transmits
 an oil pressure warning lamp signal to the combination meter. The combination meter turns ON the oil pressure warning lamp, according to the signal.

Decrease in engine oil	Engine speed	Combination meter	
pressure	Liigiile speed	Oil pressure warning lamp	
Detection	Less than 1,000 rpm	ON*	
	1,000 rpm or more	ON	

^{*:} When detecting a normal engine oil pressure, ECM turns OFF the oil pressure warning lamp.

AIR CONDITIONING CUT CONTROL

Revision: 2014 October EC-633 2015 JUKE

EC

Α

D

Е

Н

J

K

L

M

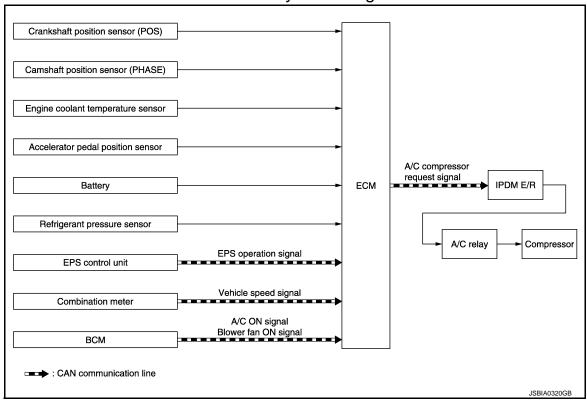
Ν

0

Р

AIR CONDITIONING CUT CONTROL: System Diagram

INFOID:0000000011610790



AIR CONDITIONING CUT CONTROL: System Description

INFOID:0000000011610791

INPUT/OUTPUT SIGNAL CHART

Sensor	In	Input Signal to ECM		Actuator
Crankshaft position sensor (POS)	*	,		
Camshaft position sensor (PHASE)	Engine speed*			
Engine coolant temperature sensor	Engine coolan	t temperature		
Accelerator pedal position sensor	Accelerator pe	Accelerator pedal position		IPDM E/R ↓ Air conditioner relay
Battery	Battery voltage	Battery voltage*		
Refrigerant pressure sensor	Refrigerant pre	Refrigerant pressure		
EPS control unit	CAN commu- nication	EPS operation signal		↓ Compressor
Combination meter	CAN commu- nication	Vehicle speed signal		
BCM	CAN commu- nication	A/C ON signal Blower fan ON signal		

^{*:} ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION

This system improves engine operation when the air conditioner is used.

Under the following conditions, the air conditioner is turned off.

- When the accelerator pedal is fully depressed.
- · When cranking the engine.
- At high engine speeds.
- When the engine coolant temperature becomes excessively high.
- When operating power steering during low engine speed or low vehicle speed.
- · When engine speed is excessively low.
- When refrigerant pressure is excessively low or high.

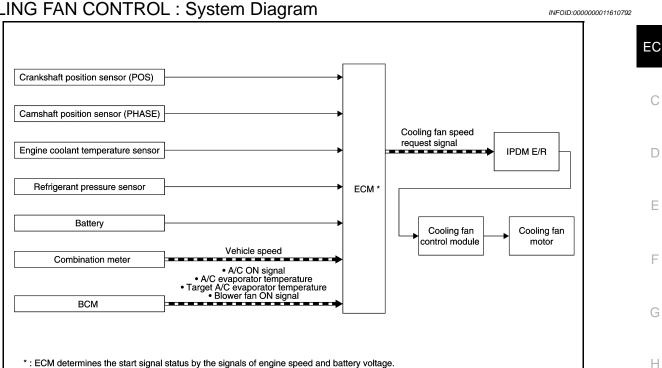
JPRIA4759GR

INFOID:0000000011610793

Α

COOLING FAN CONTROL

COOLING FAN CONTROL: System Diagram



COOLING FAN CONTROL: System Description

: This signal is sent through CAN communication line.

INPUT/OUTPUT SIGNAL CHART

Sensor	Inpu	t signal to ECM	ECM function	Actuator	
Crankshaft position sensor (POS)	*	*			
Camshaft position sensor (PHASE)	Engine speed*				
Engine coolant temperature sensor	Engine coolant	Engine coolant temperature			
Refrigerant pressure sensor	Refrigerant pre	Refrigerant pressure Battery voltage*		IPDM E/R	
Battery	Battery voltage				
Combination meter	CAN commu- nication	Vehicle speed signal	Cooling fan control	Cooling fan control module Cooling fan motor	Cooling fan control mod-
		A/C ON signal	-		
ВСМ	CAN commu-	A/C evaporator temper- ature*			
	nication	Target A/C evaporator temperature*			
		Blower fan ON signal*			

^{*:} The ECM determines the start signal status by the signals of engine speed and battery voltage.

SYSTEM DESCRIPTION

ECM controls cooling fan speed corresponding to vehicle speed, engine coolant temperature, A/C ON signal and refrigerant pressure.

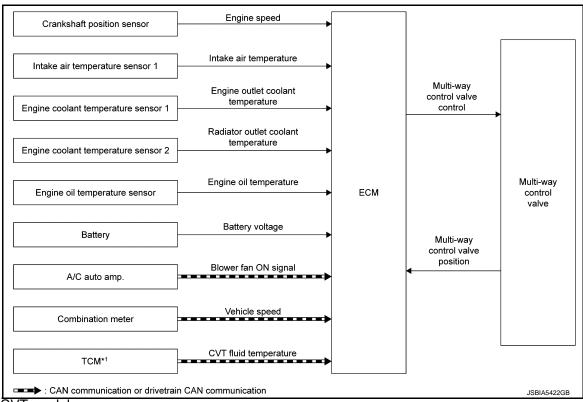
Cooling fan control signal is sent to IPDM E/R from ECM by CAN communication line. Then, IPDM E/R sends ON/OFF pulse duty signal to cooling fan control module. Corresponding to this ON/OFF pulse duty signal, cooling fan control module gives cooling fan motor operating voltage to cooling fan motors. Cooling fan speed is controlled by duty cycle of cooling fan motor operating voltage sent from cooling fan control module.

THERMAL MANAGEMENT CONTROL

THERMAL MANAGEMENT CONTROL: System Description

INFOID:0000000011610794

SYSTEM DIAGRAM



*1: For CVT models

SYSTEM DESCRIPTION

The multi-way control valve changes the paths to heater & EGR cooler, oil cooler, and radiator according to engine coolant temperature and driving conditions.

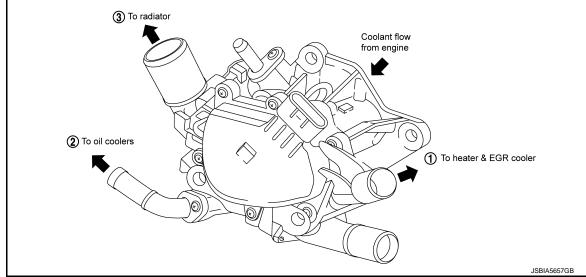
When coolant temperature is low, the paths to heater & EGR cooler, oil cooler, and radiator are closed and coolant is circulated only inside the engine to accelerate engine warm-up.

When coolant temperature is high, the paths to heater & EGR cooler, oil cooler, and radiator are opened and coolant is refrigerated. This raises the coolant temperature and oil temperature rapidly and improves the fuel economy by reducing friction among parts.

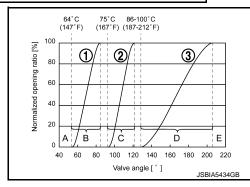
Operation

When the ignition switch is OFF, the valve is fully closed to accelerate bleeding the coolant channels.

When receiving a blower fan ON signal and/or an A/C ON signal, ECM opens the flow path to the heater & EGR cooler even when coolant temperature is low.



	1	2	3
Valve position	Heater & EGR cooler	Oil cooler	Radiator
А	Full close	Full close	Full close
В	Open	Full close	Full close
С	Full open	Open	Full close
D	Full open	Full open	Open
E	Full open	Full open	Full open



- A: Closes all flow paths ①, ②, and ③ and circulates coolant only inside the engine.
- B: Opens the flow path to Heater & EGR cooler and circulates coolant to Heater & EGR cooler.
- C: Opens the flow path to oil cooler and circulates coolant to Heater & EGR cooler and oil cooler.
- D: Opens the flow path to radiator and circulates coolant to Heater & EGR cooler, oil cooler, and radiator.
- E: Opens all the flow paths (1), (2), and (3).

The high coolant temperature control is performed by opening/closing the flow path to the radiator to raise the engine oil temperature even when the coolant temperature is high. When engine load is high, the high coolant temperature control is not performed because of the knocking control.

When detecting a malfunction in multi-way control valve, ECM fully opens the valve to secure cooling paths.

STARTER MOTOR DRIVE CONTROL

EC

Α

C

D

Е

F

G

Н

|

Κ

L

M

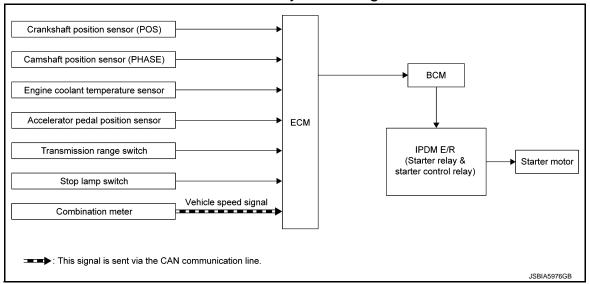
Ν

0

Р

STARTER MOTOR DRIVE CONTROL: System Diagram

INFOID:0000000011610795



STARTER MOTOR DRIVE CONTROL: System Description

INFOID:0000000011610796

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM		ECM function	Actuator
Crankshaft position sensor (POS)	Engine speed Piston position			BCM IPDM E/R (Starter relay & starter control relay)
Camshaft position sensor (PHASE)				
Engine coolant temperature sensor	Engine coolant temperature		Starter motor drive control	
Accelerator pedal position sensor	Accelerator pedal position			
Transmission range switch	Gear position			
Stop lamp switch	Brake pedal p	Brake pedal position		or control relay)
Combination meter	CAN communication Vehicle speed signal			

SYSTEM DESCRIPTION

When rapid deceleration occurs during engine runs or idle speed decreases due to heavy load conditions, ECM detects a decrease in idle speed and restarts the engine to secure reliability in handleability by transmitting a cranking request signal to IPDM E/R for activating the starter motor under the following conditions:

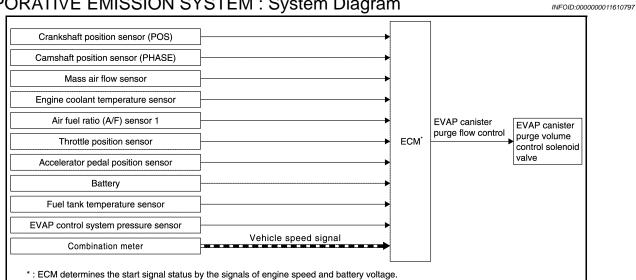
- Selector lever: P or any position other than N
- Idle switch: ON (Accelerator pedal not depressed)
- Brake switch: ON (Brake pedal depressed)

On the other hand, models with the Intelligent Key System transmit a control signal to IPDM E/R by way of BCM via CAN communication.

IPDM E/R detects an operating state of the starter motor relay and the starter motor control relay and transmits a feed back signal to ECM via CAN Communication.

EVAPORATIVE EMISSION SYSTEM

EVAPORATIVE EMISSION SYSTEM: System Diagram



EVAPORATIVE EMISSION SYSTEM: System Description

: This signal is sent via the CAN communication line.

INFOID:0000000011610798

Α

D

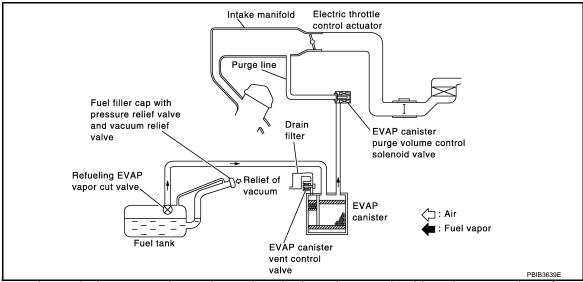
INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM	ECM function	Actuator	
Crankshaft position sensor (POS)	Engine speed*			•
Camshaft position sensor (PHASE)	Piston position			
Mass air flow sensor	Amount of intake air			
Engine coolant temperature sensor	Engine coolant temperature			
Air fuel ratio (A/F) sensor 1	Density of oxygen in exhaust gas (Mixture ratio feedback signal)			
Throttle position sensor	Throttle position	EVAP canister	EVAP canister purge vol-	
Accelerator pedal position sensor	Accelerator pedal position	purge flow control	ume control solenoid valve	
Battery	Battery voltage*			
Fuel tank temperature sensor	Fuel temperature in fuel tank			
EVAP control system pressure sensor	Pressure in purge line			
Combination meter	CAN commu-nication Vehicle speed			

^{*:} ECM determines the start signal status by the signals of engine speed and battery voltage.

EC-639 Revision: 2014 October 2015 JUKE Ν

SYSTEM DESCRIPTION



The evaporative emission system is used to reduce hydrocarbons emitted into the atmosphere from the fuel system. This reduction of hydrocarbons is accomplished by activated charcoals in the EVAP canister.

The fuel vapor in the sealed fuel tank is led into the EVAP canister which contains activated carbon and the vapor is stored there when the engine is not operating or when refueling to the fuel tank.

The vapor in the EVAP canister is purged by the air through the purge line to the intake manifold when the engine is operating. EVAP canister purge volume control solenoid valve is controlled by ECM. When the engine operates, the flow rate of vapor controlled by EVAP canister purge volume control solenoid valve is proportionally regulated as the air flow increases.

EVAP canister purge volume control solenoid valve also shuts off the vapor purge line during decelerating.

ALTERNATOR POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM

ALTERNATOR POWER GENERATION VOLTAGE VARIABLE CONTROL SYSTEM: System Description NPOID:00000011733161

The alternator power generation voltage variable control system controls the amount of power generation, according to a battery loaded condition. ECM judges a battery condition, according to a signal received from the battery current sensor which detects a charge/discharge current. ECM then transmits a signal to IPDM E/R to command power generation via CAN communication. IPDM E/R transmits a power generation control signal to the alternator so that the system can control the amount of power generation. The voltage of power generation is lowered during battery low-load conditions and boosted under heavy load conditions. In this way, the system reduces the engine load through the adequate power generation control.

FUEL FILLER CAP WARNING SYSTEM

FUEL FILLER CAP WARNING SYSTEM : System Diagram

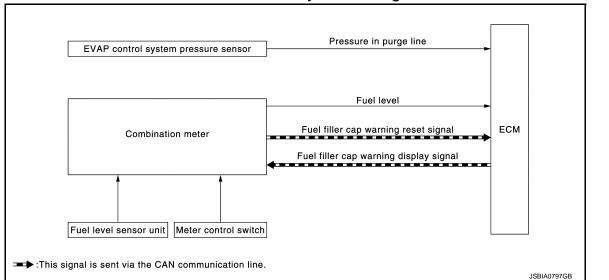
INFOID:0000000011733163

Α

EC

K

Ν



FUEL FILLER CAP WARNING SYSTEM: System Description

INFOID:0000000011733164

INPUT/OUTPUT SIGNAL CHART

nput	n	Dι	ιt
------	---	----	----

Unit/Sensor	Input signal to ECM	ECM function
EVAP control system pressure sensor	Pressure in purge line	
Combination meter	Fuel level	Fuel filler cap warning control
Combination meter	Fuel filler cap warning reset signal*	

^{*:} This signal is sent to the ECM via the CAN communication line.

Output

Unit	Output signal	Actuator
ECM	Fuel filler cap warning display signal*	Combination meter

^{*:} This signal is sent to the combination meter via the CAN communication line.

SYSTEM DESCRIPTION

The fuel filler cap warning system alerts the driver to the prevention of the fuel filler being left uncapped and malfunction occurrences after refueling, by turning ON the fuel filler cap warning display on the combination meter

ECM judges a refueled state, based on a fuel level signal transmitted from the combination meter.

When a very small leak is detected through the EVAP leak diagnosis performed after judging the refueled state, ECM transmits a fuel filler cap warning display signal (request for display ON) to the combination meter via CAN communication.

When receiving the signal, the combination meter turns ON the fuel filler cap warning display.

CAUTION:

Check fuel filler cap installation condition when the fuel filler cap warning display turns ON.

Reset Operation

The fuel filler cap warning lamp tunes OFF, according to any condition listed below:

- Reset operation is performed by operating the meter control switch on the combination meter. Refer to MWI-19, "Switch Name and Function".
- When the reset operation is performed, the combination meter transmits a fuel filler cap warning reset signal to ECM via CAN communication. ECM transmits a fuel filler cap warning display signal (request for display OFF) to the combination meter via CAN communication. When receiving the signal, the combination meter turns OFF the fuel filler cap warning display.
- EVAP leak diagnosis result is normal.
- · Fuel refilled.
- DTC erased by using CONSULT.

Revision: 2014 October EC-641 2015 JUKE

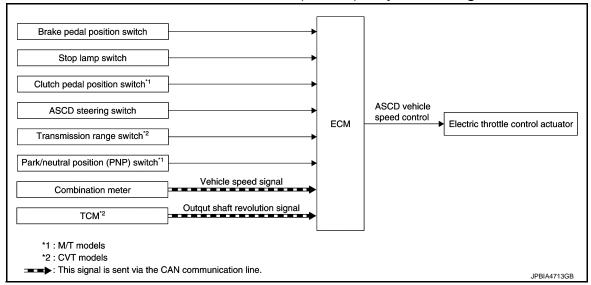
NOTE:

MIL turns ON if a malfunction is detected in leak diagnosis results again at the trip after the fuel filler cap warning display turns ON/OFF.

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

AUTOMATIC SPEED CONTROL DEVICE (ASCD): System Diagram

INFOID:0000000011610801



AUTOMATIC SPEED CONTROL DEVICE (ASCD): System Description

INFOID:0000000011610802

INPUT/OUTPUT SIGNAL CHART

Sensor	Input signal to ECM		ECM function	Actuator
Brake pedal position switch	Brake pedal or	poration		Electric throttle control
Stop lamp switch	brake pedarop	Deration		
Clutch pedal position switch*1	Clutch pedal o	peration	ASCD vehicle speed	
ASCD steering switch	ASCD steering	switch operation		
Transmission range switch*2	Gear position			
Park/neutral position (PNP) switch*1	Gear position		CONTROL	dotation
Combination meter	CAN communication Vehicle speed signal			
TCM*2	CAN communication Output shaft revolution signal			

^{*1:} M/T models

BASIC ASCD SYSTEM

Refer to Owner's Manual for ASCD operating instructions.

Automatic Speed Control Device (ASCD) allows a driver to keep vehicle at predetermined constant speed without depressing accelerator pedal. Driver can set vehicle speed in advance between approximately 40 km/h (25 MPH) and 144km/h (90 MPH).

ECM controls throttle angle of electric throttle control actuator to regulate engine speed.

Operation status of ASCD is indicated by CRUISE indicator and SET indicator in combination meter. If any malfunction occurs in ASCD system, it automatically deactivates control.

Refer to <u>EC-645</u>, "<u>AUTOMATIC SPEED CONTROL DEVICE (ASCD)</u>: <u>Switch Name and Function</u>" for ASCD operating instructions.

NOTE:

Always drive vehicle in safe manner according to traffic conditions and obey all traffic laws.

INTEGRATED CONTROL SYSTEM

^{*2:} CVT models

INTEGRATED CONTROL SYSTEM: System Diagram

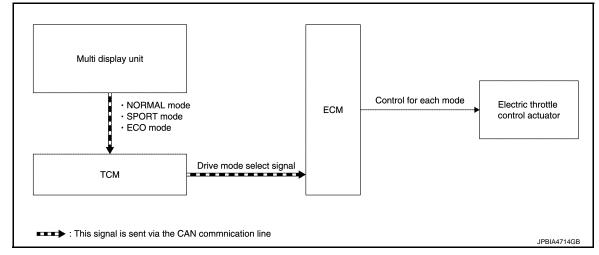
INFOID:0000000011610806

Α

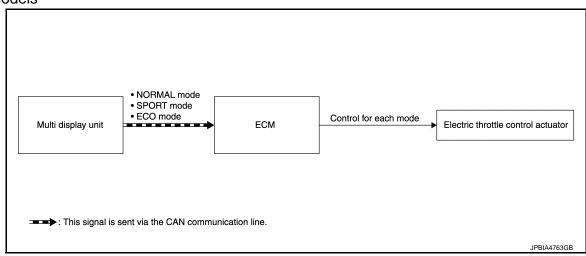
EC

D

CVT models



M/T models



INTEGRATED CONTROL SYSTEM: System Description

INFOID:0000000011610807

M

Ν

Р

CVT models

System Description

TCM transmits a drive mode select signal to ECM via CAN communication, according to a NORMAL mode signal, SPORT mode signal, or ECO mode signal received from the multi display unit via CAN communication. ECM controls torque and throttle opening angle characteristics appropriate for each mode, based on a received drive mode select signal.

NOTE:

- Because of the multi display unit operation, the display may indicate that the mode is switching. However, the mode may not actually switch due to CAN communication error.
- When a CAN communication error occurs between ECM and TCM, the mode switches to NORMAL mode.

M/T models

System Description

ECM controls torque and throttle opening angle characteristics appropriate for each mode, based on a NOR-MAL mode signal, SPORT mode signal, or ECO mode signal received from the multi display unit via CAN communication.

NOTE:

 Because of the multi display unit operation, the display may indicate that the mode is switching. However, the mode may not actually switch due to CAN communication error.

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

 When a CAN communication error occurs between ECM and the multi display unit, the mode switches to NORMAL mode.

Control By Mode

Mode	Control
NORMAL mode	Offers a better balance of fuel economy and traveling performance.
SPORT mode	Allows throttle opening angle change and torque control for obtaining reality and acceleration performance appropriate to a winding run.
ECO mode	Allows throttle opening angle change and torque control for assisting better fuel efficiency.

CAN COMMUNICATION

CAN COMMUNICATION: System Description

INFOID:0000000011610808

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

Refer to <u>LAN-30</u>, "CAN COMMUNICATION SYSTEM: CAN Communication Signal Chart", about CAN communication for detail.

OPERATION

AUTOMATIC SPEED CONTROL DEVICE (ASCD)

AUTOMATIC SPEED CONTROL DEVICE (ASCD): Switch Name and Function

INFOID:0000000011610809

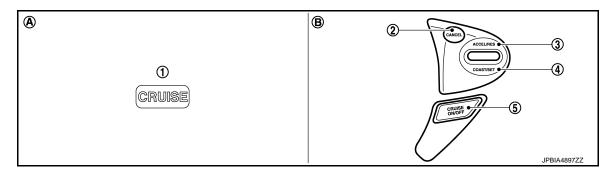
Α

EC

D

Е

SWITCHES AND INDICATORS



- CRUISE indicator
- 2. CANCEL switch

3. ACCEL/RES switch

- 4. COAST/SET switch
- 5. ASCD MAIN switch
- A. On the combination meter
- B. On the steering wheel

SET SPEED RANGE

ASCD system can be set the following vehicle speed.

Minimum speed (Approx.)	Maximum speed (Approx.)			
40 km/h (25 MPH)	144 km/h (90 MPH)			

SWITCH OPERATION

Item	Function
CANCEL switch	Cancels the cruise control driving.
ACCEL/RES switch	Resumes the set speed. Increases speed incrementally during cruise control driving.
COAST/SET switch	Sets desired cruise speed.Decreases speed incrementally during cruise control driving.
ASCD MAIN switch	Master switch to activate the ASCD system.

SET OPERATION

Press MAIN switch. (The CRUISE indicator in combination meter illuminates.)

When vehicle speed reaches a desired speed between approximately 40 km/h (25 MPH) and 144 km/h (90 MPH), press COAST/SET switch.

ACCELERATE OPERATION

If the ACCEL/RES switch is pressed during the cruise control driving, increase the vehicle speed until the switch is released or vehicle speed reaches maximum speed controlled by the system. And then ASCD will keep the new set speed.

EC-645

CANCEL OPERATION

- When any of following conditions exist, the cruise operation is canceled.
- CANCEL switch is pressed
- ASCD MAIN switch is pressed (Set speed is cleared)
- More than 2 switches at ASCD steering switch are pressed at the same time (Set speed is cleared)
- Brake pedal is depressed
- Clutch pedal is depressed or gear position is changed to neutral position. (M/T models)
- Selector lever is changed to N, P or R position (CVT models)
- Vehicle speed decreased to 13 km/h (8 MPH) lower than the set speed
- TCS system is operated

Н

J

M

Ν

.

Р

2015 JUKE

OPERATION

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

- When the ECM detects any of the following conditions, the ECM cancels the cruise operation and informs the driver by blinking CRUISE indicator lamp.
- Engine coolant temperature is slightly higher than the normal operating temperature, CRUISE indicator lamp is blinked slowly.

NOTE:

Engine coolant temperature decreases to the normal operating temperature, CRUISE indicator lamp stop blinking and the cruise operation is able to work.

- Malfunction for some self-diagnoses regarding ASCD control: CRUISE indicator will blink quickly.
- When ASCD MAIN switch is turned to OFF during the cruise control driving, all of ASCD operations is canceled and vehicle speed memory is erased.

COAST OPERATION

When the COAST/SET switch is pressed during the cruise control driving, decrease vehicle set speed until the switch is released. And then ASCD will keep the new set speed.

RESUME OPERATION

- When the ACCEL/RES switch is pressed after the cancel operation other than pressing ASCD MAIN switch
 is performed, vehicle speed is return to last set speed. To resume vehicle set speed, vehicle condition must
 meet following conditions.
- Brake pedal is released
- Clutch pedal is released (M/T models)
- Selector lever is in other than P and N positions (CVT models)
- Vehicle speed is greater than 40 km/h (25 MPH) and less than 144 km/h (90 MPH)

ON BOARD DIAGNOSTIC (OBD) SYSTEM

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

ON BOARD DIAGNOSTIC (OBD) SYSTEM

Diagnosis Description

INFOID:0000000011610811

This system is an on board diagnostic system that records exhaust emission-related diagnostic information and detects a sensors/actuator-related malfunction. A malfunction is indicated by the malfunction indicator lamp (MIL) and stored in control module memory as a DTC.

EC

Α

C

D

Е

Н

J

K

L

M

Ν

0

Р

DIAGNOSIS SYSTEM (ECM)

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

DIAGNOSIS SYSTEM (ECM) DIAGNOSIS DESCRIPTION

DIAGNOSIS DESCRIPTION: 1st Trip Detection Logic and Two Trip Detection Logic

NFOID:0000000011610813

When a malfunction is detected for the first time, 1st trip DTC and 1st trip Freeze Frame data are stored in the ECM memory. The MIL will not illuminate at this stage. <1st trip>

If the same malfunction is detected again during the next drive, the DTC and Freeze Frame data are stored in the ECM memory, and the MIL illuminates. The MIL illuminates at the same time when the DTC is stored. <2nd trip> The "trip" in the "Two Trip Detection Logic" means a driving mode in which self-diagnosis is performed during vehicle operation. Specific on board diagnostic items will cause the ECM to illuminate or blink the MIL, and store DTC and Freeze Frame data, even in the 1st trip, as shown below.

×: Applicable —: Not applicable

	MIL				DTC		1st trip DTC	
Items	1st trip		2nd trip		1st trip	2nd trip	1st trip	2nd trip
	Blinking	Illuminat- ed	Blinking	Illuminat- ed	displaying			display- ing
Misfire (Possible three way catalyst damage) — DTC: P0300 – P0308 is being detected	×	_	_	_	_	_	×	_
Misfire (Possible three way catalyst damage) — DTC: P0300 – P0308 is being detected	_	_	×	_	_	×	_	_
One trip detection diagnoses (Refer to EC-694, "DTC Index".)	_	×	_	_	×	_	_	_
Except above	_	_	-	×	_	×	×	_

DIAGNOSIS DESCRIPTION: DTC and Freeze Frame Data

INFOID:0000000011610814

DTC AND 1ST TRIP DTC

The 1st trip DTC (whose number is the same as the DTC number) is displayed for the latest self-diagnostic result obtained. If the ECM memory was cleared previously, and the 1st trip DTC did not recur, the 1st trip DTC will not be displayed.

If a malfunction is detected during the 1st trip, the 1st trip DTC is saved in the ECM memory. The MIL will not light up (two trip detection logic). If the same malfunction is not detected in the 2nd trip (meeting the required driving pattern), the 1st trip DTC is cleared from the ECM memory. If the same malfunction is detected in the 2nd trip, both the 1st trip DTC and DTC are saved in the ECM memory and the MIL lights up. In other words, the DTC is stored in the ECM memory and the MIL lights up when the same malfunction occurs in two consecutive trips. If a 1st trip DTC is stored and a non-diagnostic operation is performed between the 1st and 2nd trips, only the 1st trip DTC will continue to be stored. For malfunctions that blink or light up the MIL during the 1st trip, the DTC and 1st trip DTC are stored in the ECM memory.

For malfunctions in which 1st trip DTCs are displayed, refer to <u>EC-694, "DTC Index"</u>. These items are required by legal regulations to continuously monitor the system/component. In addition, the items monitored non-continuously are also displayed on CONSULT.

1st trip DTC is specified in Service \$07 of SAE J1979/ISO 15031-5. 1st trip DTC detection occurs without illuminating the MIL and therefore does not warn the driver of a malfunction.

When a 1st trip DTC is detected, check, print out or write down and erase (1st trip) DTC and Freeze Frame data as specified in Work Flow procedure Step 2, refer to EC-728, "Work Flow". Then perform DTC Confirmation Procedure or Component Function Check to try to duplicate the malfunction. If the malfunction is duplicated, the item requires repair.

FREEZE FRAME DATA AND 1ST TRIP FREEZE FRAME DATA

The ECM records the driving conditions such as fuel system status, calculated load value, engine coolant temperature, short term fuel trim, long term fuel trim, engine speed, vehicle speed, absolute throttle position, base fuel schedule and intake air temperature at the moment a malfunction is detected.

Data which are stored in the ECM memory, along with the 1st trip DTC, are called 1st trip freeze frame data. The data, stored together with the DTC data, are called freeze frame data and displayed on CONSULT or GST. The 1st trip freeze frame data can only be displayed on the CONSULT screen.

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Only one set of freeze frame data (either 1st trip freeze frame data or freeze frame data) can be stored in the ECM. 1st trip freeze frame data is stored in the ECM memory along with the 1st trip DTC. There is no priority for 1st trip freeze frame data and it is updated each time a different 1st trip DTC is detected. However, once freeze frame data (2nd trip detection/MIL on) is stored in the ECM memory, 1st trip freeze frame data is no longer stored. Remember, only one set of freeze frame data can be stored in the ECM. The ECM has the following priorities to update the data.

Priority		Items
1	Freeze frame data	Misfire — DTC: P0300 – P0308 Fuel Injection System Function — DTC: P0171, P0172, P0174, P0175
2		Except the above items
3	1st trip freeze frame data	

For example, the EGR malfunction (Priority: 2) was detected and the freeze frame data was saved in the 2nd trip. After that when the misfire (Priority: 1) is detected in another trip, the freeze frame data will be updated from the EGR malfunction to the misfire. The 1st trip freeze frame data is updated each time a different malfunction is detected. There is no priority for 1st trip freeze frame data. However, once freeze frame data is stored in the ECM memory, 1st trip freeze data is no longer stored (because only one freeze frame data or 1st trip freeze frame data can be stored in the ECM). If freeze frame data is stored in the ECM memory and freeze frame data with the same priority occurs later, the first (original) freeze frame data remains unchanged in the ECM memory.

Both 1st trip freeze frame data and freeze frame data (along with the DTCs) are cleared when the ECM memory is erased.

DIAGNOSIS DESCRIPTION: Counter System

RELATIONSHIP BETWEEN MIL, 1ST TRIP DTC, DTC, AND DETECTABLE ITEMS

- When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data are stored in the ECM memory.
- When the same malfunction is detected in two consecutive trips, the DTC and the freeze frame data are stored in the ECM memory, and the MIL will come on.
- The MIL will turn OFF after the vehicle is driven 3 times (driving pattern B) with no malfunction. The drive is counted only when the recorded driving pattern is met (as stored in the ECM). If another malfunction occurs while counting, the counter will reset.
- The DTC and the freeze frame data will be stored until the vehicle is driven 40 times (driving pattern A) without the same malfunction recurring (except for Misfire and Fuel Injection System). For Misfire and Fuel Injection System, the DTC and freeze frame data will be stored until the vehicle is driven 80 times (driving pattern C) without the same malfunction recurring. The "TIME" in "SELF-DIAGNOSTIC RESULTS" mode of CONSULT will count the number of times the vehicle is driven.
- The 1st trip DTC is not displayed when the self-diagnosis results in OK for the 2nd trip.

COUNTER SYSTEM CHART

Items	Fuel Injection System	Misfire	Other
MIL (turns OFF)	3 (pattern B)	3 (pattern B)	3 (pattern B)
DTC, Freeze Frame Data (no display)	80 (pattern C)	80 (pattern C)	40 (pattern A)
1st Trip DTC (clear)	1 (pattern C), *1	1 (pattern C), *1	1 (pattern B)
1st Trip Freeze Frame Data (clear)	*1, *2	*1, *2	1 (pattern B)

For details about patterns B and C under "Fuel Injection System" and "Misfire", see "EXPLANATION FOR DRIVING PATTERNS FOR "MISFIRE <EXHAUST QUALITY DETERIORATION>", "FUEL INJECTION SYSTEM".

For details about patterns A and B under Other, see "EXPLANATION FOR DRIVING PATTERNS FOR "MISFIRE <EXHAUST QUALITY DETERIORATION>", "FUEL INJECTION SYSTEM".

- *1: Clear timing is at the moment OK is detected.
- *2: Clear timing is when the same malfunction is detected in the 2nd trip.

Relationship Between MIL, DTC, 1st Trip DTC and Driving Patterns for "Misfire <Exhaust Quality Deterioration>", "Fuel Injection System"

EC

D

Е

'

G

Н

INFOID:0000000011610815

|

L

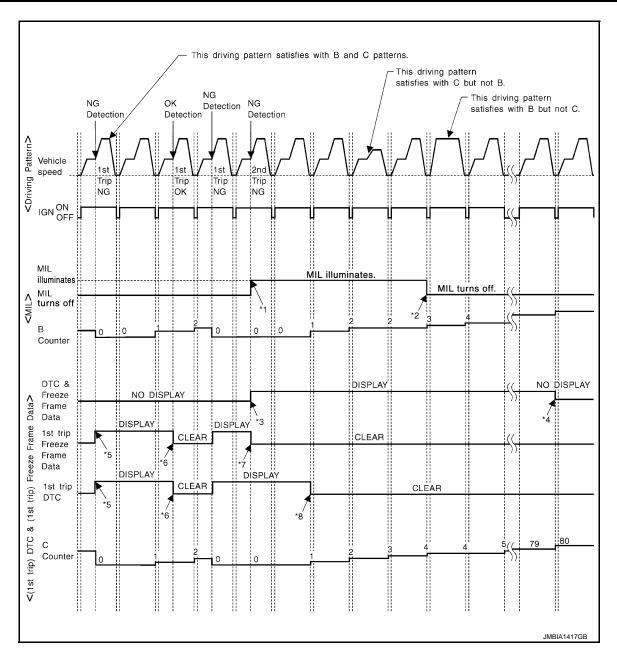
N /I

Ν

0

Р

2015 JUKE



- *1: When the same malfunction is detected in two consecutive trips, MIL will light up.
- *4: The DTC and the freeze frame data will not be displayed any longer after vehicle is driven 80 times (pattern C) without the same malfunction. (The DTC and the freeze frame data still remain in ECM.)
- *7: When the same malfunction is detected in the 2nd trip, the 1st trip freeze frame data will be cleared.

- *2: MIL will turn OFF after vehicle is driv- *3: When the same malfunction is deen 3 times (pattern B) without any malfunctions.
- *5: When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data will be stored in ECM.
- *8: 1st trip DTC will be cleared when vehicle is driven once (pattern C) without the same malfunction after DTC is stored in ECM.
- tected in two consecutive trips, the DTC and the freeze frame data will be stored in ECM.
- *6: The 1st trip DTC and the 1st trip freeze frame data will be cleared at the moment OK is detected.

Explanation for Driving Patterns for "Misfire < Exhaust Quality Deterioration>", "Fuel Injection System"

Driving Pattern B

Refer to EC-652, "DIAGNOSIS DESCRIPTION: Driving Pattern".

Α

EC

D

F

Н

K

M

Ν

Ρ

Driving Pattern C

Refer to EC-652, "DIAGNOSIS DESCRIPTION: Driving Pattern".

Example:

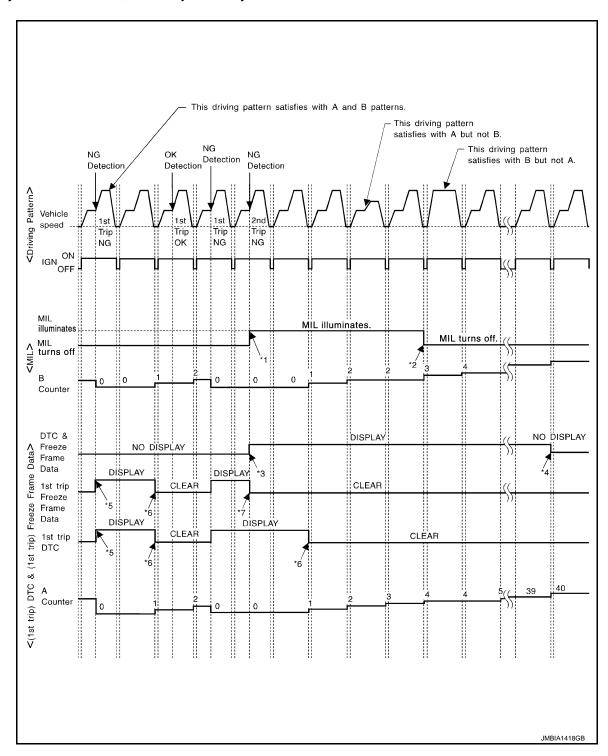
If the stored freeze frame data is as per the following:

Engine speed: 850 rpm, Calculated load value: 30%, Engine coolant temperature: 80°C (176°F)

To be satisfied with driving pattern C, the vehicle should run under the following conditions:

Engine speed: 475 – 1,225 rpm, Calculated load value: 27 – 33%, Engine coolant temperature: more than 70°C (158°F)

Relationship Between MIL, DTC, 1st Trip DTC and Driving Patterns Except For "Misfire <Exhaust Quality Deterioration>", "Fuel Injection System"



[MR EXCEPT FOR NISMO RS MODELS]

< SYSTEM DESCRIPTION >

- *1: When the same malfunction is detected in two consecutive trips, MIL will light up.
- *4: The DTC and the freeze frame data will not be displayed any longer after vehicle is driven 40 times (pattern A) without the same malfunction. (The DTC and the freeze frame data still remain in ECM.)
- *7: When the same malfunction is detected in the 2nd trip, the 1st trip freeze frame data will be cleared.

- *2: MIL will turn OFF after vehicle is driv- *3: When the same malfunction is deen 3 times (pattern B) without any malfunctions.
- *5: When a malfunction is detected for the first time, the 1st trip DTC and the 1st trip freeze frame data will be stored in ECM.
- tected in two consecutive trips, the DTC and the freeze frame data will be stored in ECM.
- *6: 1st trip DTC will be cleared after vehicle is driven once (pattern B) without the same malfunction.

Explanation for Driving Patterns Except for "Misfire <Exhaust Quality Deterioration>", "Fuel Injection System"

Driving Pattern A

Refer to EC-652, "DIAGNOSIS DESCRIPTION: Driving Pattern".

Driving Pattern B

Refer to EC-652, "DIAGNOSIS DESCRIPTION: Driving Pattern".

DIAGNOSIS DESCRIPTION: Driving Pattern

INFOID:0000000011610816

DRIVING PATTERN A

Driving pattern A means a trip satisfying the following conditions.

- Engine speed reaches 400 rpm or more.
- Engine coolant temperature rises by 20°C (36°F) or more after starting the engine.
- Engine coolant temperature reaches 70°C (158°F) or more.
- The ignition switch is turned from ON to OFF.

NOTE:

- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern A.

DRIVING PATTERN B

Driving pattern B means a trip satisfying the following conditions.

- Engine speed reaches 400 rpm or more.
- Engine coolant temperature reaches 70°C (158°F) or more.
- Vehicle speed of 70 120 km/h (44 75 MPH) is maintained for 60 seconds or more under the control of closed loop.
- Vehicle speed of 30 60 km/h (19 37 MPH) is maintained for 10 seconds or more under the control of closed loop.
- Under the closed loop control condition, the following state reaches 12 seconds or more in total: Vehicle speed of 4 km/h (2 MPH) or less with idling condition.
- The state of driving at 10 km/h (7 MPH) or more reaches 10 minutes or more in total.
- A lapse of 22 minutes or more after engine start.

NOTE:

- Drive the vehicle at a constant velocity.
- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern B.

DRIVING PATTERN C

Driving pattern C means operating vehicle as per the following:

The following conditions should be satisfied at the same time:

Engine speed: (Engine speed in the freeze frame data) ±375 rpm

Calculated load value: (Calculated load value in the freeze frame data) x (1±0.1) [%]

Engine coolant temperature condition:

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

- When the freeze frame data shows lower than 70°C (158°F), engine coolant temperature should be lower than 70°C (158°F).
- When the freeze frame data shows higher than or equal to 70°C (158°F), engine coolant temperature should be higher than or equal to 70°C (158°F).

NOTE:

- When the same malfunction is detected regardless of the above vehicle conditions, reset the counter of driving pattern C.
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern C.
- The 1st trip DTC will be cleared when C counter is counted once without the same malfunction after DTC is stored in ECM.

DRIVING PATTERN D

Driving pattern D means a trip satisfying the following conditions.

- The state of driving at 40 km/h (25 MPH) reaches 300 seconds or more in total.
- Idle speed lasts 30 seconds or more.
- A lapse of 600 seconds or more after engine start.

NOTE:

- When the same malfunction is detected regardless of driving conditions, reset the counter of driving pattern D.
- When the above conditions are satisfied without detecting the same malfunction, reset the counter of driving pattern D.

DIAGNOSIS DESCRIPTION: System Readiness Test (SRT) Code

System Readiness Test (SRT) code is specified in Service \$01 of SAE J1979/ISO 15031-5.

As part of an enhanced emissions test for Inspection & Maintenance (I/M), certain states require the status of SRT be used to indicate whether the ECM has completed self-diagnosis of major emission systems and components. Completion must be verified in order for the emissions inspection to proceed.

If a vehicle is rejected for a State emissions inspection due to one or more SRT items indicating "INCMP", use the information in this Service Manual to set the SRT to "CMPLT".

In most cases the ECM will automatically complete its self-diagnosis cycle during normal usage, and the SRT status will indicate "CMPLT" for each application system. Once set as "CMPLT", the SRT status remains "CMPLT" until the self-diagnosis memory is erased.

Occasionally, certain portions of the self-diagnostic test may not be completed as a result of the customer's normal driving pattern; the SRT will indicate "INCMP" for these items.

NOTE:

The SRT will also indicate "INCMP" if the self-diagnosis memory is erased for any reason or if the ECM memory power supply is interrupted for several hours.

If, during the state emissions inspection, the SRT indicates "CMPLT" for all test items, the inspector will continue with the emissions test. However, if the SRT indicates "INCMP" for one or more of the SRT items the vehicle is returned to the customer untested.

NOTE:

If permanent DTC is stored or MIL illuminates during the state emissions inspection, the vehicle is also returned to the customeruntested even though the SRT indicates "CMPLT" for all test items. therefore, it is important to check SRT ("CMPLT"), DTC (No DTCs) and permanent DTC (No permanent DTC) before the inspection.

SRT SET TIMING

SRT is set as "CMPLT" after self-diagnosis has been performed one or more times. Completion of SRT is done regardless of whether the result is OK or NG. The set timing is different between OK and NG results and is shown in the table below.

EC

Α

С

Е

D

G

INFOID:0000000011610817

Н

IZ

IVI

Ν

Р

Self-diagnosis result		Example				
		Diagnosis	\leftarrow ON \rightarrow		on cycle $OFF \leftarrow ON \rightarrow OF$	F ← ON →
All OK	Case 1	P0400	OK (1)	— (1)	OK (2)	— (2)
		P0402	OK (1)	—(1)	— (1)	OK (2)
		P1402	OK (1)	OK (2)	— (2)	— (2)
		SRT of EGR	"CMPLT"	"CMPLT"	"CMPLT"	"CMPLT"
	Case 2	P0400	OK (1)	— (1)	—(1)	— (1)
		P0402	— (0)	— (0)	OK (1)	— (1)
		P1402	OK (1)	OK (2)	— (2)	— (2)
		SRT of EGR	"INCMP"	"INCMP"	"CMPLT"	"CMPLT"
NG exists	Case 3	P0400	OK	OK	_	_
		P0402	_	_	_	_
		P1402	NG	_	NG	NG (Consecutive NG)
		(1st trip) DTC	1st trip DTC	_	1st trip DTC	DTC (= MIL ON)
		SRT of EGR	"INCMP"	"INCMP"	"INCMP"	"CMPLT"

OK: Self-diagnosis is carried out and the result is OK.

NG: Self-diagnosis is carried out and the result is NG.

When all SRT related self-diagnoses show OK results in a single cycle (Ignition OFF-ON-OFF), the SRT will indicate "CMPLT". \rightarrow Case 1 above

When all SRT related self-diagnoses show OK results through several different cycles, the SRT will indicate "CMPLT" at the time the respective self-diagnoses have at least one OK result. → Case 2 above

If one or more SRT related self-diagnoses show NG results in 2 consecutive cycles, the SRT will also indicate "CMPLT". \rightarrow Case 3 above

The table above shows that the minimum number of cycles for setting SRT as "INCMP" is the number one (1) for each self-diagnosis (Case 1 & 2) or the number two (2) for one of self-diagnoses (Case 3). However, in preparation for the state emissions inspection, it is unnecessary for each self-diagnosis to be executed twice (Case 3) for the following reasons:

- The SRT will indicate "CMPLT" at the time the respective self-diagnoses have one (1) OK result.
- The emissions inspection requires "CMPLT" of the SRT only with OK self-diagnosis results.
- During SRT driving pattern, the 1st trip DTC (NG) is detected prior to "CMPLT" of SRT and the self-diagnosis memory must be erased from the ECM after repair.
- If the 1st trip DTC is erased, all the SRT will indicate "INCMP".

NOTE:

SRT can be set as "CMPLT" together with the DTC(s). Therefore, DTC check must always be carried out prior to the state emission inspection even though the SRT indicates "CMPLT".

DIAGNOSIS DESCRIPTION: Permanent Diagnostic Trouble Code (Permanent DTC)

INFOID:0000000011734366

Permanent DTC is defined in SAE J1979/ISO 15031-5 Service \$0A.

ECM stores a DTC issuing a command of turning on MIL as a permanent DTC and keeps storing the DTC as a permanent DTC until ECM judges that there is no presence of malfunction.

Permanent DTCs cannot be erased by using the erase function of CONSULT or Generic Scan Tool (GST) and by disconnecting the battery to shut off power to ECM. This prevents a vehicle from passing the in-use inspection without repairing a malfunctioning part.

When not passing the in-use inspection due to more than one permanent DTC, permanent DTCs should be erased, referring to this manual.

NOTE:

- The important items in in-use inspection are that MIL is not ON, SRT test items are set, and permanent DTCs are not included.
- Permanent DTCs do not apply for regions that permanent DTCs are not regulated by law.

^{-:} Self-diagnosis is not carried out.

PERMANENT DTC SET TIMING

The setting timing of permanent DTC is stored in ECM with the lighting of MIL when a DTC is confirmed.

DIAGNOSIS DESCRIPTION: Malfunction Indicator Lamp (MIL)

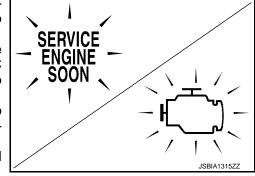
INFOID:0000000011610818

 When detecting a DTC that affects exhaust gas, the exhaust emission-related control module transmits a malfunction indicator lamp signal to ECM via CAN communication line.

ECM prioritizes (MIL: ON/blink) the signal received from the exhaust emission-related control module and the ECM-stored DTC that affects exhaust gas and transmits a malfunction indicator lamp signal to the combination meter via CAN communication line.

The combination meter turns ON or blinks the MIL, according to the signal transmitted from ECM, and alerts the driver of malfunction detection.

 Control modules that a DTC of MIL ON/Blink is stored (Control module varies among DTCs.):



- ECM

- TCM

The MIL illuminates when ignition switch is turned ON (engine is not running).

Check the MIL circuit if MIL does not illuminate. Refer to EC-1236, "Component Function Check".

When the engine is started, the MIL should go off.

NOTE:

If MIL remains ON or continues blinking, a DTC(s) that affects exhaust gas is detected. In this case, Selfdiagnosis is required for performing inspection and repair.

On Board Diagnosis Function

INFOID:0000000011610819

ON BOARD DIAGNOSIS ITEM

The on board diagnostic system has the following functions.

Diagnostic test mode	Function
Bulb check	MIL can be checked.
SRT status	ECM can read if SRT codes are set.
Malfunction warning	If ECM detects a malfunction, it illuminates or blinks MIL to inform the driver that a malfunction has been detected.
Self-diagnostic results	DTCs or 1st trip DTCs stored in ECM can be read.
Accelerator pedal released position learning	ECM can learn the accelerator pedal released position. Refer to EC-738, "Work Procedure".
Throttle valve closed position learning	ECM can learn the throttle valve closed position. Refer to EC-739, "Work Procedure".
Idle air volume learning	ECM can learn the idle air volume. Refer to EC-743, "Work Procedure".
Mixture ratio self-learning value clear	Mixture ratio self-learning value can be erased. Refer to <u>EC-747, "Work Procedure"</u> .

BULB CHECK MODE

Description

This function allows damage inspection in the MIL bulb (blown, open circuit, etc.).

Operation Procedure

Turn ignition switch ON. 1.

The MIL on the instrument panel should stay ON. If it remains OFF, check MIL circuit. Refer to EC-1236, "Diagnosis Procedure".

SRT STATUS MODE

Description

EC-655 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

Ν

Р

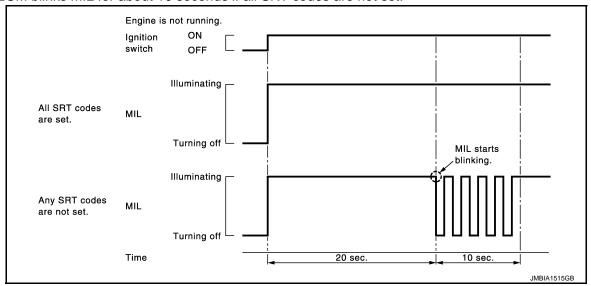
[MR EXCEPT FOR NISMO RS MODELS]

< SYSTEM DESCRIPTION >

This function allows to read if ECM has completed the self-diagnoses of major emission control systems and components. For SRT, refer to EC-653, "DIAGNOSIS DESCRIPTION: System Readiness Test (SRT) Code".

Operation Procedure

- 1. Turn ignition switch ON and wait 20 seconds.
- 2. SRT status is indicated as shown blow.
 - ECM continues to illuminate MIL if all SRT codes are set.
 - ECM blinks MIL for about 10 seconds if all SRT codes are not set.



MALFUNCTION WARNING MODE

Description

In this function ECM turns on or blinks MIL when it detects a malfunction in the emission control system components and/or the powertrain control components (which affect vehicle emissions) to inform the driver that a malfunction has been detected.

Operation Procedure

- Turn ignition switch ON.
- Check that MIL illuminates.

If it remains OFF, check MIL circuit. Refer to <u>EC-653</u>, "<u>DIAGNOSIS DESCRIPTION</u>: <u>System Readiness Test (SRT) Code</u>".

- Start engine and let it idle.
 - For two trip detection logic diagnoses, ECM turns on MIL when it detects the same malfunction twice in the two consecutive driving cycles.
 - For 1st trip detection logic diagnoses, ECM turns on MIL when it detects a malfunction in one driving cycle.
 - ECM blinks MIL when it detects a malfunction that may damage the three way catalyst (misfire).

CONSULT Function

INFOID:0000000011610820

FUNCTION

Diagnostic test mode	Function		
Self Diagnostic Results	Self-diagnostic results such as 1st trip DTC, DTCs and 1st trip freeze frame data or freeze frame data can be read and erased quickly.*		
Data Monitor	Input/Output data in the ECM can be read.		
Work support	This mode enables a technician to adjust some devices faster and more accurately by following the indications on the CONSULT unit.		
Active Test	Diagnostic Test Mode in which CONSULT drives some actuators apart from the ECMs and also shifts some parameters in a specified range.		

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Diagnostic test mode	Function
Ecu Identification	ECM part number can be read.
DTC Work Support	The status of system monitoring tests and the self-diagnosis status/results can be confirmed.

*: The following emission-related diagnostic information is cleared when the ECM memory is erased.

- · Diagnostic trouble codes
- · 1st trip diagnostic trouble codes
- · Freeze frame data
- · 1st trip freeze frame data
- · System readiness test (SRT) codes
- Test values

SELF DIAGNOSTIC RESULT MODE

Self Diagnostic Item

Regarding items of DTC and 1st trip DTC, refer to EC-694, "DTC Index".

How to Read DTC and 1st Trip DTC

DTCs and 1st trip DTCs related to the malfunction are displayed in "Self-diag results".

- When ECM detects a 1st trip DTC, "1t" is displayed for "TIME".
- When ECM has detected a current DTC, "0" is displayed for "TIME".
- If "TIME" is neither "0" nor "1t", the DTC occurred in the past and ECM shows the number of times the vehicle has been driven since the last detection of the DTC.

How to Erase DTC and 1st Trip DTC

NOTE:

If the ignition switch stays ON after repair work, be sure to turn ignition switch OFF once. Wait at least 10 seconds and then turn it ON (engine stopped) again.

Freeze Frame Data and 1st Trip Freeze Frame Data

Freeze frame data item*	Description		
DIAG TROUBLE CODE [PXXXX]	The engine control component part/control system has a trouble code the is displayed as PXXXX. (Refer to EC-694, "DTC Index".)		
CAL/LD VALUE [%]	The calculated load value at the moment a malfunction is detected is displayed.		
COOLANT TEMP [°C] or [°F]	The engine coolant temperature at the moment a malfunction is detected is displayed.		
L-FUEL TRM-B1 [%]	"Long-term fuel trim" at the moment a malfunction is detected is displayed.		
L-FUEL TRM-B2 [%]	 The long-term fuel trim indicates much more gradual feedback compensation to the base fuel schedule than short-term fuel trim. 		
S-FUEL TRM-B1 [%]	"Short-term fuel trim" at the moment a malfunction is detected is displayed.		
S-FUEL TRM-B2 [%]	 The short-term fuel trim indicates dynamic or instantaneous feedback compensation to the base fuel sched- ule. 		
ENGINE SPEED [rpm]	The engine speed at the moment a malfunction is detected is displayed.		
VEHICL SPEED [km/h] or [mph]	The vehicle speed at the moment a malfunction is detected is displayed.		
INT MANI PRES [kPa]	These items are displayed but are not applicable to this model.		
ABSOL TH-P/S [%]	The throttle valve opening angle at the moment a malfunction is detected is displayed.		
B/FUEL SCHDL [msec]	The base fuel schedule at the moment a malfunction is detected is displayed.		
INT/A TEMP SE [°C] or [°F]	The intake air temperature at the moment a malfunction is detected is displayed.		

EC-657 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Ν

[MR EXCEPT FOR NISMO RS MODELS]

Freeze frame data item*	Description
FUEL SYS-B1	"Fuel injection system status" at the moment a malfunction is detected is displayed.
FUEL SYS-B2	One of the following mode is displayed. Mode2: Open loop due to detected system malfunction Mode3: Open loop due to driving conditions (power enrichment, deceleration enleanment) Mode4: Closed loop - using oxygen sensor(s) as feedback for fuel control Mode5: Open loop - has not yet satisfied condition to go to closed loop
COMBUST CONDI- TION	These items are displayed but are not applicable to this model.
FUEL RAIL PRES- SURE [MPa]	The fuel rail pressure at the moment a malfunction is detected is displayed.
TARGET FUEL RAIL PRESSURE [MPa]	The target fuel rail pressure at the moment a malfunction is detected is displayed.
BATTERY VOLTAGE [V]	The battery voltage at the moment a malfunction is detected is displayed.
FUEL LEVEL [%]	The fuel level at the moment a malfunction is detected is displayed.

^{*:} The items are the same as those of 1st trip freeze frame data.

DATA MONITOR MODE

NOTE:

- The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.
- For reference values of the following items, refer to EC-668, "Reference Value".

Monitored Item

×: Applicable

Monitored item	Unit	Description	Remarks
ENG SPEED	rpm	Indicates the engine speed computed from the signal of the crankshaft position sensor (POS) and camshaft position sensor (PHASE).	 Accuracy becomes poor if engine speed drops below the idle rpm. If the signal is interrupted while the engine is running, an abnormal value may be indicated.
MASS AIR FLOW SENSOR (Hz)	Hz	The signal frequency of the mass air flow sensor is displayed.	
B/FUEL SCHDL	msec	"Base fuel schedule" indicates the fuel injection pulse width programmed into ECM, prior to any learned on board correction.	When engine is running specification range is indicated in "SPEC".
A/F ALPHA-B1	%	The mean value of the air-fuel ratio feedback correction factor per cycle is indicated.	 When the engine is stopped, a certain value is indicated. When engine is running specification range is indicated in "SPEC". This data also includes the data for the air-fuel ratio learning control.
COOLAN TEMP/S	°C or °F	The engine coolant temperature (determined by the signal voltage of the engine coolant temperature sensor) is displayed.	When the engine coolant temperature sensor is open or short-circuited, ECM enters fail-safe mode. The engine coolant temperature determined by the ECM is displayed.
A/F SEN1 (B1)	V	The A/F signal computed from the input signal of the air fuel ratio (A/F) sensor 1 is displayed.	
HO2S2 (B1)	V	The signal voltage of the heated oxygen sensor 2 is displayed.	
HO2S2 MNTR(B1)	RICH/LEAN	Display of heated oxygen sensor 2 signal: RICH: means the amount of oxygen after three way catalyst is relatively small. LEAN: means the amount of oxygen after three way catalyst is relatively large.	When the engine is stopped, a certain value is indicated.

< SYSTEM DESCRIPTION >

Monitored item	Unit	Description	Remarks
VHCL SPEED SE	km/h or mph	The vehicle speed computed from the vehicle speed signal sent from combination meter is displayed.	
BATTERY VOLT	V	The power supply voltage of ECM is displayed.	
ACCEL SEN 1	.,	The accelerator pedal position sensor signal volt-	ACCEL SEN 2 signal is converted by
ACCEL SEN 2	V	age is displayed.	ECM internally. Thus, it differs from ECM terminal voltage signal.
TP SEN 1-B1	V	The throttle position sensor signal voltage is dis-	TP SEN 2-B1 signal is converted by
TP SEN 2-B1	V	played.	ECM internally. Thus, it differs from ECM terminal voltage signal.
START SIGNAL	ON/OFF	Indicates start signal status [ON/OFF] computed by the ECM according to the signals of engine speed and battery voltage.	After starting the engine, [OFF] is displayed regardless of the starter signal.
CLSD THL POS	ON/OFF	Indicates idle position [ON/OFF] computed by ECM according to the accelerator pedal position sensor signal.	
AIR COND SIG	ON/OFF	Indicates [ON/OFF] condition of the air conditioner switch as determined by the air conditioner signal.	
PW/ST SIGNAL	ON/OFF	[ON/OFF] condition of the power steering system (determined by the signal sent from EPS control unit) is indicated.	
LOAD SIGNAL	ON/OFF	 Indicates [ON/OFF] condition from the electrical load signal. ON: Rear window defogger switch is ON and/or lighting switch is in 2nd position. OFF: Both rear window defogger switch and lighting switch are OFF. 	
IGNITION SW	ON/OFF	Indicates [ON/OFF] condition from ignition switch signal.	
HEATER FAN SW	ON/OFF	Indicates [ON/OFF] condition from the heater fan switch signal.	
BRAKE SW	ON/OFF	Indicates [ON/OFF] condition from the stop lamp switch signal.	
IGN TIMING	BTDC	Indicates the ignition timing computed by ECM according to the input signals.	When the engine is stopped, a certain value is indicated.
COMBUSTION	_	These items are displayed but are not applicable to this model.	
CAL/LD VALUE	%	"Calculated load value" indicates the value of the current airflow divided by peak airflow.	
MASS AIRFLOW	g/s	Indicates the mass airflow computed by ECM according to the signal voltage of the mass airflow sensor.	
PURG VOL C/V	%	 Indicates the EVAP canister purge volume control solenoid valve control value computed by the ECM according to the input signals. The opening becomes larger as the value increases. 	
INT/V TIM(B1)	°CA	Indicates [°CA] of intake camshaft advance angle.	
EXH/V TIM B1	°CA	Indicates [°CA] of exhaust camshaft retard angle.	
INT/V SOL(B1)	%	 The control value of the intake valve timing control solenoid valve (determined by ECM according to the input signals) is indicated. The advance angle becomes larger as the value increases. 	

< SYSTEM DESCRIPTION >

Monitored item	Unit	Description	Remarks
AIR COND RLY	ON/OFF	The air conditioner relay control condition (determined by ECM according to the input signals) is indicated.	
FUEL PUMP RLY	ON/OFF	Indicates the fuel pump relay control condition determined by ECM according to the input signals.	
THRTL RELAY	ON/OFF	Indicates the throttle control motor relay control condition determined by the ECM according to the input signals.	
HO2S2 HTR (B1)	ON/OFF	Indicates [ON/OFF] condition of heated oxygen sensor 2 heater determined by ECM according to the input signals.	
ALT DUTY SIG	ON/OFF	 The control condition of the power generation voltage variable control (determined by ECM according to the input signals) is indicated. ON: Power generation voltage variable control is active. OFF: Power generation 	
I/P PULLY SPD	rpm	Indicates the engine speed computed from the input speed sensor signal.	
VEHICLE SPEED	km/h or mph	The vehicle speed computed from the vehicle speed signal sent from TCM is displayed.	
IDL A/V LEARN	YET/CMPLT	 Display the condition of Idle Air Volume Learning YET: Idle air volume learning has not been performed yet. CMPLT: Idle air volume learning has already been performed successfully. 	
TRVL AFTER MIL	km/h or mph	Distance traveled while MIL is activated.	
ENG OIL TEMP	°C or °F	The engine oil temperature (determined by the signal voltage of the engine oil temperature sensor) is displayed.	
A/F S1 HTR(B1)	%	 Air fuel ratio (A/F) sensor 1 heater control value computed by ECM according to the input signals. The current flow to the heater becomes larger as the value increases. 	
INT/A TEMP SE	°C or °F	The intake air temperature (determined by the signal voltage of the intake air temperature sensor) is indicated.	
SET VHCL SPD	km/h or mph	The preset vehicle speed is displayed.	
MAIN SW	ON/OFF	Indicates [ON/OFF] condition from ASCD MAIN switch signal.	
CANCEL SW	ON/OFF	Indicates [ON/OFF] condition from CANCEL switch signal.	
RESUME/ACC SW	ON/OFF	Indicates [ON/OFF] condition from ACCEL/RES switch signal.	
SET SW	ON/OFF	Indicates [ON/OFF] condition from COAST/SET switch signal.	
BRAKE SW1	ON/OFF	Indicates [ON/OFF] condition from brake pedal position switch signal.	
BRAKE SW2	ON/OFF	Indicates [ON/OFF] condition of stop lamp switch signal.	
VHCL SPD CUT	NON/CUT	Indicates the vehicle cruise condition. NON: Vehicle speed is maintained at the ASCD set speed. CUT: Vehicle speed decreased to excessively low compared with the ASCD set speed, and ASCD operation is cut off.	

< SYSTEM DESCRIPTION >

Monitored item	Unit	Description	Remarks	
LO SPEED CUT	NON/CUT	Indicates the vehicle cruise condition. NON: Vehicle speed is maintained at the ASCD set speed. CUT: Vehicle speed decreased to excessively low, and ASCD operation is cut off.		E
AT OD MONITOR	ON/OFF	Indicates [ON/OFF] condition of CVT O/D according to the input signal from the TCM.	For M/T models, always "OFF" is displayed.	(
AT OD CANCEL	ON/OFF	Indicates [ON/OFF] condition of CVT O/D cancel request signal.	For M/T models, always "OFF" is displayed.	· ·
CRUISE LAMP	ON/OFF	Indicates [ON/OFF] condition of CRUISE lamp determined by the ECM according to the input signals.		
SET LAMP	ON/OFF	Indicates [ON/OFF] condition of SET lamp determined by the ECM according to the input signals.		
FUN DUTY	%	Indicates a command value for cooling fan. The value is calculated by ECM based on input signals.		
ALT DUTY	%	Indicates the duty ratio of the power generation command value. The ratio is calculated by ECM based on the battery current sensor signal.		
BAT CUR SEN	mV	The signal voltage of battery current sensor is displayed.		
A/F ADJ-B1	_	Indicates the correction of a factor stored in ECM. The factor is calculated from the difference between the target air-fuel ratio stored in ECM and the air-fuel ratio calculated from A/F sensor 1 signal.		
P/N POSI SW	ON/OFF	Indicates [ON/OFF] condition from the park/neutral position (PNP) signal.		
AC PRESS SEN	V	The signal voltage from the refrigerant pressure sensor is displayed.		
FUEL PRES SEN	MPa	Indicates the fuel rail pressure computed by ECM according to the input signals.		
TURBO BST SEN	V	The turbocharger boost sensor signal voltage is displayed.		
FUEL INJ TIM	BTDC	Indicates the fuel injection timing computed by ECM according to the input signals.		
FUEL INJ B1	msec	ECM-calculated injection pulse width of the fuel injector on the Bank 1 side.		
BAT TEMP SEN	V	The signal voltage from the battery temperature sensor is displayed.		
A/F SEN1 DIAG2(B1) [*]	INCMP/CM- PLT	 Indicates DTC P0133 self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete. 		
HO2 S2 DIAG1(B1)	INCMP/CM- PLT	Indicates DTC P0139 self-diagnosis (delayed response) condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete.		
HO2 S2 DIAG2(B1)*	INCMP/CM- PLT	Indicates DTC P0139 self-diagnosis (slow response) condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete.		
H/P FUEL PUMP DEG	deg	Displays ECM-calculated fuel discharge position of the high pressure fuel pump.		
FUEL PRES SEN V	mV	The signal voltage of FRP sensor is displayed.		
EOP SENSOR	mV	The signal voltage of EOP sensor is displayed.		

< SYSTEM DESCRIPTION >

Monitored item	Unit	Description	Remarks
BOOST S/V DUTY	%	The turbocharger boost control valve control condition (determined by ECM according to the input signals) is indicated.	
ATOM PRESS SEN	V	The atmospheric pressure sensor signal voltage is displayed.	
ECM TEMP 1 ECM TEMP 2	°C or °F	The ECM temperature is indicated.	
A/F-S ATMSPHRC CRCT B1	_	Displays a determined value of atmospheric correction factor necessary for correcting an A/F sensor signal input to ECM. The signal used for the correction is an A/F sensor signal transmitted while driving under atmospheric pressure.	
A/F-S ATMSPHRC CRCT UP B1	count	Displays the number of updates of the A/F sensor atmospheric correction factor.	
SL TRG VHCL SPD	km/h or mph	The preset speed limiter vehicle speed is displays.	 A certain constant value is displayed while mode other than speed limiter control being activated. When the speed limiter is released by other method than the main switch, the vehicle speed indicated during the standby mode is the one that is previously set before releasing the speed limiter.
SL SET LAMP	ON/OFF	Indicates [ON/OFF] condition of speed limiter SET indicator determined by the ECM according to the input signals.	
SL LIMIT LAMP	ON/OFF	Indicates [ON/OFF] condition of speed limiter LIMIT indicator determined by the ECM according to the input signals.	
SL MAIN SW	ON/OFF	Indicates [ON/OFF] condition from speed limiter MAIN switch signals.	
KICKDOWN POS	ON/OFF	Indicates [ON/OFF] condition of kickdown determined by the ECM according to the input signals.	
EGR TEMP SEN	V	The signal voltage of EGR temperature sensor is displayed.	
EGR VALVE POSI- TION	deg	ECM-calculated EGR valve position is displayed.	
EGR VALVE POSI- TION SEN	V	The signal voltage of EGR valve position sensor is displayed.	
EGR DIFFEREN- TIAL PRESS	kPa	Displays ECM-calculated pressure difference between before and behind the EGR volume control valve.	
W/G ACTUATOR POSITION B1	m	Indicates real stroke position of turbocharger wastegate actuator. The value is calculated by ECM based on the difference voltage between position sensor output and valve close position.	
W/G ACTUATOR POSI SEN B1	V	Indicates position sensor output voltage of turbo- charger wastegate actuator.	
W/GATE V CLSD LEARN B1	INCMP/CM- PLT	Displays "full close position learning" experience of wastegate actuator. INCMP: Learning is incomplete. There is no memory of the full close position voltage in the ECM. CMPLT: Learning is complete. Full close position voltage is memory in the ECM.	After replacing ECM, "INCMP" is displayed.

< SYSTEM DESCRIPTION >

Monitored item	Unit	Description	Remarks	٨
RADIATOR COOL- ANT TEMP	°C or °F	Description: The radiator coolant temperature (determined by the signal voltage of the radiator coolant temperature sensor) is displayed.		A
ENGINE COOLANT B/V POSI	deg	Description: The Multi-way Control Valve position detected by the position sensor is displayed.		EC
AC EVA TEMP	°C or °F	Indicates A/C evaporator temperature sent from "unified meter and A/C amp".		С
AC EVA TARGET	°C or °F	Indicates target A/C evaporator temperature sent from "unified meter and A/C amp".		_
STRT OPRTN CNTR	count	Starter motor operation counter is displayed.	Indicated multiplication value of the starter motor operation of key switch operation and the restart.	D
CML B/DCHG CRNT	_	Cumulative battery discharge current is displayed.	ECM judges whether stop/start system is possible according to battery state.	Е
A/F LRN CNTR B1	_	NOTE: The item is indicated, but not used.		F
MASS AIR FLOW SENSOR (HZ)	Hz	The value is air flow meter output frequency. This output decide fuel injection quantity.		
EXHAUST GAS TEMP SEN 1 B1	V	The signal voltage of exhaust gas temperature sensor is displayed.		G
SWRL CONT S/V	_	Indicates open/close condition of intake manifold control valve.		Н
BATTERY STS	OK/NG	Indicated [OK/NG] condition of battery output.		11
AT STOP START SW	ON/OFF	Indicates [ON/OFF] condition stop/start OFF switch signal.		ı
CPP SW	ON/OFF	Indicates [ON/OFF] condition from clutch pedal position switch signal.		
CLUTCH INTLCK SW	ON/OFF	Indicates [ON/OFF] condition from clutch interlock switch signal.		J
THRTL STK CNT B1	_	NOTE: The item is indicated, but not used.		K
A/F SEN1 DIAG1 (B1)	INCMP/CM- PLT	Indicates DTC P015A or P015B self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete.		L
A/F SEN1 DIAG2 (B1)	INCMP/CM- PLT	Indicates DTC P014C or P014D self-diagnosis condition. INCMP: Self-diagnosis is incomplete. CMPLT: Self-diagnosis is complete.		M
A/F SEN1 DIAG3 (B1)	ABSNT/ PRSNT	 Indicates DTC P014C, P014D, P015A or P015B self-diagnosis condition. ABSNT: The vehicle condition is not within the diagnosis range. PRSNT: The vehicle condition is within the diagnosis range. 		N
A/F-S ATMSPHRC CRCT B1	_	Displays a determined value of atmospheric correction factor necessary for correcting an A/F sensor signal input to ECM. The signal used for the correction is an A/F sensor signal transmitted while driving under atmospheric pressure.		Р
A/F-S ATMSPHRC CRCT UP B1	count	Displays the number of updates of the A/F sensor atmospheric correction factor.		
FUEL T/TMP SE	°C or °F	The fuel temperature (determined by the signal voltage of the fuel tank temperature sensor) is displayed.		

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Monitored item	Unit	Description	Remarks
FUEL LEVEL SE	V	The signal voltage of the fuel level sensor is displayed.	
EVAP LEAK DIAG	YET/CMPLT	 Indicates the condition of EVAP leak diagnosis. YET: EVAP leak diagnosis has not been performed yet. CMPLT: EVAP leak diagnosis has been performed successfully. 	
EVAP DIAG READY	ON/OFF	Indicates the ready condition of EVAP leak diagnosis. ON: Diagnosis has been ready condition. OFF: Diagnosis has not been ready condition.	
G SENSOR	V	The signal voltage of G sensor is displayed	
TUMBLE POS SEN	V	The intake manifold runner control valve position sensor signal voltage is displayed.	
EVAP SYS PRES	V	The signal voltage of EVAP control system pressure sensor is displayed.	

^{*:} The item is indicated, but not used.

NOTE:

Any monitored item that does not match the vehicle being diagnosed is deleted from the display automatically.

WORK SUPPORT MODE

Work Item

Work item	Condition	Usage
IDLE AIR VOL LEARN	The idle air volume that keeps the engine within the specified range is memorized in ECM.	When learning the idle air volume.
FUEL PRESSURE RELEASE	Crank a few times after engine stalls.	When releasing fuel pressure from fuel line.
TARGET IGN TIM ADJ*	Idle condition	When adjusting target ignition timing.
TARGET IDLE RPM ADJ*	Idle condition	When setting target idle speed.
SELF-LEARNING CONT	The coefficient of self-learning control mixture ratio returns to the original coefficient.	When clearing mixture ratio self-learning value.
G SENSOR CALIBRATION	Park the vehicle on a flat road.Adjust pressure in all tires to the specified value.	Calibrates G sensor.
WASTEGATE ACTUATOR POSI LEARN VALUE CLEAR	Ignition switch is ON and Engine running	When learning full close position of wastegate actuator after ECM or turbocharger assembly is replaced.
ENGINE COOLANT BYPASS VALVE	Condition: The valve is in the full opening position	When filing with coolant.
A/F INITIAL LEARNING	Air fuel ratio learning frequency is low while idling, learning the air fuel ratio of the idling domain in ECM.	When learning the air fuel ratio.
VALVE TIMING OFFSET DATA WRITING	Ignition switch: ON (Engine stopped)	When adjusting valve timing offset angle after ECM or engine assembly is replaced.
VALVE TIMING OFFSET DATA CLEAR	Ignition switch: ON (Engine stopped)	When clear the valve timing offset angle data after replacing the camshaft or timing chain.
CLSD THL POS LEARN	Ignition on and engine stopped.	When learning the throttle valve closed position

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

F

G

Work item	Condition	Usage
EVAP SYSTEM CLOSE	Close the EVAP canister vent control valve in order to make EVAP system close under the following conditions. Ignition switch ON Engine not running Ambient temperature is above 0°C (32°F) No vacuum and no high pressure in EVAP system Fuel tank temperature is more than 0°C (32°F) Within 10 minutes after starting "EVAP SYSTEM CLOSE" When trying to execute "EVAP SYSTEM CLOSE" under the condition except above, CONSULT will discontinue it and display appropriate instruction. NOTE: When starting engine, CONSULT may display "Battery voltage is low. Charge battery", even in using charged battery.	When detecting EVAP vapor leak point of EVAP system
VIN REGISTRATION	In this mode, VIN is registered in ECM.	When registering VIN in ECM
SAVING DATA FOR REPLC CPU	In this mode, save data that is in ECM.	When ECM is replaced.
WRITING DATA FOR REPLC CPU	In this mode, write data stored by "SAVE DATA FOR CPU REPLC" in work support mode to ECM.	When ECM is replaced.

^{*:} This function is not necessary in the usual service procedure.

ACTIVE TEST MODE

Test Item

Test item	Condition	Judgement	Check item (Remedy)
ENG COOLANT TEMP	Engine: Return to the original trouble condition Change the engine coolant temperature using CONSULT.	If trouble symptom disappears, see Check item.	Harness and connectors Engine coolant temperature sensor Fuel injector
FUEL INJECTION	Engine: Return to the original trouble condition Change the amount of fuel injection using CONSULT.	If trouble symptom disappears, see Check item.	Harness and connectors Fuel injector Air fuel ratio (A/F) sensor 1
PURG VOL CONT/V	 Engine: After warming up, run engine at 1,500 rpm. Change the EVAP canister purge volume control solenoid valve opening percent using CONSULT. 	Engine speed changes according to the opening percent.	Harness and connectors Solenoid valve
FUEL PUMP RELAY	 Ignition switch: ON Engine stopped Turn the fuel pump relay "ON" and "OFF" using CONSULT and listen to operating sound. 	Fuel pump relay makes the operating sound.	Harness and connectors Fuel pump relay
IGNITION TIMING	 Engine: Return to the original trouble condition Timing light: Set Retard the ignition timing using CONSULT. 	If trouble symptom disappears, see Check item.	Perform Idle Air Volume Learning.
FAN DUTY CON- TROL*	Ignition switch: ON Change duty ratio using CON-SULT.	Cooling fan speed changes.	Harness and connectors Cooling fan motor Cooling fan relay Cooling fan control module IPDM E/R
ALTERNATOR DUTY	Ignition switch: ON Change duty ratio using CON- SULT.	Battery voltage changes.	Harness and connectors Alternator IPDM E/R

Revision: 2014 October EC-665 2015 JUKE

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Test item	Condition	Judgement	Check item (Remedy)
POWER BALANCE	 Engine: After warming up, idle the engine. A/C switch OFF Shift lever: P or N (CVT), Neutral (M/T) Cut off each fuel injector signal one at a time using CONSULT. 	Engine runs rough or dies.	Harness and connectors Compression Fuel injector Power transistor Spark plug Ignition coil
EGR CONTROL VALVE	Ignition switch: ON Engine stopped Change valve target angle using CONSULT	Valve opening angle changes according to target angle (from 0deg to 70deg)	Harness and connectors EGR valve
VALVE TIMING OFF- SET DATA WRITING	Ignition switch: ON Engine stopped Change the wastegate target stroke using CONSULT	Wastegate position sensor output voltage changes according to target stroke value.	Harness and connectors Wastegate actuator (Removal wastegate actuator from turbocharger is NG) Turbocharger assembly
TC BYPASS VALVE	Ignition switch: ON Engine stopped or Engine running (idling, less than 1200rpm) Input "ON" "OFF" signal using CONSULT	Bypass valve makes the operating sound.	Harness and connectors Turbocharger bypass valve (Removal bypass valve from Turbocharger is NG) Turbocharger assembly
ENGINE OIL PRES- SURE CONTROL SOLENOID VALVE	Water temperature: > -10°C Engine oil temperature: < 120°C (248°F) Engine speed: < 4000rpm	Engine oil pressure change	Harness and connectors Engine oil pressure control solenoid valve Engine oil pressure sensor Engine oil pump
SWRL CONT S/V VALVE	Ignition switch: ON Engine stopped Turn the intake manifold runner control valve "ON" and "OFF" using CONSULT to open or close.	Touch the intake manifold runner control valve motor and check the operating vibration and sound.	Harness and connectors Intake manifold runner control valve Intake manifold runner control valve motor
AUTO STOP START	Engine: After warming up, run engine at idle Shift lever: Neutral position "Start" and "Cancel" using CONSULT.	Check the stop/start system operate and restart.	Harness and connectors IPDM E/R Starter motor Engine restart relay Starter control relay DC/DC converter Battery
	CAUTION: Be careful so that a hood operate	es in the opened state when carry o	ut work.
WASTEGATE ACTU- ATOR	Ignition switch: ON Engine stopped Change valve of wastegate actuator target angle using CONSULT	Wastegate valve position sensor voltage changes according to valve target angle	Harness and connectors Electric wastegate control actuator (Removal bypass valve from turbocharger is NG) Turbocharger assembly
VENT CONTROL/V	Ignition switch: ON Engine stopped Turn solenoid valve ON and OFF with the CONSULT and listen to operating sound.	Solenoid valve makes an operating sound.	Harness and connectors EVAP canister vent control solenoid valve

^{*:} Leaving cooling fan OFF with CONSULT while engine is running may cause the engine to overheat.

DTC WORK SUPPORT MODE

Test Item

Test mode	Test item	Corresponding DTC No.	Reference page
EVAPORATIVE SYS-	PURG VOL CN/V P1444	P0443	EC-968
TEM	PURG FLOW P0441	P0441	EC-962

< SYSTEM DESCRIPTION >

[MR EXCEPT FOR NISMO RS MODELS]

Test mode	Test item	Corresponding DTC No.	Reference page
	HO2S2 (B1) P1146	P0138	EC-872
HO2S2	HO2S2 (B1) P1147	P0137	EC-866
	HO2S2 (B1) P0139	P0139	EC-879
A/F SEN1	A/F SEN1 (B1) P1278/P1279	_	
AVF SEIVI	A/F SEN1 (B1) P1276	P0130	EC-856

SRT & P-DTC MODE

SRT STATUS Mode

- For items whose SRT codes are set, "CMPLT" is displayed on the CONSULT screen; for items whose SRT codes are not set, "INCMP" is displayed.
- "SRT STATUS" provides the presence or absence of permanent DTCs stored in ECM memory.

PERMANENT DTC STATUS Mode

How to display permanent DTC status

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select "PERMANENT DTC STATUS" in "DTC & SRT CONFIRMATION" mode with CONSULT. NOTE:

Permanent DTCs stored in ECM memory are displayed on the CONSULT screen to show if a driving pattern required for erasing permanent DTCs is complete (CMPLT) or incomplete (INCMP).

CAUTION:

Since the "PERMANENT DTC STATUS" screen displays the previous trip information, repeat the following twice to update the information: "Ignition switch OFF", "Wait for more than 10 seconds" and "Ignition switch ON".

CAUTION: Turn ignition switch from O status screen.	N to OFF twice to update the informa	ation on the
PERMANENT DTC	DRIVING PATTERN B	DRIVING PATTERN D
XXXX	INCMP	INCMP
xxxx	CMPLT	INCMP
xxxx	INCMP	CMPLT
xxxx	CMPLT	INCMP
XXXX	INCMP	INCMP
XXXX	INCMP	INCMP

NOTE:

This mode is not used in regions that permanent DTCs are not regulated by law.

SRT WORK SUPPORT Mode

This mode enables a technician to drive a vehicle to set the SRT while monitoring the SRT status.

PERMANENT DTC WORK SUPPORT Mode

This mode enables a technician to drive a vehicle to complete the driving pattern that is required for erasing permanent DTC.

NOTE:

This mode is not used in regions that permanent DTCs are not regulated by law.

1/

Α

EC

Е

F

Н

N

]

JSBIA0062GB

ECU DIAGNOSIS INFORMATION

ECM

Reference Value

VALUES ON THE DIAGNOSIS TOOL

NOTE:

- The following table includes information (items) inapplicable to this vehicle. For information (items) applicable to this vehicle, refer to CONSULT display items.
- Numerical values in the following table are reference values.
- These values are input/output values that ECM receives/transmits and may differ from actual operations.
 Example: The ignition timing shown by the timing light may differ from the ignition timing displayed on the data monitor.

This occurs because the timing light shows a value calculated by ECM according to signals received from the camshaft position sensor and other sensors related to ignition timing.

For outlines of following items, refer to <u>EC-656</u>, "CONSULT Function".

Monitor Item	C	Condition	Values/Status
ENG SPEED	Run engine and compare CONSULT	Γ value with the tachometer indication.	Almost the same speed as the tachometer indication.
MASS AIR FLOW SENSOR (Hz)	See EC-771, "Diagnosis Procedure"		
B/FUEL SCHDL	See EC-771, "Diagnosis Procedure"	5	
A/F ALPHA-B1	See EC-771, "Diagnosis Procedure".		
COOLANT TEMP/S	Engine: After warming up		More than 70°C (158°F)
RADIATOR COOL- ANT TEMP	Engine: running		0 - 4.8 V
	Ignition switch: ON Cold condition		Approx. 207 deg
ENGINE COOLANT		Engine coolant temperature: 64°C (148°F)	Approx. 63 deg
B/V POSI	Engine: Idle	Engine coolant temperature: 75°C (167°F)	Approx. 99 deg
		Engine coolant temperature: 86-100°C (187- 212°F)	Approx. 163 deg
A/F SEN1 (B1)	Engine: After warming up	Maintaining engine speed at 2,000 rpm	Fluctuates around 1.5 V
HO2S2 (B1)	Revving engine from idle up to 3,000 rpm quickly after the following conditions are met.		0 - 0.3 V ←→ Approx. 0.6 - 1.0 V
HO2S2 MNTR(B1)	 Revving engine from idle up to 3,000 rpm quickly after the following conditions are met. Engine: After warming up After keeping engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 		$LEAN \longleftrightarrow RICH$
VHCL SPEED SE	Turn drive wheels and compare COI tion.	NSULT value with the speedometer indica-	Almost the same speed as speedometer indication
BATTERY VOLT	Ignition switch: ON (Engine stopped)	11 - 14 V
ACCEL SENIA	Ignition switch: ON	Accelerator pedal: Fully released	0.6 - 0.9 V
ACCEL SEN 1	(Engine stopped)	Accelerator pedal: Fully depressed	4.0 - 4.8 V
ACCEL SEN 2*1	Ignition switch: ON	Accelerator pedal: Fully released	Approx. 0.8 V
ACCEL SEN Z '	(Engine stopped)	Accelerator pedal: Fully depressed	Approx. 4.6 V

Monitor Item	С	ondition	Values/Status
	Ignition switch: ON	Accelerator pedal: Fully released	More than 0.36 V
TP SEN 1-B1	(Engine stopped)Selector lever: D (CVT), 1st (M/T)	Accelerator pedal: Fully depressed	Less than 4.75 V
TD 0511 0 D 4#	Ignition switch: ON	Accelerator pedal: Fully released	More than 0.36 V
TP SEN 2-B1*	(Engine stopped)Selector lever: D (CVT), 1st (M/T)	Accelerator pedal: Fully depressed	Less than 4.75 V
START SIGNAL	Ignition switch: $ON \rightarrow START \rightarrow ON$		$OFF \to ON \to OFF$
CLSD THL POS	Ignition switch: ON	Accelerator pedal: Fully released	ON
JESD THE POS	(Engine stopped)	Accelerator pedal: Slightly depressed	OFF
	Engine: After warming up, idle the	Air conditioner switch: OFF	OFF
AIR COND SIG	engine	Air conditioner switch: ON (Compressor operates.)	ON
DW/CT CICNAL	Engine: After warming up, idle the	Steering wheel: Not being turned	OFF
PW/ST SIGNAL	engine	Steering wheel: Being turned	ON
LOAD SIGNAL	lanition quitale ON	Rear window defogger switch: ON and/or Lighting switch: 2nd position	ON
LOAD SIGNAL	Ignition switch: ON	Rear window defogger switch and lighting switch: OFF	OFF
GNITION SW	Ignition switch: $ON \rightarrow OFF \rightarrow ON$		$ON \to OFF \to ON$
IEATER FAN SW	Engine: After warming up, idle the	Heater fan switch: ON	ON
IEATER FAIN SW	engine	Heater fan switch: OFF	OFF
BRAKE SW	Ignition switch: ON	Brake pedal: Fully released	OFF
JOURE OVV	ignition switch. Of	Brake pedal: Slightly depressed	ON
	Engine: After warming up	Idle	5° - 15° BTDC
GN TIMING	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	30° - 50° BTDC
COMBUSTION		_	These items are displayed but are not applicable to this model.
	Engine: After warming up Selector lever: P or N (CVT),	Idle	Approx. 21% (CVT models) Approx. 17% (M/T models)
CAL/LD VALUE	Neutral (M/T) • Air conditioner switch: OFF • No load	2,500 rpm	Approx. 15%
	Engine: After warming up	Idle	Approx. 1.6 g/s
MASS AIRFLOW	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,500 rpm	Approx. 5.0 g/s
PURG VOL C/V	Engine: After warming up Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF	Idle (Accelerator pedal: Not depressed even slightly, after engine starting.)	0 - 1%
	No load	2,000 rpm	1% - 90%
	Engine: After warming up	Idle	Approx. 36°CA
NT/V TIM(B1)	Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load	2,000 rpm	Approx. 18°CA

Monitor Item		Condition	Values/Status
EXH/V TIM B1	 Engine: After warming up Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	Around 2,500 rpm while the engine speed is rising	–5° - 5°CA Approx. 0° - 30°CA
INTA (001 (D.4)	Engine: After warming up Selector lever: P or N (CVT),	Idle	Approx. 46%
INT/V SOL(B1)	Neutral (M/T) • Air conditioner switch: OFF • No load	2,000 rpm	Approx. 46%
	Engine: After warming up, idle the	Air conditioner switch: OFF	OFF
AIR COND RLY	engine	Air conditioner switch: ON (Compressor operates)	ON
FUEL PUMP RLY	For 1 seconds after turning ignitionEngine running or cranking	on switch: ON	ON
	Except above		OFF
THRTL RELAY	Ignition switch: ON		ON
HO2S2 HTR (B1)	- Engine: After warming up	after the following conditions are met. en 3,500 and 4,000 rpm for 1 minute and at	ON
	Engine speed: Above 3,600 rpm	OFF	
W/GATE V CLSD	Ignition quitable ON	Waste gate valve closed learning has not been performed yet.	INCMP
LEARN B1	Ignition switch: ON	Waste gate valve closed learning has already been performed successfully.	CMPLT
	Ignition switch: ON	Approx. 0.008 m	
W/G ACTUATOR	Engine: After warming up	Idle	Approx. 0.008 m
POSITION B1		2,000 rpm	Approx. 0.008 m
		4,000 rpm	Approx. 0.008 m
	Ignition switch: ON	Approx. 4.0 V	
W/G ACTUATOR		Idle	Approx. 4.0 V
POSI SEN B1	Engine: After warming up	2,000 rpm	Approx. 4.0 V
		4,000 rpm	Approx. 4.0 V
	Ignition switch: ON		Approx. 1 deg
EGR VALVE POSI-		Idle	Approx. 0 deg
TION	Engine: After warming up	2,000 rpm	Approx. 0 deg
		4,000 rpm	Approx. 0 deg
	Ignition switch: ON		Approx. 1.26 V
EGR VALVE POSI-		Idle	Approx. 1.20 V
TION SEN	Engine: After warming up	2,000 rpm	Approx. 1.26 V
		4,000 rpm	Approx. 1.26 V
		Idle	Approx. 1 kPa
EGR DIFFEREN- TIAL PRESS	Engine: After warming up	2,000 rpm	Approx. 1 kPa
		4,000 rpm	Approx. 3 kPa
ALT DUTY SIG	Power generation voltage variable of	control: Operating	ON
ALI DUTT SIG	Power generation voltage variable of	control: Not operating	OFF
I/P PULLY SPD	Vehicle speed: More than 20 km/h (12 MPH)	Almost the same speed a

Monitor Item	C	Condition	Values/Status
VEHICLE SPEED	Turn drive wheels and compare CO tion.	NSULT value with the speedometer indica-	Almost the same speed as the speedometer indication
IDL A/V LEARN	Engine: running	Idle air volume learning has not been performed yet.	YET
IDE AV V LEAKN	Linguile. Turning	Idle air volume learning has already been performed successfully.	CMPLT
TRVL AFTER MIL	Ignition switch: ON	Vehicle has traveled after MIL has illuminated.	0 - 65,535 km (0 - 40,723 miles)
NG OIL TEMP	Engine: After warming up		More than 70°C (158°F)
VF S1 HTR(B1)	Engine: After warming up, idle the e (More than 260 seconds after startir		4 - 100%
NT/A TEMP SE	Ignition switch: ON		Indicates intake air temperature
SET VHCL SPD	Engine: Running	ASCD: Operating	The preset vehicle speed is displayed
MAIN SW	Ignition switch: ON	MAIN switch: Pressed	ON
MAIN OVV	Ignition switch: ON	MAIN switch: Released	OFF
CANCEL SW	Ignition switch: ON	CANCEL switch: Pressed	ON
JANUEL 3VV	Ignition switch: ON	CANCEL switch: Released	OFF
RESUME/ACC SW	Ignition switch: ON	ACCEL/RES switch: Pressed	ON
RESUME/ACC SW	Ignition switch: ON	ACCEL/RES switch: Released	OFF
SET SW	Ignition switch: ON	COAST/SET switch: Pressed	ON
DET 3VV	ignition switch. ON	COAST/SET switch: Released	OFF
BRAKE SW1		Brake pedal: Fully released	ON
Brake pedal posi- ion switch)	Ignition switch: ON	Brake pedal: Slightly depressed	OFF
BRAKE SW2	Ignition switch: ON	Brake pedal: Fully released	OFF
Stop lamp switch)		Brake pedal: Slightly depressed	ON
/HCL SPD CUT	Ignition switch: ON		NON
O SPEED CUT	Ignition switch: ON		NON
AT OD MONITOR	Ignition switch: ON		OFF
AT OD CANCEL	Ignition switch: ON		OFF
CRUISE LAMP	Ignition switch: ON	MAIN switch: Pressed at the 1st time \rightarrow at the 2nd time	$ON \to OFF$
	MAIN switch: ON	ASCD: Operating	ON
SET LAMP	When vehicle speed is between km/h (25 MPH) and 194 km/h (120 MPH)	ASCD: Not operating	OFF
FAN DUTY	Engine: Running	1	0 - 100%
ALT DUTY	Engine: Idle		0 - 80%
	Engine speed: Idle		
BAT CUR SEN	 Battery: Fully charged*2 Selector lever: P or N (CVT), Neu Air conditioner switch: OFF No load 	Approx. 2,600 - 3,500 mV	
A/F ADJ-B1	Engine: Running		-0.450 - 0.330
P/N POSI SW	Ignition switch: ON	Selector lever: P or N (CVT), Neutral (M/T)	ON
		Selector lever: Except above	OFF

Monitor Item	C	Condition	Values/Status
AC PRESS SEN	Engine: Idle Both A/C switch and blower fan s	witch: ON (Compressor operates)	1.0 - 4.0 V
	Engine: After warming up	Idle	Approx. 5.0 MPa
FUEL PRES SEN	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 2.5 MPa
TURBO BST SEN	Engine speed: Idle Selector lever: D (CVT), Neutral (M/T) Fuel: Premium gasoline	 The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-function meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	3.07 - 3.15 V
TURBU BST SEN	Engine speed: Idle Selector lever: D (CVT), Neutral (M/T) Fuel: Regular gasoline	 The accelerator pedal is depressed to a half stroke position or more. The readings of boost in the multi-func- tion meter are the same as the ambient pressure or more. Engine speed: More than 3,000 rpm 	2.91 - 2.99 V
	Engine: After warming up	Idle	Approx. 108 BTDC
FUEL INJ TIM	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. –68 BTDC
	Engine: After warming up	Idle	Approx. 1.1 msec
FUEL INJ B1	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 1.2 msec
BAT TEMP SEN	Engine: After warming up Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load	Idle	Approx. 0.68 V
A/F SEN1 DIAG1	DTC P015A and P015B self-diagno	sis is incomplete.	INCMP
(B1)	DTC P015A and P015B self-diagno	CMPLT	
A/F SEN1 DIAG2	DTC P014C and P014D self-diagno	sis is incomplete.	INCMP
(B1)	DTC P014C and P014D self-diagno	sis is complete.	CMPLT
A/F SEN1 DIAG3	The vehicle condition is not within the P015A or P015B.	ne diagnosis range of DTC P014C, P014D,	ABSNT
(B1)	The vehicle condition is within the d P015A or P015B.	PRSNT	
	DTC P0139 self-diagnosis (delayed	response) has not been performed yet.	INCMP
HO2 S2 DIAG1(B1)	DTC P0139 self-diagnosis (delayed cessfully.	response) has already been performed suc-	CMPLT
	DTC P0139 self-diagnosis (slow res	ponse) has not been performed yet.	INCMP
HO2 S2 DIAG2(B1)	DTC P0139 self-diagnosis (slow rescessfully.	sponse) has already been performed suc-	CMPLT
	Engine: After warming up	Idle	Approx. 241 deg
H/P FUEL PUMP DEG	 Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load 	2,000 rpm	Approx. 245 deg

[MR EXCEPT FOR NISMO RS MODELS]

Α

D

Е

F

G

Н

Κ

L

M

Ν

0

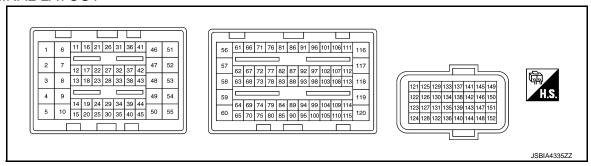
Ρ

Monitor Item	С	Condition	Values/Status
	Engine: After warming up	Idle	1,140 - 1,460 mV
FUEL PRES SEN V	Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load	Revving engine from idle to 4,000 rpm quickly	1,3000 - 2,900 mV
	Engine: After warming up	Idle	1,250 - 1,400 mV
EOP SENSOR	Selector lever: P or N (CVT), Neutral (M/T) Air conditioner switch: OFF No load	2,000 rpm	1,400 - 2,200 mV
		Idle	0 %
BOOST S/V DUTY	Engine: After warming up	The accelerator pedal is depressed to a half stroke position or more. Engine speed: Below 3,000 rpm	100 %
		 The accelerator pedal is depressed to a half stroke position or more. Engine speed: More than 3,000 rpm 	30 - 60 %
ATOM PRES SEN	Ignition switch: ON		3.15 - 4.60 V
A/F-S ATMSPHRC CRCT B1	Engine: After warming up, idle the e	ngine.	Varies depending on vehicle environment.
A/F-S ATMSPHRC CRCT UP B1	Engine: Running		Varies depending on the number of updates.
ECM TEMP 1	Engine: After cooling Ignition switch: ON	Indicates the temperature around the ECM.	
ECM TEMP 2	Engine: After cooling Ignition switch: ON	Indicates the temperature around the ECM.	
SL TRG VHCL SPD	Ignition switch: ON	Speed limiter operating	The preset vehicle speed is displayed
SL SET LAMP	Ignition switch: ON	Speed limiter: Not operating	OFF
SE SET LAWIF	Speed limiter MAIN switch: ON	Speed limiter: Operating	ON
SL LIMIT LAMP	Ignition switch: ON	Speed limiter MAIN switch: Pressed at the 1st time \rightarrow at the 2nd time	$ON \to OFF$
SL MAIN SW	Ignition switch: ON	Speed limiter MAIN switch: Pressed	ON
SE IVITAII V OVV	Igridion switch. ON	Speed limiter MAIN switch: Released	OFF
KICKDOWN POS	Ignition switch: ON	Accelerator pedal: Fully released	OFF
		Accelerator pedal: Fully depressed	ON
THRTL STK CNT B1	NOTE: The item is indicated, but not used.		_
FUEL T/TMP SE	Ignition switch: ON		Indicates fuel tank temperature.
FUEL LEVEL SE	Ignition switch: ON		Depending on fuel level of fuel tank
EVAP LEAK DIAG	Ignition switch: ON	Indicates the condition of EVAP leak diagnosis.	
EVAP DIAG READY	Ignition switch: ON		Indicates the ready condition of EVAP leak diagnosis.
G SENSOR	Vehicle is level		Approx. 2.5 V
TUMBLE POS SEN	Ignition switch: ON Engine coolant temperature: Between –)7°C (19°F) – (+)60°C	Accelerator pedal: Fully released Accelerator pedal: Fully depressed	Less than 1.4 V More than 2.8 V
	(140°F)		

[MR EXCEPT FOR NISMO RS MODELS]

- *1: Accelerator pedal position sensor 2 signal and throttle position sensor 2 signal are converted by ECM internally. Thus, they differ from ECM terminals voltage signal.
- *2: Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

TERMINAL LAYOUT



PHYSICAL VALUES

NOTE:

- ECM is located in the engine room left side near battery.
- Specification data are reference values and are measured between each terminal and ground.
- Pulse signal is measured by CONSULT.

	minal No. re color)	Description		Condition	Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
1 (GR)	10 (B)	Fuel injector No. 1, 4 (HI)	Output	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	2.7 V ★ 100mSec/div 20V/div JPBIA4718ZZ
2 (SB)	10 (B)	Fuel injector No. 2 (LO)	Output	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	2.7 V ★ 100mSec/div 20V/div 30V/div 30V/div 30V/div
3 (W)	10 (B)	Fuel injector No. 3 (LO)	Output	[Engine is running] • Engine speed is 2,000 rpm	3 V ★ 100mSec/div 20V/div 3 V ★ 100mSec/div
4 (G)	10 (B)	Fuel injector driver power supply 1	Input	[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)
5 (BR)	10 (B)	Fuel injector driver power supply 2	Input	[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)

Terminal No. (Wire color)		Description		0.018	Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
6 (R)	10 (B)	Fuel injector No. 4 (LO)	Output	[Engine is running] • Engine speed is 2,000 rpm	3 V ★ 100mSec/div 20V/div 3 V ★ 100mSec/div 100mSec/div
7 (LG)	10 (B)	Fuel injector No. 2, 3 (HI)	Output	[Engine is running] • Engine speed is 2,000 rpm	3 V ★ 100mSec/div 100mSec/div 20V/div 3 V ★ 100mSec/div 100mSec/div
8 [BR)	10 (B)	Fuel injector No. 1 (LO)	Output	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	2.7 V ★ 100mSec/div 20V/div 300V/div 300V/div 300V/div 300V/div
9 GR)	_	ECM ground	_	_	— — — — — — — — — — — — — — — — — — —
10 (B)	_	ECM ground	_	_	_
11	13	Turbocharger boost sen-	Input	[Engine is running] • Warm-up condition • Idle speed	1.9 V
(W)	(V)	sor		[Engine is running]Warm-up conditionEngine speed is 2,000 rpm	2.0 V
12 (P)	13 (V)	Refrigerant pressure sensor	Input	 [Engine is running] Warm-up condition Both A/C switch and blower fan motor switch: ON (Compressor operates) 	1.0 - 4.0 V
13 (V)	_	Sensor ground G sensor Refrigerant pressure sensor Fuel rail pressure sensor Engine oil pressure sensor Intake air temperature sensor 2 Turbocharger boost sensor	_	_	_
14		Shield		_	_

	ninal No. re color)	Description		Condition	Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
15 (W)	20 (B)	Knock sensor	Input	[Engine is running] • Idle speed	2.5 V
19 (LG)	45 (P)	Exhaust gas temperature sensor		[Engine is running]Warm-up conditionIdle speed	1.29 - 2.94 V Output voltage varies with exhaust gas temperature.
20 (B)	_	Sensor ground (Knock sensor)	_	_	_
22 (Y)	45 (P)	Engine oil temperature sensor	Input	[Engine is running]	0 - 4.8 V Output voltage varies with engin oil temperature.
23	23 13 Engine oil pressure sensor	Input	[Engine is running]Warm-up conditionIdle speed	1.3 V★ 5mSec/div 2V/div JPBIA3359ZZ	
(6)		SUI		[Engine is running]Warm-up conditionEngine speed is 2,000 rpm	2.7 V★ 5mSec/div 5mSec/div 2V/div JPBIA3360ZZ
				[Engine is running] • Warm-up condition • Idle speed	1.3 V★ 5mSec/div 2V/div JPBIA3359ZZ
24 43 (G) (BR)	43 (BR)	EGR pressure sensor	Input	[Engine is running]Warm-up conditionEngine speed is 2,000 rpm	2.7 V★ 5mSec/div 2V/div JPBIA3360ZZ
				[Engine is running]Warm-up conditionEngine speed is 4,000 rpm	1 V★ 5mSec/div 5V/div JSBIA5611ZZ

[MR EXCEPT FOR NISMO RS MODELS]

Terminal No. (Wire color)		Description		Condition	Value
+	-	Signal name	Input/ Output	Condition	(Approx.)
25	13			[Engine is running] • Warm-up condition • Idle speed	1.14 - 1.46 V
(GR)	(V)	Fuel rail pressure sensor	Input	[Engine is running]Warm-up conditionRevving engine from idle to 4,000 rpm quickly	1.3 - 2.9 V
26 (R)	42 (W)	Sensor power supply (Mass air flow sensor)	_	[Ignition switch: ON]	5 V
27 (G)	44 (W)	Sensor power supply (Crankshaft position sensor)	_	[Ignition switch: ON]	5 V
29 (L)	13 (V)	Sensor power supply G sensor Refrigerant pressure sensor Fuel rail pressure sensor Engine oil pressure sensor Turbocharger boost sensor	_	[Ignition switch: ON]	5 V
30 (Y)	43 (BR)	Sensor power supply Battery current sensor EGR pressure sensor Intake manifold runner control valve position sensor Manifold absolute pressure sensor EGR volume control valve	_	[Ignition switch: ON]	5 V
31	43	Manifold absolute pres-	Input	[Engine is running] • Warm-up condition • Idle speed	1.0 V
(W)	(BR)	sure sensor	Input	[Engine is running] • Warm-up condition • Engine speed is 2,000 rpm	0.9 V
32 (BG)	43 (BR)	Battery temperature sensor	Input	[Engine is running] • Battery temperature: 20°C (68°F) • Idle speed	2.2 V

0

Р

	minal No. ire color)	Description		Condition	Value								
+	-	Signal name	Input/ Output	Condition	(Approx.)								
33	33 44 Crankshaft	Crankshaft position sen-	Crankshaft parition ass	lnout	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	4.0 V★ 5mSec/div 2V/div JPBIA4728ZZ							
(R)	(W)	sor	Input -	[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	4.0 V★ 5mSec/div 2V/div JPBIA4729ZZ								
34 (G)	13 (V)	G sensor	Input	[Engine is running]Warm-up conditionIdle speed	2.5 V								
35 (L)	45 (P)	Engine coolant tempera- ture sensor 1	Input	[Engine is running]	0 - 4.8 V Output voltage varies with engine coolant temperature.								
36 (Y)	42 (W)	Intake air temperature sensor 1	Input	[Engine is running]	0 - 4.8 V Output voltage varies with intake air temperature.								
			Input	[Ignition switch: ON] • Engine stopped	Approx. 3,700 Hz								
				[Engine is running]Warm-up conditionIdle speed	5,100 – 5,500 Hz								
37 (G)	42 (W)	Mass air flow sensor		Input	Input	Input	Input	Input	Input	Input	Input	Input	[Engine is running]Warm-up conditionEngine speed: 2,500 rpm
				[Engine is running]Warm-up conditionEngine is revving from idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*								
38 (G)	43 (BR)	Battery current sensor	Input	[Engine is running]Battery: Fully charged*Idle speed	2.6 - 3.5 V								
39	20 40	Intake manifold runner		 [Ignition switch ON] Engine coolant temperature: Between -7°C (19°F) and 60°C (140°F) Accelerator pedal: Fully released 	Less than 1.4 V								
(BR)	43 (BR)	control valve position sensor	Input	 [Ignition switch ON] Engine coolant temperature: Between -7°C (19°F) and 60°C (140°F) Accelerator pedal: Slightly depressed 	More than 2.8 V								
40 (W)	45 (P)	Engine coolant tempera- ture sensor 2	Input	[Engine is running]	0 - 4.8 V Output voltage varies with engine coolant temperature.								

	ninal No. re color)	Description		Condition	Value	
+	-	Signal name	Input/ Output	Condition	(Approx.)	
42 (W)	_	Sensor ground (Mass air flow sensor, in- take air temperature sensor1)	_	_	_	E
43 (BR)	_	Sensor ground Battery current sensor Battery temperature sensor EGR pressure sensor Intake manifold runner control valve position sensor Manifold absolute pres- sure sensor EGR volume control valve	_	_		[
44 (W)	_	Sensor ground (Crankshaft position sensor)	_	_	_	(
45 (P)	_	Sensor ground • Engine oil temperature sensor • Engine coolant temperature sensor 1 • Engine coolant temperature sensor 2 • Exhaust gas temperature sensor • EGR temperature sensor	_	_	_	ŀ
46 (R)	152 (GR)	Multi-way control valve power supply	Input	[Ignition switch: ON]		
47 (R)	152 (GR)	High pressure fuel pump driver power supply	Input	[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)	ŀ
48	49	High pressure fuel pump	Output	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div 5V/div JPBIA4722ZZ	1
(BR)	(Y)	(HI)	25.50	[Engine is running] • Engine speed is 2,000 rpm	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div 5V/div JPBIA4723ZZ	(

	ninal No. re color)	Description		Condition	Value
+	-	Signal name	Input/ Output	Condition	(Approx.)
49 48	High pressure fuel pump	Output	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div 5V/div JSBIA5612ZZ	
(Y)	(BR)	(LO)		[Engine is running] • Engine speed is 2,000 rpm	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div 5V/div JSBIA5613ZZ
50 (B)	_	ECM ground	_	_	_
51 (Y)	52 (G)	Multi-way control valve motor (–)	Output	[Ignition switch: ON] • Cold condition	0 V
52 (G)	51 (Y)	Multi-way control valve motor (+)	Output	[Ignition switch: ON] • Cold condition	0 V
53 (R)	152 (GR)	Intake manifold runner control valve power supply	Input	[Ignition switch: ON]	Battery voltage (11 - 14 V)
54 (B)	55 (W)	Intake manifold runner control valve (Open)	Output	 [Ignition switch ON] Engine coolant temperature: Between -7°C (19°F) and 39°C (102°F) Accelerator pedal: Fully released → depressed 	0 V
55 (W)	54 (B)	Intake manifold runner control valve (Close)	Output	 [Ignition switch ON] Engine coolant temperature: Between -7°C (19°F) and 39°C (102°F) Accelerator pedal: Depressed → fully released 	0 V
56 (R)	152 (GR)	EGR volume control valve power supply	Input	[Ignition switch: ON]	Battery voltage (11 - 14 V)
57	58	58 EGR volume control valve		[Ignition switch: ON]	0 V
(W)	(R)	motor (+)	Output	[Engine is running]Warm-up conditionIdle speed	1.1 V
50	5 7	FOD values a sector les		[Ignition switch: ON]	0 V
58 (R)	57 (W)	EGR volume control valve motor (–)	Output	[Engine is running]Warm-up conditionIdle speed	1.1 V
60 (B)	_	ECM ground	_	_	_

Terminal No. (Wire color)		Description		Condition	Value				
+	_	Signal name	Input/ Output	Condition	(Approx.)				
61 (W)	72 (B)	Sensor power supply (Electric wastegate posi- tion sensor, Multi-way control valve position sen- sor)	_	[Ignition switch: ON]	5 V				
63 (L)	_	Sensor ground (Exhaust valve timing control position sensor)	_	_	_				
64 (—)	_	Shield	_	_	_				
65 (R)	72 (B)	Electric wastegate position sensor	Input	[Ignition switch: ON]	4 V				
66 (G)	71 (L)	Sensor power supply (Camshaft position sensor)	_	[Ignition switch: ON]	5 V				
67	71					laat	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle 	1.0 - 2.0★ 10mSec/div 5V/div JSBIA5617ZZ	
(BR)	(L)	Camshaft position sensor	Input	при	mput	·		[Engine is running] • Engine speed is 2,000 rpm	1.0 - 2.0★ 10mSec/div 10mSec/div 5V/div JSBIA5618ZZ
68 (GR)	43 (BR)	EGR volume control valve position sensor	Input	[Ignition switch: ON]	1.2 V				
69 (LG)	63 (L)	Exhaust valve timing control position sensor	Input	 [Engine is running] Warm-up condition Idle speed NOTE: The pulse cycle changes depending on rpm at idle [Engine is running] Engine speed is 2,000 rpm 	1.0 - 2.0★ 10mSec/div 5V/div JSBIA5619ZZ 1.0 - 2.0★ 10mSec/div				
71 (L)		Sensor ground (Camshaft position sensor)		<u> </u>	5V/div JSBIA5620ZZ				

Terminal No. (Wire color)		Description		0	Value	
+	-	Signal name	Input/ Output	Condition	(Approx.)	
72 (B)	_	Sensor ground (Electric wastegate position sensor, Multi-way control valve position sensor)	_	_	_	
73 (GR)	63 (L)	Sensor power supply (Exhaust valve timing control position sensor)	_	[Ignition switch: ON]	5 V	
74 (B)	152 (GR)	A/F sensor 1	Input	[Ignition switch: ON]	2.2 V	
				[Ignition switch: ON] • Cold condition	4.5 V★ 1mSec/div	
				 [Engine is running] Engine speed: Idle speed Engine coolant temperature: 64°C (148°F) 	1.8 V	
75 (L)	72 (B)	Multi-way control valve position sensor	Input	 [Engine is running] Engine speed: Idle speed Engine coolant temperature: 75°C (167°F) 	2.4 V★ 10mSec/div 5V/div JSBIA5623ZZ	
				 [Engine is running] Engine speed: Idle speed Engine coolant temperature: 86-100°C (187-212°F) 	2.8 V★ 10mSec/div 5V/div JSBIA5625ZZ	
76 (R)	45 (P)	EGR temperature sensor	Input	[Engine is running]Warm-up conditionIdle speed	0 - 4.8 V Output voltage varies with EGR temperature.	
77 (V)	13 (V)	Intake air temperature sensor 2	Input	[Engine is running]Warm-up conditionIdle speed	0 - 4.8 V Output voltage varies with intake air temperature.	
78 (R)	_	Sensor ground (Heated oxygen sensor 2)	_	_	_	
79 (W)	152 (GR)	A/F sensor 1	Input	[Engine is running] • Engine speed is 2,000 rpm	2.3 V Output voltage varies with air fuel ratio.	

Terminal No. (Wire color)		Description			Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
80 (W)	85	Throttle position sensor 2	Input	[Ignition switch: ON] • Engine stopped • Selector lever: D (CVT) • Accelerator pedal: Fully released	Less than 4.75 V
	(R)			[Ignition switch: ON]Engine stoppedSelector lever: D (CVT)Accelerator pedal: Fully depressed	More than 0.36 V
81 (BR)	152 (GR)	ECM relay (Self shut-off)	Output	[Engine is running][Ignition switch: OFF]A few seconds after turning ignition switch OFF	0 - 1.0 V
	(3.1)			[Ignition switch: OFF]More than a few seconds after turning ignition switch OFF	BATTERY VOLTAGE (11 - 14 V)
82 (Y)	152 (GR)	Fuel pump relay	Output	[Ignition switch: ON] • For 1 second after turning ignition switch ON [Engine is running]	0 - 1.0 V
83 (B)	152 (GR)	Sensor power supply (Throttle position sensor)	_	[Ignition switch: ON]	5 V
84 (W)	78 (R)	Heated oxygen sensor 2	Input	 [Engine is running] Revving engine from idle to 3,000 rpm quickly after the following conditions are met Engine: after warming up Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 	0 - 1.7 V
85 (R)	_	Sensor ground (Throttle position sensor 1, 2)	_	_	_
88 (G)	85 (R)	Throttle position sensor 1	Input	[Ignition switch: ON] • Engine stopped • Selector lever: D (CVT), 1st (M/T) • Accelerator pedal: Fully released	More than 0.36 V
				 [Ignition switch: ON] Engine stopped Selector lever: D (CVT), 1st (M/T) Accelerator pedal: Fully depressed 	Less than 4.75 V
95 (LG)	152 (GR)	Ignition signal No. 2	Output	[Engine is running] • Warm-up condition	0 - 0.3 V★ 100mSec/div
96 (R)		Ignition signal No. 1		Idle speed NOTE: The pulse cycle changes depending on rpm at idle	2V/div JPBIA4733ZZ
97 (Y)	152	Throttle control motor re- lay	Output	[Ignition switch: OFF]	BATTERY VOLTAGE (11 - 14 V)
	(GR)			[Ignition switch: ON]	0 - 1.0 V

Terminal No. (Wire color)		Description		0	Value	
+	-	Signal name	Input/ Output	Condition	(Approx.)	
98 (R)	152 (GR)	Engine oil pressure control solenoid valve	Output	[Engine is running]Warm-up conditionIdle speed	10 V	
				[Engine is running]Warm-up conditionEngine speed: 4,500 rpm or more	BATTERY VOLTAGE (11 - 14 V)	
101 (SB)	152 (GR)	Ignition signal No. 4	Output	[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	0.2 - 0.5 V★ 100mSec/div 2V/div JPBIA4734ZZ	
103	152 (GR)	PNP signal	Input	[Ignition switch: ON] • Selector lever: P or N (CVT), Neutral (M/T)	BATTERY VOLTAGE (11 - 14 V)	
(BR)				[Ignition switch: ON] • Selector lever: Except above	0 V	
104 (P)	152 (GR)	Ignition signal No. 3	Output	[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	0.2 - 0.5 V★ 100mSec/div 2V/div JPBIA4734ZZ	
105 (BR)	152 (GR)	Turbocharger bypass control valve	Output	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)	
106 (R)	152 (GR)	Electric wastegate control actuator power supply	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)	
	108 (P/L)	Electric wastegate control actuator motor (+)	Output	[Ignition switch: ON]	0.7 V	
107 (L/Y)				[Engine is running]Warm-up conditionIdle speed	0.7 V	
				[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	0 V	
				[Engine is running]Warm-up conditionEngine speed: 4,000 rpm	0 V	
108 (P/L)	107 (L/Y)	Electric wastegate control actuator motor (–)	_	[Ignition switch: ON]	0.4 V	
				[Engine is running]Warm-up conditionIdle speed	0 V	
				[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	0.4 V	
				[Engine is running]Warm-up conditionEngine speed: 4,000 rpm	0.5 V	

	ninal No. re color)	Description		Condition	Value
+	-	Signal name	Input/ Output	Condition	(Approx.)
110 (B)	_	ECM ground	_	_	_
				[Engine is running]Warm-up conditionIdle speed	9 V
111 (W)	152 (GR)	Intake valve timing control solenoid valve	Output	[Engine is running]Warm-up conditionWhen revving engine up to 2,000rpm Quickly	BATTERY VOLTAGE (11 - 14 V)★ 5V/div JMBIA1638GB
112	152	Exhaust valve timing con-	Output	[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)
(G)	(GR)	trol solenoid valve	Output	[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	9 V
113 (Y)	152 (GR)	Power supply for ECM	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
114	152	Intake valve timing inter-		[Engine is running]Warm-up conditionIdle speed	BATTERY VOLTAGE (11 - 14 V)
(L)	(GR)	mediate lock control sole- noid valve	Output	 [Engine is running] Cold condition [Engine coolant temperature: below 60°C (140°F)] Idle speed 	Battery voltage (11 - 14 V)
115	152 (CR)	EVAP canister purge vol- ume control solenoid	Output	[Engine is running]Idle speedAccelerator pedal: Not depressed even slightly, after engine starting	BATTERY VOLTAGE (11 - 14 V)★ 50mSec/div 10V/div JMBIA0327GB
(L)	(GR)	valve	-	[Engine is running]Engine speed: About 2,000 rpm (More than 100 seconds after starting engine.)	10 V★ 50mSec/div 10V/div JMBIA0328GB
116 (G)	152 (GR)	A/F sensor 1 heater	Input	 [Engine is running] Warm-up condition Idle speed (More than 260 seconds after starting engine) 	2.9 - 8.8 V★ 100mSec/div 5V/div JPBIA4732ZZ

	minal No. ire color)	Description		Condition	Value		
+	_	Signal name	Input/ Output	Condition	(Approx.)		
117 (G)	78 (R)	Heated oxygen sensor 2 heater	Output	 [Engine is running] Engine speed: Below 3,600 rpm after the following conditions are met Engine: after warming up Keeping the engine speed between 3,500 and 4,000 rpm for 1 minute and at idle for 1 minute under no load 	10 V★ 50mSec/div 5V/div JSBIA5628ZZ		
				[Ignition switch: ON] • Engine stopped [Engine is running] • Engine speed: Above 3,600 rpm	BATTERY VOLTAGE (11 - 14 V)		
118 (GR)	152 (GR)	Throttle control motor power supply	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)		
119 (GR)	120 (BR)	Throttle control motor (Open)	Output	[Ignition switch: ON] • Engine stopped • Selector lever: D (CVT) • Accelerator pedal: Fully depressed	3.2 V★ 1mSec/div 5V/div JMBIA0324GB		
120 (BR)	119 (GR)	Throttle control motor (Close)	Output	[Ignition switch: ON] • Engine stopped • Selector lever: D (CVT), 1st (M/T) • Accelerator pedal: Fully released	1.8 V★ 5mSec/div 5mSec/div JMBIA0326GB		
121 (L)	148 (Y)	EVAP control system pressure sensor	Input	[Ignition switch: ON]	0.5 - 4.6 V		
123 (P)	_	CAN communication line (CAN-L)	Input/ Output	_	_		
124 (L)	_	CAN communication line (CAN-H)	Input/ Output	_	_		
125 (G)	148 (Y)	Sensor power supply (EVAP control system pressure sensor)	_	[Ignition switch: ON]	5 V		
128 (SB)	148 (Y)	Fuel tank temperature sensor	Input	[Engine is running]	0 - 4.8 V Output voltage varies with fuel tank temperature		
132 (GR)	152 (GR)	Clutch pedal position switch	Input	[Ignition switch: ON] Clutch pedal: Fully released [Ignition switch: ON] Clutch pedal: Fully depressed	0 V BATTERY VOLTAGE (11 - 14 V)		
133 (LG)	152 (GR)	Ignition switch	Input	[Ignition switch: OFF] [Ignition switch: ON]	0 V BATTERY VOLTAGE (11 - 14 V)		

	ninal No. re color)	Description		Condition	Value
+	-	Signal name	Input/ Output	Condition	(Approx.)
				[Ignition switch: ON] • ASCD steering switch: OFF	4 V
				[Ignition switch: ON] • MAIN switch: Pressed	0 V
134 (P)	135 (B)	ASCD steering switch	Input	[Ignition switch: ON] • CANCEL switch: Pressed	1 V
				[Ignition switch: ON] • ACCEL/RES switch: Pressed	3 V
				[Ignition switch: ON] • COAST/SET switch: Pressed	2 V
135 (B)	_	Sensor ground (ASCD steering switch)	-	_	_
139	152	Stop lamp switch	Input	[Ignition switch: OFF] • Brake pedal: Fully released	0 V
(R)	(GR)	Olop lamp switch	iiiput	[Ignition switch: OFF] • Brake pedal: Slightly depressed	BATTERY VOLTAGE (11 - 14 V)
140	152	Brake pedal position	Input	[Ignition switch: OFF] • Brake pedal: Fully released	0 V
(G)	(GR)	switch	iliput	[Ignition switch: ON] • Brake pedal: Slightly depressed	0 V
141 (L)	152 (GR)	EVAP canister vent control valve	Output	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
142 (O)	144 (Y)	Sensor power supply (Accelerator pedal position sensor 2)	_	[Ignition switch: ON]	5 V
143	144	Accelerator pedal posi-	lanut	[Ignition switch: ON] • Engine stopped • Accelerator pedal: Fully released	0.3 - 0.6 V
(W)	(Y)	tion sensor 2	Input	[Ignition switch: ON]Engine stoppedAccelerator pedal: Fully depressed	1.95 - 2.1 V
144 (Y)	_	Sensor ground (Accelerator pedal position sensor 2)	_	_	_
145 (G)	152 (GR)	Power supply for ECM	Input	[Ignition switch: ON]	BATTERY VOLTAGE (11 - 14 V)
146 (V)	151 (GR)	Sensor power supply (Accelerator pedal position sensor 1)	_	[Ignition switch: ON]	5 V
147 (GR)	_	ECM ground	_	_	_
148 (Y)	_	Sensor ground (EVAP control system pressure sensor, Fuel tank temperature sensor)	_	_	_
149 (GR)	_	ECM ground	_	_	_

	minal No. ire color)	Description		Condition	Value
+	_	Signal name	Input/ Output	Condition	(Approx.)
150	150 151 Accelerator pedal posi- (R) (GR) tion sensor 1 Input	Input	[Ignition switch: ON] Engine stopped Accelerator pedal: Fully released	0.6 - 0.9 V	
(R)		mput	[Ignition switch: ON]Engine stoppedAccelerator pedal: Fully depressed	3.9 - 4.7 V	
151 (GR)	_	Sensor ground (Accelerator pedal position sensor 1)	_	_	_
152 (GR)	_	ECM ground	_	_	_

Fail Safe

NON DTC RELATED ITEM

Detected items	Engine operating condition in fail-safe mode	Remarks	Reference page
Malfunction indicator lamp circuit	Engine speed will not rise more than 2,500 rpm due to the fuel cut	When there is an open circuit on MIL circuit, the ECM cannot warn the driver by lighting up MIL when there is malfunction on engine control system. Therefore, when electrical controlled throttle and part of ECM related diagnoses are continuously detected as NG for 5 trips, ECM warns the driver that engine control system malfunctions and MIL circuit is open by means of operating fail safe function. The fail safe function also operates when above diagnoses except MIL circuit are detected and demands the driver to repair the malfunction.	EC-1236, "Component Function Check"

DTC RELATED ITEM

Description

When a DTC is detected, ECM executes a mode (in the Fail-safe mode) applicable to the DTC. The fail-safe mode has the preset traveling control mode (accelerator angle variation and engine output limit) and device fix mode.

Fail sa	fe mode	Vehicle behavior
	Accelerator angle variation control	ECM controls the accelerator pedal depression speed to make it slower than actual speed. This causes a drop in accelerating performance and encourages the driver to repair malfunction. NOTE: ECM does not control the accelerator pedal releasing speed.
Traveling con- trol mode	Engine output control	ECM reduces the engine output, according to the rise in engine speed. This reduces the vehicle speed to encourage the driver to repair malfunction. • Engine output control 1: Limits the maximum speed to 120 km/h (75 MPH)* • Engine output control 2: Limits the maximum speed to 55 km/h (34 MPH)* *: This value is a reference value converted from engine power to vehicle speed. Actual power limitation value differs due to the malfunctioning part and driving condition.
Device fix mode		 This mode fixes the IVT control solenoid valve and the EVT control solenoid valve in the reference position. A control signals is not transmitted to EGR volume control valve and the EGR volume control is deactivated. The Intake manifold runner control valve motor is turned OFF (Intake manifold runner control valve opens).

	NOSIS INFOR									
Fail s	afe mode		Vehicle behavior							
	Stratified charge combustion control at starting		No stratified charge combustion at starting (cold start).							
	Idle speed con- trol	Stops feedback control of idle spo	eed and controls with specified speed.							
Combustion control mode	Recovery speed control at decelerating		the fuel cut at decelerating and controls with specified speed.							
	Idle neutral con-	Stops idle neutral control.	Stops idle neutral control.							
	Ignition timing correction control	Partially controls ignition timing control.								
	Retardation control	Controls ignition timing delay con	control in the intermediate water temperature range.							
ail Safe Patte	ern									
Pa	ttern		Fail safe mode							
	A		Accelerator angle variation control							
В Т С		Traveling control mode	Engine output control 1							
			Engine output control 2							
	D	Device fix mode								
	E		Stratified charge combustion control at starting							
	_		Idle speed control							

Fail Safe List

F

G

×:Applicable —: Not applicable

J

K

L

M

Ν

0

Р

Recovery speed control at decelerating

• Ignition timing correction control

Idle neutral control

· Retardation control

							Ve	hicle b	ehavior
DTC No.	Detected items				Patterr	1		Others	
110.		Α	В	С	D	Е	F	G	Others
P0011 P0075 P052A P052B	Intake valve timing control	_	_	_	×	_	_	_	_
P0014 P0078	Exhaust valve timing control	_	_	_	×	_	_	_	_
P0046	Electric wastegate control actuator	×	×	_	×	_	_	_	The ECM stops the electric wastegate actuator control, engine can not be supercharged driving. The ECM requlates engine power limiter and EGR Off.
P0087 P0090	FRP control system	×	_	×	×	×	_	_	_
P0088	FRP control system	×	_	×	_	×		_	_
P00B3 P00B4	Engine coolant temperature sensor 2	_	_	_	_	_	_	_	High coolant temperature control does not function.
P0101 P0102 P0103	Mass air flow sensor	×	×	_	×	×	×	×	NOTE: Fail-safe mode may not start depending on malfunction type of ECM

Combustion control mode

DTC							Ve	ehicle b	ehavior
No.	Detected items		I _		Patteri			_	Others
		Α	В	С	D	E	F	G	
P0117 P0118	Engine coolant temperature sensor 1	_	_	_	_	×	×	_	The engine speed does not exceed 2,000 rpm due to fuel cut
P0122 P0123 P0222 P0223 P2135	Throttle position sensor	_	_	_	×	_	_		The ECM controls the electric throttle control actuator in regulating the throttle opening in order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the normal condition. So, the acceleration will be poor.
P0171 P0172	Fuel injection system	×	_	_	_	×	×	_	_
P0190	FRP sensor	×	×	×	×	×	×	_	High pressure fuel pump is activated at maximum discharge pressure. NOTE: Fail-safe mode may not start depending on malfunction type of ECM
P0192	FRP sensor	×	×	_	_	×	_	_	High pressure fuel pump is activated at maximum discharge pressure. NOTE: Fail-safe mode may not start depending on malfunction type of ECM
P0193	FRP sensor	×	×	_	_	×	_	_	High pressure fuel pump is activated at maximum discharge pressure. NOTE: Fail-safe mode may not start depending on malfunction type of ECM
P0196 P0197 P0198	Engine oil temperature sensor	_	_	_	_	_	_	_	Exhaust valve timing control does not function.
P0201 P0202 P0203 P0204	Injector	×	_	×	_	×	_	_	_
P0237	Turbocharger boost sensor	×	×	_	×	_	_	_	_
P0300 P0301 P0302 P0303 P0304	Misfire	×	_	_	_	×	×	_	_
P0335	Crankshaft position sensor	_	_	_	×	_	_	_	_
P0340	Camshaft position sensor	_	_	_	×	_	_	_	_
P0365	Exhaust valve timing control position sensor	_	_	_	×	_	_	_	_
P0401 P0402	EGR system	_	_	_	×	_	_	_	_
P0404	EGR volume control valve	×	_	×	×	×	×	_	_
P0407 P0408 P046E P046F P0486	EGR pressure sensor	_	_	_	×	_	_	_	_
P040B P040C P040D	EGR temperature sensor	_	_	_	×	_	_	_	_

DTC	Detected items				Dotto		ve	A HOIE L	pehavior
No.	Detected items	A	В	С	Patterr D	n E	F	G	Others
P0448	EVAP canister vent control valve	×	_	_	×	_	_	_	_
P044A P044B P044C P044D P044E	EGR volume control valve position sensor	×	_	_	×	_	_	_	_
P0500		×	_	_	_	×	×	_	
P0501 P2159	Vehicle speed sensor	×	_	_	_	×	_	_	_
P050A	Cold start control	×	_	_	_	×	_	_	_
P0524	Engine oil pressure	_	_	_	_	_	_	_	 ECM illuminates oil pressure warning lamp on the combination meter. Engine speed will not rise more than 4,000rpm due to the fuel cut. Fail-safe is canceled when ignition switch OFF → ON.
P0603 P0607		×	×	_	_	_	_	_	_
P0604 P0605 P0606 P060B	ECM	_	_	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.
P060A		×	×	_	×	_	_	_	NOTE:
P062B		×	_	×	_	×	_	_	Fail-safe mode may not start depending on malfunction type of ECM
P0643	Sensor power supply	_	_	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.
P119A	FRP sensor	×	_	_	_	×	_	_	_
P119B	FRP sensor	×	_	_	_	×	_	_	_
P119C	FRP sensor	×	_	_	_	×	_	_	_
P1197	Out of gas	_	_	×	×	_	_		_
P1217	Engine over temperature	_	_	_	_	_	_	_	The engine speed does not exceed 2,000 rpm due to fuel cut
P159B	G sensor	×	_	_	_	×	_	_	_
P2100 P2103	Throttle control motor relay	_	_	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.
P2004	Intake manifold runner control valve	_	_	_	×	_	_	_	_
P2014	Intake manifold runner control valve position sensor	_	_	_	×	_	_	_	_
P2016	Intake manifold runner control valve position sensor	_	_	_	×	_	_	_	_
P2017	Intake manifold runner control valve position sensor	_	_	_	×	_	_	_	_
P2018	Intake manifold runner control valve position sensor	_	_	_	×	_	_	_	_

							Ve	ehicle b	pehavior
DTC No.	Detected items				Patteri	า			Others
		Α	В	С	D	Е	F	G	Others
P2101	Electric throttle control function	_	_	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.
P2118	Throttle control motor		_	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring.
P2119	Electric throttle control actuator	×	×	_	×	_	_	_	ECM stops the electric throttle control actuator control, throttle valve is maintained at a fixed opening (approx. 5 degrees) by the return spring. NOTE: Fail-safe mode may not start depending on malfunction type of ECM
P2122 P2123 P2127 P2128 P2138	Accelerator pedal position sensor	_	_	_	×	_	_	_	The ECM controls the electric throttle control actuator in regulating the throttle opening in order for the idle position to be within +10 degrees. The ECM regulates the opening speed of the throttle valve to be slower than the normal condition. So, the acceleration will be poor.
P2162	Vehicle speed sensor	×	_	_	_	×	_	_	_
P2263	Turbocharger system	×	×	_	×	_	_	_	_
P2413	EGR system	_	_	_	×	_	_	_	_
P2457	EGR cooling system	_	_	_	×	_	_	_	_
P2562 P2566	Electric wastegate control valve position sensor	×	×	_	×	_	_	_	The ECM stops the electric wastegate actuator control, engine can not be supercharged driving. The ECM requlates engine power limiter and EGR Off.
P2563	Electric wastegate control valve position sensor	×	×	_	×	_	_	_	_
P2564	Electric wastegate control valve position sensor	×	×	_	×	_		_	_
P2565	Electric wastegate control valve position sensor	×	×	_	×	_	_	_	_
P26A3 P26A5 P26A6 P26A7	Multi-way control valve	_	_	_	_	_	_	_	 When detecting a malfunction with the valve closed, ECM fully opens the valve. When detecting a malfunction with the valve opened, ECM maintains valve angle. When detecting a malfunction in sensor, ECM fully opens the valve. ECM limits the engine output depending on malfunctions.

DTC Inspection Priority Chart

INFOID:0000000011610823

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	Detected items (DTC)	
1	U0101 U0122 U1000 CAN communication line	
	P0096 P0097 P0098 Intake air temperature sensor 2	
	P00B3 P00B4 Engine coolant temperature sensor 2	
	 P0101 P0102 P0103 Mass air flow sensor 	
	P0106 Turbocharger boost sensor	
	P010A Manifold absolute pressure sensor	
	P0111 P0112 P0113 P0127 Intake air temperature sensor 1	
	P0116 P0117 P0118 P0125 Engine coolant temperature sensor 1	
	P011C Intake air temperature sensor	
	 P0122 P0123 P0222 P0223 P1225 P1226 P2135 Throttle position sensor 	
	P0181 P0182 P0183 Fuel tank temperature sensor	
	P0190 P0192 P0193 P119A P119B P119C FRP sensor	
	P0196 P0197 P0198 Engine oil temperature sensor	
	P0327 P0328 Knock sensor	
	P0335 Crankshaft position sensor (POS)	
	P0340 P0365 Camshaft position sensor (PHASE)	
	 P0407 P0408 P046E P046F P0486 EGR pressure sensor 	
	P040B P040C P040D EGR temperature sensor	
	P044A P044B P044C P044D P044E EGR volume control valve position sensor	
	P0460 P0461 P0462 P0463 Fuel level sensor	
	 P0500 P0501 P2159 P2162 Vehicle speed sensor 	
	P0520 Engine oil pressure sensor	
	P0544 P0545 P0546 Exhaust gas temperature sensor	
	 P0603 P0604 P0605 P0606 P0607 P060A P060B P0611 P062B P2610 ECM 	
	P062F Control module	
	P0643 Sensor power supply	
	 P06DA P06DB Engine oil pressure control solenoid valve 	
	 P0850 Park/neutral position (PNP) switch 	
	• P1197 Out of gas [*]	
	P1550 P1551 P1552 P1553 P1554 Battery current sensor	
	P1556 P1557 Batter temperature sensor	
	P158A P159B P159C P159D G sensor	
	• P1610 - P1612 NATS	
	P2014 P2016 P2017 P2018 Intake manifold runner control valve position sensor	
	P2081 Exhaust gas temperature sensor	
	P2122 P2123 P2127 P2128 P2138 Accelerator pedal position sensor	
	P2562 P2563 P2564 P2565 P2566 Electric wastegate control valve position sensor	
	• P2610 ECM	
	P26A5 P26A6 P26A7 P26AB Multi-way control valve position sensor	

Revision: 2014 October EC-693 2015 JUKE

M

Ν

0

Р

Priority	Detected items (DTC)
2	 P0030 P0031 P0032 Air fuel ratio (A/F) sensor 1 heater P0037 P0038 Heated oxygen sensor 2 heater P0046 Electric wastegate control actuator P0075 Intake valve timing control solenoid valve P0078 Exhaust valve timing control solenoid valve P0090 FRP control system P00C1 P00C2 Turbocharger bypass valve P0130 P0131 P0132 P014C P014D P015A P015B P2096 P2097 Air fuel ratio (A/F) sensor 1 P0137 P0138 P0139 Heated oxygen sensor 2 P0235 P0237 P0238 Turbocharger boost sensor P0402 P0404 EGR valve P0441 EVAP control system purge flow monitoring P0443 P0444 P0445 EVAP canister purge volume control solenoid valve P0447 P0448 EVAP canister vent control valve P0451 P0452 P0453 EVAP control system pressure sensor P1217 Engine over temperature (OVERHEAT) P1451 Pressure sensor P1805 Brake switch P2004 Intake manifold runner control valve P2101 Electric throttle control motor relay P2118 Throttle control motor P26A3 Multi-way control valve
3	 P0011 P052A P052B Intake valve timing control P0014 Exhaust valve timing control P0087 P0088 FRP control system P0171 P0172 Fuel injection system function P0201 P0202 P0203 P0204 Injector P0234 P2263 Turbocharger system P0300 P0301 P0302 P0303 P0304 Misfire P0401 EGR system P0420 Three way catalyst function P0456 EVAP control system (VERY SMALL LEAK) P0506 P0507 Idle speed control system P050A P050B P050E P1423 P1424 Cold start control P0524 Engine oil pressure P100C Valve timing offset data not written P1148 Closed loop control P1212 TCS communication line P1564 ASCD steering switch P1572 ASCD brake switch P1574 ASCD vehicle speed sensor P2119 Electric throttle control actuator P2413 EGR system P2457 EGR cooling system

NOTE:

*: If "P1197" is displayed with other DTC in priority 1, perform trouble diagnosis for "P1197" first.

DTC Index

×:Applicable —: Not applicable

DTC	C*1	Items	SRT			Permanent	Reference page	
CONSULT GST*2	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*8		
U0101	0101	LOST COMM (TCM)	_	1	×	В	EC-781	
U0122	0122	VDC MDL	_	2	×	В	EC-782	
U1000	1000*4	CAN COMM CIRCUIT	_	2	_	_	EC-783	
P0000	0000	NO DTC IS DETECTED. FURTHER TESTING MAY BE REQUIRED.	_	_	Flashing*7	_	_	

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

С

D

Е

F

G

Н

Κ

L

M

Ν

0

Ρ

DTC	C*1	ltems	SRT			Permanent	Reference
CONSULT GST ^{*2}	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*8	page
P0011	0011	INT/V TIM CONT-B1	×	2	×	В	EC-784
P0014	0014	EXH/V TIM CONT-B1	×	2	×	В	EC-787
P0030	0030	HO2S1 HTR B1	_	2	×	В	EC-790
P0031	0031	A/F SEN1 HTR (B1)	_	2	×	В	EC-790
P0032	0032	A/F SEN1 HTR (B1)	_	2	×	В	EC-790
P0037	0037	HO2 HTR (B1)	_	2	×	В	EC-793
P0038	0038	HO2 HTR (B1)	_	2	×	В	EC-793
P0046	0046	TC/SC BOOST CONTROL A	_	2	×	В	EC-796
P0075	0075	INT/V TIM V/CIR-B1	_	2	×	В	EC-798
P0078	0078	EX V/T ACT/CIRC-B1	_	2	×	В	EC-801
P0087	0087	LOW FUEL PRES	_	2	×	A or B	EC-804
P0088	0088	HIGH FUEL PRES	_	2	×	A or B	EC-808
P0090	0090	FUEL PUMP	_	2	×	В	EC-811
P0096	0096	IAT SENSOR 2 B1	_	2	×	В	EC-814
P0097	0097	IAT SENSOR 2 B1	_	2	×	В	EC-816
P0098	0098	IAT SENSOR 2 B1	_	2	×	В	EC-816
P00B3	00B3	RADIATOR COOLANT TEMP SEN	_	2		В	EC-819
P00B4	00B4	RADIATOR COOLANT TEMP SEN	_	2	_	В	EC-819
P00C1	00C1	TC/SC BYPASS VALVE B	_	2	×	В	EC-821
P00C2	00C2	TC/SC BYPASS VALVE B	_	2	×	В	EC-821
P0101	0101	MAF SEN/CIRCUIT-B1	_	2	×	В	EC-823
P0102	0102	MAF SEN/CIRCUIT-B1	_	1	×	В	EC-828
P0103	0103	MAF SEN/CIRCUIT-B1	_	1	×	В	EC-828
P0106	0106	ABSL PRES SEN/CIRC	_	2	×	В	EC-833
P010A	010A	ABSL PRES SEN/CIRC	_	2	×	В	EC-836
P0111	0111	IAT SENSOR 1 B1	_	2	×	А	EC-839
P0112	0112	IAT SEN/CIRCUIT-B1	_	2	×	В	EC-841
P0113	0113	IAT SEN/CIRCUIT-B1	_	2	×	В	EC-841
P0116	0116	ECT SENSOR	_	2	×	А	EC-843
P0117	0117	ECT SEN/CIRC	_	1	×	В	EC-845
P0118	0118	ECT SEN/CIRC	_	1	×	В	EC-845
P011C	011C	ECT SEN/CIRC	_	2	×	В	EC-847
P0122	0122	TP SEN 2/CIRC-B1	_	1	×	В	EC-849
P0123	0123	TP SEN 2/CIRC-B1	_	1	×	В	EC-849
P0125	0125	ECT SEN/CIRC	_	2	×	В	EC-852
P0127	0127	IAT SENSOR-B1	_	2	×	В	EC-854
P0130	0130	A/F SENSOR1 (B1)	×	2	×	А	EC-856
P0131	0131	A/F SENSOR1 (B1)	_	2	×	В	EC-860
P0132	0132	A/F SENSOR1 (B1)	_	2	×	В	EC-863
P0137	0137	HO2S2 (B1)	×	2	×	А	EC-866
P0138	0138	HO2S2 (B1)	×	2	×	A	EC-872

< ECO DIAG	[IIIX EXOLITION NO MODELO]						
DTC	C*1						
CONSULT GST*2	ECM*3	Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group*8	Reference page
P0139	0139	HO2S2 (B1)	×	2	×	A	EC-879
P014C	014C	A/F SENSOR1 (B1)	×	2	×	A	EC-885
P014D	014D	A/F SENSOR1 (B1)	×	2	×	A	EC-885
P015A	015A	A/F SENSOR1 (B1)	×	2	×	A	EC-885
P015B	015B	A/F SENSOR1 (B1)	×	2	×	A	EC-885
P0171	0171	FUEL SYS-LEAN-B1	_	2	×	В	EC-890
P0172	0172	FUEL SYS-RICH-B1	_	2	×	В	EC-894
P0181	0181	FTT SENSOR	_	2	×	A and B	EC-898
P0182	0182	FTT SEN/CIRCUIT	_	2	×	В	EC-898
P0183	0183	FTT SEN/CIRCUIT	_	2	×	В	EC-898
P0190	0190	FUEL PRES SEN/CIRC	_	1	×	В	EC-904
P0192	0192	FRP SEN/CIRC	_	2	×	В	EC-904
P0193	0193	FRP SEN/CIRC	_	2	×	В	EC-904
P0196	0196	EOT SENSOR	_	2	×	A and B	EC-907
P0197	0197	EOT SEN/CIRC	_	2	×	В	EC-911
P0198	0198	EOT SEN/CIRC	_	2	×	В	EC-911
P0201	0201	INJECTOR CIRC-CYL1	_	2	×	В	EC-913
P0202	0202	INJECTOR CIRC-CYL2	_	2	×	В	EC-913
P0203	0203	INJECTOR CIRC-CYL3	_	2	×	В	EC-913
P0204	0204	INJECTOR CIRC-CYL4	_	2	×	В	EC-913
P0222	0222	TP SEN 1/CIRC-B1	_	1	×	В	EC-914
P0223	0223	TP SEN 1/CIRC-B1	_	1	×	В	EC-914
P0234	0234	TC SYSTEM-B1	_	1 or 2	×	В	EC-917
P0235	0235	TURBO BOOST SENSOR	_	2	×	В	EC-920
P0237	0237	TC BOOST SEN/CIRC-B1	_	2	×	В	EC-923
P0238	0238	TC BOOST SEN/CIRC-B1	_	2	×	В	EC-923
P0300	0300	MULTI CYL MISFIRE	_	1 or 2	× or —	В	EC-926
P0301	0301	CYL 1 MISFIRE	_	1 or 2	× or —	В	EC-926
P0302	0302	CYL 2 MISFIRE	_	1 or 2	× or —	В	EC-926
P0303	0303	CYL 3 MISFIRE	_	1 or 2	× or —	В	EC-926
P0304	0304	CYL 4 MISFIRE	_	1 or 2	× or —	В	EC-926
P0327	0327	KNOCK SEN/CIRC-B1	_	2	_	_	EC-932
P0328	0328	KNOCK SEN/CIRC-B1	_	2	_	_	EC-932
P0335	0335	CKP SEN/CIRCUIT	_	2	×	В	EC-934
P0340	0340	CMP SEN/CIRC-B1	_	2	×	В	EC-937
P0365	0365	CMP SEN/CIRC-B1	_	2	×	В	EC-940
P0401	0401	EGR A FLOW INSUFFICIENT	×	1 or 2	×	Α	EC-944
P0402	0402	EGRC-BPT VALVE	×	2	×	А	EC-944
P0404	0404	EGR A CONTROL	_	2	×	В	EC-946
P0407	0407	EGR SENSOR B	_	2	×	В	EC-948
P0408	0408	EGR SENSOR B	_	2	×	В	EC-948
P040B	040B	EGR TEMP SENSOR A	_	2	×	В	EC-951

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

С

D

Е

F

G

Н

J

Κ

L

 \mathbb{N}

Ν

0

Р

< ECO DIAC	< ECO DIAGNOSIS INFORMATION > [IIII EXCENT FOR MODELES]							
DTO	C*1					_		
CONSULT GST*2	ECM*3	Items (CONSULT screen terms)	SRT code	Trip	MIL	Permanent DTC group ^{*8}	Reference page	
P040C	040C	EGR TEMPERATURE SENSOR A		2	×	В	EC-954	
P040D	040D	EGR TEMPERATURE SENSOR A	_	2	×	Α	EC-954	
P0420	0420	TW CATALYST SYS-B1	×	2	×	A	EC-957	
P0441	0441	EVAP PURG FLOW/MON	×	2	×	Α	EC-962	
P0443	0443	PURG VOLUME CONT/V	×	2	×	Α	EC-968	
P0444	0444	PURG VOLUME CONT/V	_	2	×	В	EC-973	
P0445	0445	PURG VOLUME CONT/V	_	2	×	В	EC-973	
P0447	0447	VENT CONTROL VALVE		2	×	В	EC-976	
P0448	0448	VENT CONTROL VALVE		2	×	В	EC-980	
P044A	044A	EGR SENSOR C	_	2	×	В	EC-984	
P044B	044B	EGR SENSOR C		2	×	Α	EC-987	
P044C	044C	EGR SENSOR C	_	2	×	В	EC-990	
P044D	044D	EGR SENSOR C	_	2	×	В	EC-990	
P044E	044E	EGR SENSOR C	_	2	×	В	EC-984	
P0451	0451	EVAP SYS PRES SEN	_	2	×	Α	EC-993	
P0452	0452	EVAP SYS PRES SEN	_	2	×	В	EC-996	
P0453	0453	EVAP SYS PRES SEN		2	×	A	EC-999	
P0456	0456	EVAP VERY SML LEAK	×	2	×	Α	EC-1003	
P0460	0460	FUEL LEV SEN SLOSH	_	2	×	A	EC-1009	
P0461	0461	FUEL LEVEL SENSOR	_	2	×	В	EC-1010	
P0462	0462	FUEL LEVL SEN/CIRC	_	2	×	В	EC-1012	
P0463	0463	FUEL LEVL SEN/CIRC	_	2	×	В	EC-1012	
P046E	046E	EGR SENSOR B	_	2	×	В	EC-1013	
P046F	046F	EGR SENSOR B	_	2	×	В	EC-1016	
P0486	0486	EGR SENSOR B	_	2	×	В	EC-1016	
P0500	0500	VEHICLE SPEED SEN A*5	_	2	×	В	EC-1018 (CVT) EC-1019 (M/ T)	
P0501	0501	VEHICLE SPEED SEN A	_	2	×	В	EC-1022	
P0506	0506	ISC SYSTEM	_	2	×	В	EC-1023	
P0507	0507	ISC SYSTEM	_	2	×	В	EC-1025	
P050A	050A	COLD START CONTROL	_	2	×	А	EC-1027	
P050B	050B	COLD START CONTROL	_	2	×	А	EC-1027	
P050E	050E	COLD START CONTROL	_	2	×	А	EC-1027	
P0520	0520	EOP SENSOR/SWITCH	_	2	_	_	EC-1029	
P0524	0524	ENGINE OIL PRESSURE	_	1	_	_	EC-1032	
P052A	052A	CAMSHAFT POSITION TIMING B1	×	2	×	В	EC-1035	
P052B	052B	CAMSHAFT POSITION TIMING B1	×	2	×	В	EC-1035	
P0544	0544	EXHAUST GAS TEMP SENSOR 1 B1	_	1	×	В	EC-1041	
P0545	0545	EXHAUST GAS TEMP SENSOR 1 B1	_	1	×	В	EC-1041	

DTC)*1	Items	SRT			Permanent	Reference
CONSULT GST*2	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*8	page
P0546	0546	EXHAUST GAS TEMP SENSOR 1 B1	_	1	×	В	EC-1044
P0603	0603	ECM BACK UP/CIRCUIT*6	_	2	× or —	В	EC-1047
P0604	0604	ECM	_	1	×	В	EC-1048
P0605	0605	ECM	_	1 or 2	×	В	EC-1049
P0606	0606	CONTROL MODULE	_	1	× or —	В	EC-1050
P0607	0607	ECM	_	1 or 2	× or —	В	EC-1051
P060A	060A	CONTROL MODULE	_	1	× or —	В	EC-1052
P060B	060B	CONTROL MODULE	_	1	×	В	EC-1053
P0611	0611	FIC MODULE	_	2	×	В	EC-1054
P062B	062B	ECM	_	2	×	В	EC-1055
P062F	062F	CONTROL MODULE	_	1	×	В	EC-1056
P0643	0643	SENSOR POWER/CIRC	_	1	×	В	EC-1057
P06DA	06DA	ENGINE OIL PRESSURE CONTROL	_	2	_	В	EC-1060
P06DB	06DB	ENGINE OIL PRESSURE CONTROL	_	2	_	В	EC-1060
P0850	0850	P-N POS SW/CIRCUIT	_	2	×	В	EC-1062
P100C	100C	V/T OFFSET DATA NOT WRIT- TEN	_	2	_	В	EC-1066
P1148	1148	CLOSED LOOP-B1	_	1	×	А	EC-1067
P1197	1197	FUEL RUN OUT	_	2	_	_	EC-1068
P119A	119A	FUEL PRESSURE SENSOR	_	2	×	А	EC-1070
P119B	119B	FUEL PRESSURE SENSOR	_	2	×	А	EC-1070
P119C	119C	FUEL PRESSURE SENSOR	_	2	×	В	EC-1074
P1212	1212	TCS/CIRC	_	2	_	_	EC-1077
P1217	1217	ENG OVER TEMP	_	1	×	В	EC-1078
P1225	1225	CTP LEARNING-B1	_	2	_	_	EC-1081
P1226	1226	CTP LEARNING-B1	_	2	_	_	EC-1082
P1423	1423	COLD START CONTROL	_	2	×	В	EC-1083
P1424	1424	COLD START CONTROL	_	2	×	В	EC-1083
P1451	1451	TC/SC PR/S-EVAP PR/S	_	2	×	В	EC-1085
P1550	1550	BAT CURRENT SENSOR	_	2	_	_	EC-1088
P1551	1551	BAT CURRENT SENSOR	_	2	_	_	EC-1091
P1552	1552	BAT CURRENT SENSOR		2	_	_	EC-1091
P1553	1553	BAT CURRENT SENSOR		2	_		EC-1094
P1554	1554	BAT CURRENT SENSOR	_	2	_	_	EC-1097
P1556	1556	BAT TMP SEN/CIRC	_	2	_	_	EC-1100
P1557	1557	BAT TMP SEN/CIRC	_	2	_	_	EC-1100
P1564	1564	ASCD SW	_	1	_	_	EC-1102
P1572	1572	ASCD BRAKE SW		1	_	_	EC-1105
P1574	1574	ASCD VHL SPD SEN		1	_	_	EC-1110
P158A	158A	G SENSOR	_	1	_	_	EC-1112

[MR EXCEPT FOR NISMO RS MODELS]

DTC)* ¹	Items	SRT			Permanent	Reference	
CONSULT GST*2	ECM*3	(CONSULT screen terms)	code	Trip	MIL	DTC group*8	page	
P159B	159B	G SENSOR	_	2	×	В	EC-1113	-
P159C	159C	G SENSOR	_	2	×	В	EC-1117	-
P159D	159D	G SENSOR	_	2	×	В	EC-1117	-
P1610	1610	LOCK MODE	_	2	_	_	SEC-50	-
P1611	1611	ID DISCORD, IMMU-ECM	_	2	_	_	SEC-51	-
P1612	1612	CHAIN OF ECM-IMMU	_	2	_	_	SEC-52	-
P1805	1805	BRAKE SW/CIRCUIT	_	2	_	_	EC-1121	-
P2004	2004	SWIRL CONT/V (B1)	_	2	×	Α	EC-1123	-
P2014	2014	SWIRL CONT SEN/SW	_	2	×	В	EC-1126	-
P2016	2016	IN/MANIFOLD RUNNER POS SEN B1	_	2	×	В	EC-1126	_
P2017	2017	IN/MANIFOLD RUNNER POS SEN B1	_	2	×	В	EC-1126	-
P2018	2018	IN/MANIFOLD RUNNER POS SEN B1	_	2	×	В	EC-1126	-
P2081	2081	EXHAUST GAS TEMP SENSOR 1 B1	_	1	×	В	EC-1129	-
P2096	2096	POST CATALYST FUEL TRIM SYS B1	_	2	×	А	EC-1132	-
P2097	2097	POST CATALYST FUEL TRIM SYS B1	_	2	×	А	EC-1132	-
P2100	2100	ETC MOT PWR-B1		1	×	В	EC-1136	
P2101	2101	ETC FNCTN/CIRC-B1	_	1	×	В	EC-1138	-
P2103	2103	ETC MOT PWR	_	1	×	В	EC-1136	-
P2118	2118	ETC MOT-B1		1	×	В	EC-1141	_
P2119	2119	ETC ACTR-B1	_	1	×	В	EC-1143	-
P2122	2122	APP SEN 1/CIRC	_	1	×	В	EC-1145	-
P2123	2123	APP SEN 1/CIRC	_	1	×	В	EC-1145	-
P2127	2127	APP SEN 2/CIRC	_	1	×	В	EC-1148	-
P2128	2128	APP SEN 2/CIRC	_	1	×	В	EC-1148	-
P2135	2135	TP SENSOR-B1	_	1	×	В	EC-1150	-
P2138	2138	APP SENSOR	_	1	×	В	EC-1153	-
P2159	2159	VEHICLE SPEED SEN B	_	2	×	В	EC-1022	-
P2162	2162	VEHICLE SPEED SEN A/B	_	2	×	В	EC-1156	-
P2263	2263	TC SYSTEM-B1	_	2	×	В	EC-1158	-
P2413	2413	EGR SYSTEM	_	1	×	В	EC-1163	-
P2457	2457	EGR COOLING SYSTEM	×	2	×	В	EC-1165	-
P2562	2562	TC BOOST CONTROL POSITN SEN A	_	2	×	В	EC-1167	-
P2563	2563	TC BOOST CONTROL POSITN SEN A	_	2	×	А	EC-1170	-
P2564	2564	TC BOOST CONTROL POSITN SEN A	_	2	×	В	EC-1173	-
P2565	2565	TC BOOST CONTROL POSITN SEN A	_	2	×	В	EC-1173	-

DTO	C*1	Items	SRT			Permanent	Reference	
CONSULT GST*2	ECM*3	(CONSULT screen terms) code		Trip	MIL	DTC group*8	page	
P2566	2566	TC BOOST CONTROL POSITN SEN A	_	2	×	В	EC-1167	
P2610	2610	ECM/PCM INTERNAL ENG OFF TIMER	_	2	×	A and B	EC-1176	
P26A3	26A3	ENGINE COOLANT BYPASS VALVE	_	1 or 2	×	В	EC-1178	
P26A5	26A5	ENGINE COOLANT B/V A POSI SEN	_	2	×	А	EC-1180	
P26A6	26A6	ENGINE COOLANT B/V A POSI SEN	_	2	×	В	EC-1183	
P26A7	26A7	ENGINE COOLANT B/V A POSI SEN	_	2	×	В	EC-1183	
P26AB	26AB	ENGINE COOLANT B/V A POSI SEN	_	2	×	А	EC-1186	

^{*1: 1}st trip DTC No. is the same as DTC No.

Test Value and Test Limit

INFOID:0000000011610825

The following is the information specified in Service \$06 of SAE J1979/ISO 15031-5.

The test value is a parameter used to determine whether a system/circuit diagnostic test is OK or NG while being monitored by the ECM during self-diagnosis. The test limit is a reference value which is specified as the maximum or minimum value and is compared with the test value being monitored.

These data (test value and test limit) are specified by On Board Monitor ID (OBDMID), Test ID (TID), Unit and Scaling ID and can be displayed on the GST screen.

The items of the test value and test limit will be displayed with GST screen which items are provided by the ECM. (e.g., if bank 2 is not applied on this vehicle, only the items of bank 1 are displayed)

^{*2:} This number is prescribed by SAE J1979/ ISO 15031-5.

^{*3:} In Diagnostic Test Mode II (Self-diagnostic results), this number is controlled by NISSAN.

^{*4:} The trouble diagnosis for this DTC needs CONSULT.

^{*5:} When the fail-safe operations for both self-diagnoses occur, the MIL illuminates.

^{*6:} This self-diagnosis is not for ECM power supply circuit, even though "ECM BACK UP/CIRCUIT" is displayed on CONSULT screen.

^{*7:} When the ECM is in the mode that displays SRT status, MIL may blink. For details, Refer to EC-655, "On Board Diagnosis Function".

^{*8:} Refer to EC-764, "Description".

	OBD-		570	li	e and Test mit display)								
Item	MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description							
			P0131	83H	0BH	Minimum sensor output voltage for test cycle							
			P0131	84H	0BH	Maximum sensor output voltage for test cycle							
			P0130	85H	0BH	Minimum sensor output voltage for test cycle							
			P0130	86H	0BH	Maximum sensor output voltage for test cycle							
			P0133	87H	04H	Response rate: Response ratio (lean to rich)							
			P0133	88H	04H	Response rate: Response ratio (rich to lean)							
				P2A00 or P2096 89H 84	84H	The amount of shift in air fuel ratio (too lean)							
											P2A00 or P2097	8AH	84H
			P0130	8BH	0BH	Difference in sensor output voltage							
	01H					P0133	8CH	83H	Response gain at the limited frequency				
lO2S		Air fuel ratio (A/F) sensor 1 (Bank 1)	P014C	8DH	04H	O2 sensor slow response - Rich to lean bank 1 sensor 1							
			P014C	8EH	04H	O2 sensor slow response - Rich to lean bank 1 sensor 1							
			P014D	8FH	84H	O2 sensor slow response - Lean to rich bank 1 sensor 1							
			P014D	90H	84H	O2 sensor slow response - Lean to rich bank 1 sensor 1							
			P015A	91H	01H	O2 sensor delayed response - Rich to lean bank 1 sensor 1							
			P015A	92H	01H	O2 sensor delayed response - Rich to lean bank 1 sensor 1							
					P015B	93H	01H	O2 sensor delayed response - Lean to rich bank 1 sensor 1					
			P015B	94H	01H	O2 sensor delayed response - Lean to rich bank 1 sensor 1							
			P0133	95H	04H	Response rate: Response ratio (lean to rich)							
			P0133	96H	84H	Response rate: Response ratio (rich to lean)							

P

	055			lir	e and Test mit display)	
Item	OBD- MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description
			P0138	07H	0CH	Minimum sensor output voltage for tes cycle
		Heated oxygen sensor 2	P0137	08H	0CH	Maximum sensor output voltage for test cycle
	02H	(Bank 1)	P0138	80H	0CH	Sensor output voltage
			P0139	81H	0CH	Difference in sensor output voltage
			P0139	82H	11H	Rear O2 sensor delay response diag nosis
			P0143	07H	0CH	Minimum sensor output voltage for tes cycle
	03H	Heated oxygen sensor 3 (Bank 1)	P0144	08H	0CH	Maximum sensor output voltage for test cycle
			P0146	80H	0CH	Sensor output voltage
			P0145	81H	0CH	Difference in sensor output voltage
			P0151	83H	0BH	Minimum sensor output voltage for tes cycle
			P0151	84H	0BH	Maximum sensor output voltage for test cycle
			P0150	85H	0BH	Minimum sensor output voltage for tes cycle
		Air fuel ratio (A/F) sensor 1	P0150	86H	0BH	Maximum sensor output voltage for test cycle
HO2S			P0153	87H	04H	Response rate: Response ratio (lean to rich)
			P0153	88H	04H	Response rate: Response ratio (rich t lean)
			P2A03 or P2098	89H	84H	The amount of shift in air fuel ratio (to lean)
	0.511		P2A03 or P2099	8AH	84H	The amount of shift in air fuel ratio (to rich)
	05H	(Bank 2)	P0150	8BH	0BH	Difference in sensor output voltage
			P0153	8CH	83H	Response gain at the limited frequence
			P014E	8DH	04H	O2 sensor slow response - Rich to lean bank 2 sensor 1
			P014E	8EH	04H	O2 sensor slow response - Rich to lean bank 2 sensor 1
			P014F	8FH	84H	O2 sensor slow response - Lean to ric bank 2 sensor 1
			P014F	90H	84H	O2 sensor slow response - Lean to ric bank 2 sensor 1
			P015C	91H	01H	O2 sensor delayed response - Rich t lean bank 2 sensor 1
			P015C	92H	01H	O2 sensor delayed response - Rich t lean bank 2 sensor 1
			P015D	93H	01H	O2 sensor delayed response - Lean t rich bank 2 sensor 1

					e and Test	
	OBD-				mit display)	
Item	MID	Self-diagnostic test item	DTC	·	Unitand	Description
				TID	Scaling ID	
			P015D	94H	01H	O2 sensor delayed response - Lean to rich bank 2 sensor 1
	05H	Air fuel ratio (A/F) sensor 1 (Bank 2)	P0153	95H	04H	Response rate: Response ratio (lean to rich)
			P0153	96H	84H	Response rate: Response ratio (rich to lean)
			P0158	07H	0CH	Minimum sensor output voltage for test cycle
		Heated oxygen sensor 2	P0157	08H	0CH	Maximum sensor output voltage for test cycle
HO2S	06H	(Bank 2)	P0158	80H	0CH	Sensor output voltage
			P0159	81H	0CH	Difference in sensor output voltage
			P0159	82H	11H	Rear O2 sensor delay response diagnosis
			P0163	07H	0CH	Minimum sensor output voltage for test cycle
	07H	Heated oxygen sensor 3 (Bank2)	P0164	08H	0CH	Maximum sensor output voltage for test cycle
			P0166	80H	0CH	Sensor output voltage
			P0165	81H	0CH	Difference in sensor output voltage
			P0420	80H	01H	O2 storage index
	21H	Three way catalyst function	P0420	82H	01H	Switching time lag engine exhaust index value
	2111	(Bank1)	P2423	83H	0CH	Difference in 3rd O2 sensor output voltage
CATA-			P2423	84H	84H	O2 storage index in HC trap catalyst
LYST			P0430	80H	01H	O2 storage index
	22H	Three way catalyst function	P0430	82H	01H	Switching time lag engine exhaust index value
	2211	(Bank2)	P2424	83H	0CH	Difference in 3rd O2 sensor output voltage
			P2424	84H	84H	O2 storage index in HC trap catalyst
			P0400	80H	96H	Low flow faults: EGR temp change rate (short term)
			P0400	81H	96H	Low flow faults: EGR temp change rate (long term)
EGR	31H	EGR function	P0400	82H	96H	Low flow faults: Difference between max EGR temp and EGR temp under idling condition
SYSTEM	зіП	LON IUIICIIOII	P0400	83H	96H	Low flow faults: Max EGR temp
			P1402	84H	96H	High Flow Faults: EGR temp increase rate
			P0402	85H	FCH	EGR differential pressure high flow
			P0401	86H	37H	EGR differential pressure low flow
			P2457	87H	96H	EGR temperature

				liı	e and Test mit display)	
Item	OBD- MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description
			P0011	80H	9DH	VTC intake function diagnosis (VTC alignment check diagnosis)
			P0014	81H	9DH	VTC exhaust function diagnosis (VTC alignment check diagnosis)
			P0011	82H	9DH	VTC intake function diagnosis (VTC drive failure diagnosis)
	2511	VV/T Maniton (Danks)	P0014	83H	9DH	VTC exhaust function diagnosis (VTC drive failure diagnosis)
	35H	VVT Monitor (Bank1)	P100A	84H	10H	VEL slow response diagnosis
			P1090	85H	10H	VEL servo system diagnosis
			P0011	86H	9DH	VTC intake intermediate lock function diagnosis (VTC intermediate position alignment check diagnosis)
VVT SYSTEM			Advanced: P052A Retarded: P052B	87H	9DH	VTC intake intermediate lock system diagnosis (VTC intermediate lock position check diagnosis)
			P0021	80H	9DH	VTC intake function diagnosis (VTC alignment check diagnosis)
			P0024	81H	9DH	VTC exhaust function diagnosis (VTC alignment check diagnosis)
		VVT Monitor (Bank2)	P0021	82H	9DH	VTC intake function diagnosis (VTC drive failure diagnosis)
	36H		P0024	83H	9DH	VTC exhaust function diagnosis (VTC drive failure diagnosis)
	3011		P100B	84H	10H	VEL slow response diagnosis
			P1093	85H	10H	VEL servo system diagnosis
			P0021	86H	9DH	VTC intake intermediate lock function diagnosis (VTC intermediate position alignment check diagnosis)
			Advanced: P052C Retarded: P052D	87H	9DH	VTC intake intermediate lock system diagnosis (VTC intermediate lock position check diagnosis)
	39H	EVAP control system leak (Cap Off)	P0455	80H	0CH	Difference in pressure sensor output voltage before and after pull down
	звн	EVAP control system leak (Small leak)	P0442	80H	05H	Leak area index (for more than 0.04 inch)
EVAP			P0456	80H	05H	Leak area index (for more than 0.02 inch)
SYSTEM	3СН	EVAP control system leak (Very small leak)	P0456	81H	FDH	Maximum internal pressure of EVAP system during monitoring
			P0456	82H	FDH	Internal pressure of EVAP system at the end of monitoring
	3DH	Purge flow system	P0441	83H	0CH	Difference in pressure sensor output voltage before and after vent control valve close

	OBD-			lii	e and Test mit display)	
Item N		Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description
	41H	A/F sensor 1 heater (Bank 1)	Low Input: P0031 High Input: P0032	81H	0BH	Converted value of heater electric current to voltage
		,	P0030	83H	0BH	A/F sensor heater circuit malfunction
	42H	Heated oxygen sensor 2 heat-	Low Input: P0037 High Input: P0038	80H	0CH	Converted value of heater electric current to voltage
		er (Bank 1)	P0141	81H	14H	Rear O2 sensor internal impedance
O2 SEN- SOR	43H	Heated oxygen sensor 3 heater (Bank 1)	P0043	80H	0CH	Converted value of heater electric current to voltage
HEATER	45H	A/F sensor 1 heater (Bank 2)	Low Input: P0051 High Input: P0052	81H	0BH	Converted value of heater electric current to voltage
			P0036	83H	0BH	A/F sensor heater circuit malfunction
	46H	Heated oxygen sensor 2 heat-	Low Input: P0057 High Input: P0058	80H	0CH	Converted value of heater electric current to voltage
		er (Bank 2)	P0161	81H	14CH	Rear O2 sensor internal impedance
4	47H	Heated oxygen sensor 3 heater (Bank 2)	P0063	80H	0CH	Converted value of heater electric current to voltage
			P0411	80H	01H	Secondary air injection system incor- rect flow detected
			Bank1: P0491 Bank2: P0492	81H	01H	Secondary air injection system insufficient flow
			P2445	82H	01H	Secondary air injection system pump stuck off
SEC- OND- ARY AIR	71H	Secondary air system	P2448	83H	01H	Secondary air injection system high airflow
			Bank1: P2440 Bank2: P2442	84H	01H	Secondary air injection system switching valve stuck open
			P2440	85H	01H	Secondary air injection system switching valve stuck open
			P2444	86H	01H	Secondary air injection system pump stuck on
			P0171 or P0172	80H	2FH	Long term fuel trim
	81H	Fuel injection system function (Bank 1)	P0171 or P0172	81H	24H	The number of lambda control clamped
FUEL			P117A / P219A	82H	03H	Cylinder A/F imbalance monitoring
SYSTEM			P0174 or P0175	80H	2FH	Long term fuel trim
	82H	Fuel injection system function (Bank 2)	P0174 or P0175	81H	24H	The number of lambda control clamped
			P117B / P219B	82H	03H	Cylinder A/F imbalance monitoring

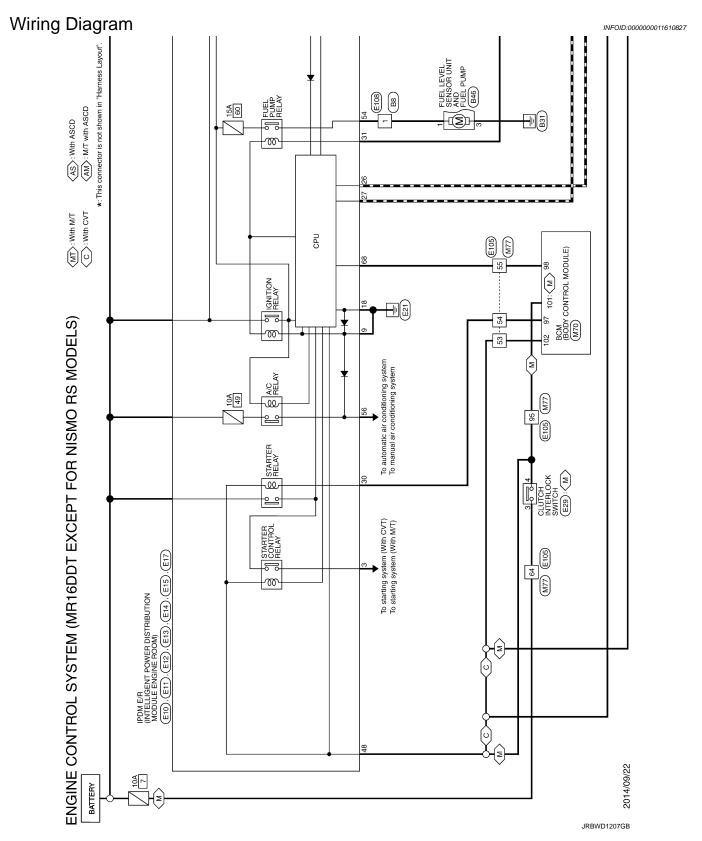
D

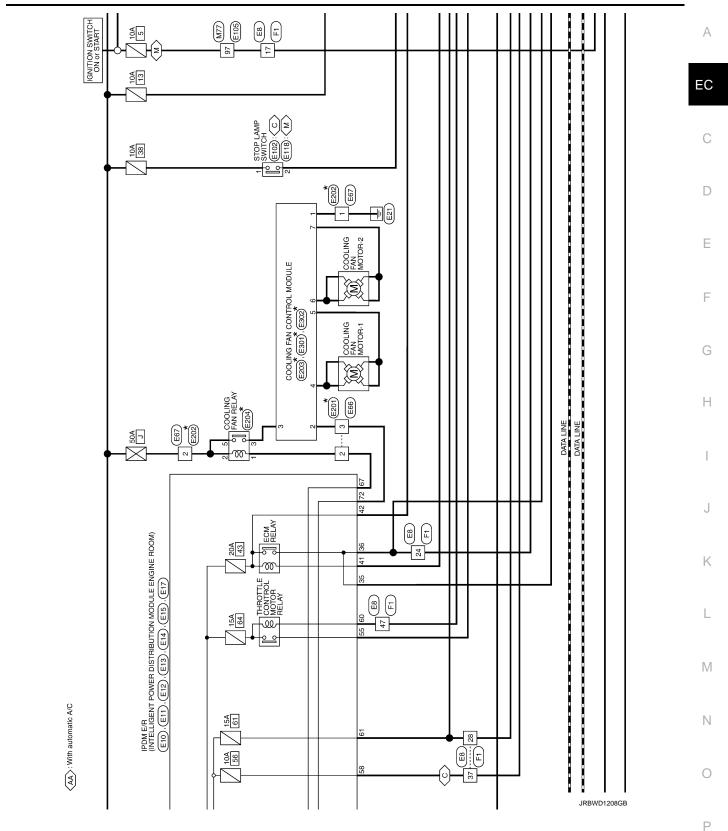
LCOD	HONC	0515 INFORMATION >				TOR MOME NO MEDELO
	OBD-	Self-diagnostic test item	DTC	li	e and Test mit display)	
Item	MID		DTC	TID	Unitand Scaling ID	Description
			P0301	80H	24H	Misfiring counter at 1000 revolution of the first cylinder
			P0302	81H	24H	Misfiring counter at 1000 revolution of the second cylinder
			P0303	82H	24H	Misfiring counter at 1000 revolution of the third cylinder
			P0304	83H	24H	Misfiring counter at 1000 revolution of the fourth cylinder
			P0305	84H	24H	Misfiring counter at 1000 revolution of the fifth cylinder
			P0306	85H	24H	Misfiring counter at 1000 revolution of the sixth cylinder
			P0307	86H	24H	Misfiring counter at 1000 revolution of the seventh cylinder
			P0308	87H	24H	Misfiring counter at 1000 revolution of the eighth cylinder
			P0300	88H	24H	Misfiring counter at 1000 revolution of the multiple cylinders
MOCIDE		M. Iti. I It. I	P0301	89H	24H	Misfiring counter at 200 revolution of the first cylinder
MISFIRE	A1H	Multiple cylinder misfires	P0302	8AH	24H	Misfiring counter at 200 revolution of the second cylinder
			P0303	8BH	24H	Misfiring counter at 200 revolution of the third cylinder
			P0304	8CH	24H	Misfiring counter at 200 revolution of the fourth cylinder
			P0305	8DH	24H	Misfiring counter at 200 revolution of the fifth cylinder
			P0306	8EH	24H	Misfiring counter at 200 revolution of the sixth cylinder
			P0307	8FH	24H	Misfiring counter at 200 revolution of the seventh cylinder
			P0308	90H	24H	Misfiring counter at 200 revolution of the eighth cylinder
			P0300	91H	24H	Misfiring counter at 1000 revolution of the single cylinder
			P0300	92H	24H	Misfiring counter at 200 revolution of the single cylinder
			P0300	93H	24H	Misfiring counter at 200 revolution of the multiple cylinders

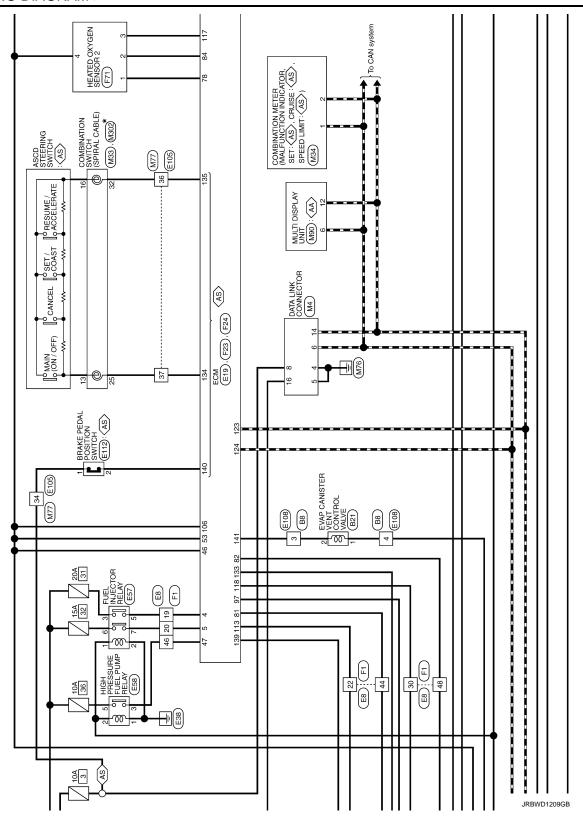
	OBD-	Salf-diagnostic test item		li	e and Test mit display)	
Item	MID	Self-diagnostic test item	DTC	TID	Unitand Scaling ID	Description
	A2H	No. 1 cylinder misfire	P0301	овн	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0301	0CH	24H	Misfire counts for last/current driving cycles
	АЗН	No. 2 cylinder misfire	P0302	овн	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0302	0CH	24H	Misfire counts for last/current driving cycles
	A4H	No. 3 cylinder misfire	P0303	ОВН	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0303	0CH	24H	Misfire counts for last/current driving cycles
	A5H	No. 4 cylinder misfire	P0304	овн	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
4105155			P0304	0CH	24H	Misfire counts for last/current driving cycles
MISFIRE	A6H	No. 5 cylinder misfire	P0305	овн	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0305	0CH	24H	Misfire counts for last/current driving cycles
	A7H	No. 6 cylinder misfire	P0306	овн	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driv- ing cycles
			P0306	0CH	24H	Misfire counts for last/current driving cycles
	A8H	No. 7 cylinder misfire	P0307	овн	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driving cycles
			P0307	0CH	24H	Misfire counts for last/current driving cycles
	A9H	No. 8 cylinder misfire	P0308	овн	24H	EWMA (Exponential Weighted Moving Average) misfire counts for last 10 driv- ing cycles
			P0308	0CH	24H	Misfire counts for last/current driving cycles

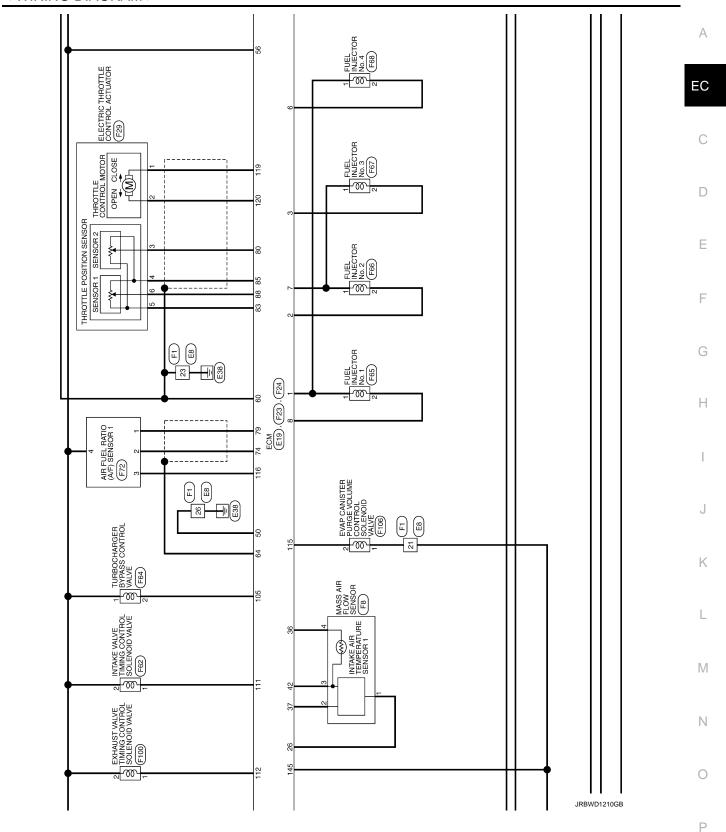
P

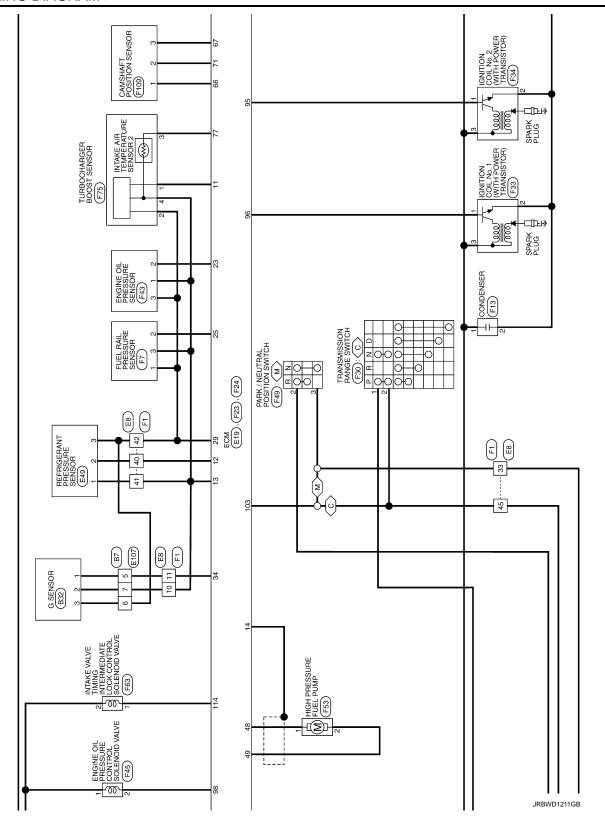
WIRING DIAGRAM

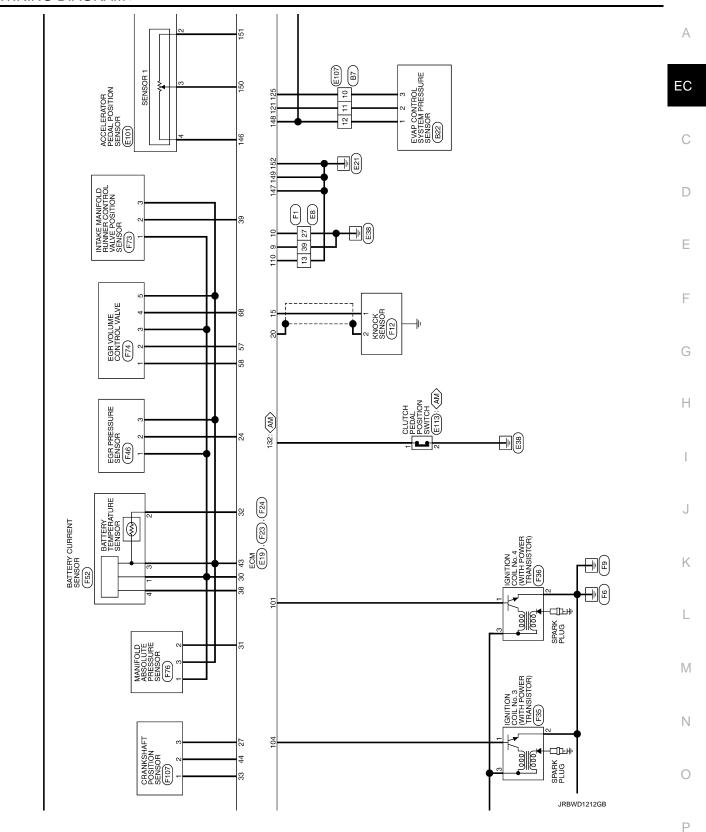


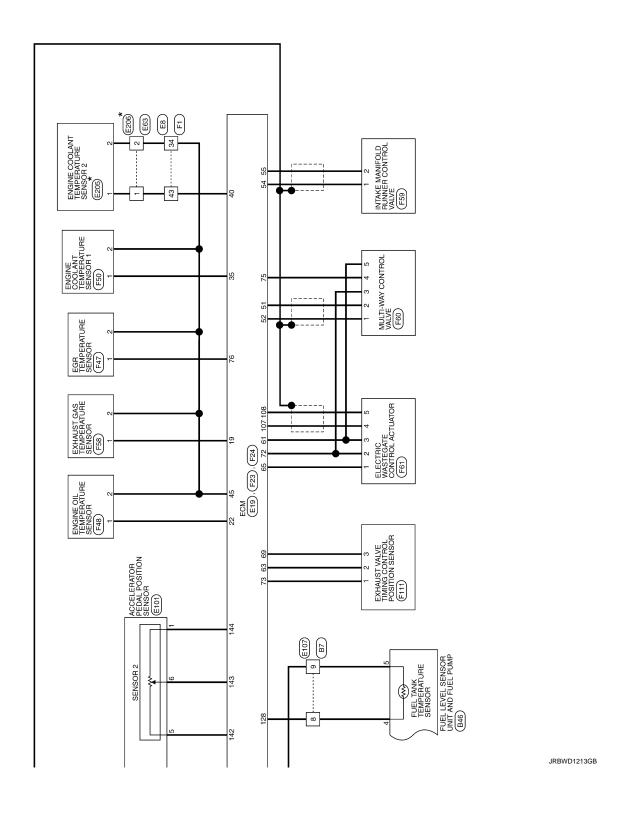












Connector No. B46 Connector Name FLEL LEVEL SENSOR UNT AND FLEL PUMP COnnector Type E08F0Y*RS	(12345)		Connector No. E8 Connector Name WHE TO WIRE Connector Type SAAA38NB-RS10-S.22		Color Of Signal Name [Specification] Wire P	C	RR - UAR engine avoid for NISMO RS G - UAR engine for NISMO RS G - (MR engine for NISMO RS G - (MR engine avoid for NISMO RS Y - (MR engine avoid for NISMO RS Y - (MR engine avoid MISMO RS L - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for NISMO RS - (MR engine for
Connector No. B22 Connector Connector Name EVAP CONTROL SYSTEM PRESSURE SDISCRIM Connector Connector Type E0345GV-RS. Connector	(123) (183) (183) (183) (183) (183)	Terminal Color Of Signal Name (Sheofication) No. Wire No. Wire No. N	Connector No. 8122 Connector Name G SENSOR Connector Type HSSQFB-2V Connector Type Connector	(H.S.) (M. Roser Of No. 1 Signal Name [Specification]	1 G SIGNAL Terminal 2 R GND No. 3 LG POWER SUPPLY 1	20 00 00 00 00 00 00 00 00 00 00 00 00 0	
STEM (MR16DDT EXCEPT FOR NISMO RS MODELS) Connector No. 88 Connector Num 88 Connector Num 89 Connec	4.S. 4.3.2.1	Terminal Golor Of Signal Name [Specification] No. Wire Signal Name [Specification] 1 G C C C C C C C C C	Connector No. B21 Connector Name Evyle DANSTRI VENT CONTROL VALVE Connector Type E02FB-RS	HS (12)	No. Wire Ogran varie Lopecinicatori. 1 R - 2 L -		
ENGINE CONTROL SYSTEM (MR16D Connector No. 87 Ownertor Name WRE TO WRE Connector Type IP24PW-NH	(4.8) [2711 10 9 8 7 6 5 4 3 2 1 1 2 2 2 2 2 2 2 2 2 2 2 3 3 3 3 4 3 5 4 3 5 4 3 5 5 4 3 5 5 4 3 5 5 4 3 5 5 5 5	Terminal Golov Of Signal Name [Specification] No. Wire Signal Name [Specification] 2 W -	++++++	13 P	21 W 22 R 23 SHIELD		

EC

Α

D

Е

F

G

Н

J

Κ

L

M

Ν

0

JRBWD1214GB

Р

E14 PENEL RYTELLIZEM FOWER DSTREUTON MODILE ENGINE PROPERTY MODILE ENGINE PROMIT NO 12FBR-CS	39	Signal Name		52 51 50 <u>100</u> 49 48 <u>100</u> 50 50 50 55 54	Signal Name (Specification)
Connector No. Connector Name Connector Type	Œ H.S.	nal Co	2 2 3 3 3 5 5 6 6 6 7 Nector N	H.S.	No. Wire
Connector No. E12 Connector Name again of the Instituted roves ostrieums would broad Connector Type NSSBER-CS	H.S.	Wire GR R	20 G - Without front fee lump] 20 V - [With front fee lump] Connector Num E13 Connector Num Plots in thrillibert house decineums worke branch Connector Type TH127PV-NH	8 4	
STEM (MR16DDT EXCEPT FOR NISMO RS MODELS) Copt for NISMO RS] Connector No. E10 Connector Name pour 6 a Preliation Fronte centre contractor Connector Type Modelfy-LC Connector Type	H.S.	Terminal Color Of Signal Name [Specification] No. Wire 3 R -	Connector No. E11 Connector Name Rose & Bertalant Forest Scrims/Transcores India Connector Type Molesta-LC	Termical Color Of Signal Name [Specification] No. Wire S B / Y 	
<u> </u>	- IMR engine tor NISMO RS] - IMR engine except for NISMO RS] - IMR engine except for NISMO RS] - IMR engine except for NISMO RS]	IMIX ENGINE TOF NUSMO RSJ	- [MR engine except for NISMO RS] - [MR engine for NISMO RS] - [MR engine of NISMO RS] - [MR engine except for NISMO RS] - [MR engine (NISMO RS] - [Without Incilligent Key] - [With Intelligent Key]	- IMR engine for NISMO RS] - IMR engine except for NISMO RS] - IMR engine except for NISMO RS] - IMR engine except for NISMO RS]	- [With Intelligent Key] - [Without Intelligent Key]
ONTROL SY - [MR engine e	- [MF] - [MF]	ШШ			
ENGINE CONTROL SY 14 LG - [MR engine c 15 R 16 SB 17 GR	W CHEED	11111		440 P P 441 P R P P P P P P P P P P P P P P P P P	8 > 8 2 >

JRBWD1215GB

ENGINE CONTROL SYSTEM (MR16DD 1	CEPT FOR NIS	Connector No. E57 Connector Name FUEL INJECTOR RELAY Connector Type MIGHEN-R-LC MIGHT-R-R-R MIGHEN-R-R MIGHEN-R-R MIGHEN-R-R MIGHEN-R-R MIGHEN	Connector Name WIFE TO WIRE Connector Type RH02EB
67 66 64 72 69 68 Signal Name (Specification)	148 Y SERGAR ROUND 149 GR ACCELERATOR PEDAL POSITION SERVOR 150 GR ACCELERATOR RECUND 151 GR ECM GROUND 152 GR ECM GROUND GR		Terminal Color Of No. Signal Name [Specification]
H - 1-828-484748 W33 613	Terminal Color Of Wire Signal Name [Specification]	Connector No. E58 Connector Nume HIGH PRESSURE FUEL PUMP RELAY Connector Type MIS02FL-M2-LC	Connector Name WIRE TO WIRE Connector Type RHI35B HS.
	4 nector N	5	Terminal Color Of Signal Name [Specification] No Wire
Signal Name (Specification) EAN COMMUNICATION LINE (CAR+1) CAN COMMUNICATION LINE (CAR+1) CAN COMMUNICATION LINE (CAR+1) CAN COMMUNICATION LINE (CAR+1) FILE I AMAY TEMERATION ESTICATION FACE OF TEMERATION SWITCH IGNITION SWITCH SERVING RICHARD STOP LAMP SWITCH STOP LAMP SWITCH		\(\rightarrow \r	

EC

Α

C

D

Е

F

G

Н

. [

Κ

.

.

M

Ν

0

JRBWD1216GB

Ρ

ENGINE CONTROL SYSTEM (MR16DDT EXCEPT FOR NISMO RS MODELS)	T EXCE	T FOR NISMO RS MODELS)				
Connector No. E67	Connector No.	E102 - 58 G -		9	7	- [MR engine except for NISMO RS]
		Г		9	0	- [MR engine for NISMO RS]
Connector Name WIRE TO WIRE	Connector Name	STOP LAMP SWITCH		7	œ	
Connector Type X02FB	Connector	Connector Type M04FW-LC -		89	SB	
				6	œ	- [MR engine for NISMO RS]
	Œ	H		6	>	- [MR engine except for NISMO RS]
	1			10	c	
		ŀ		=	1	
((2 1))		<u> </u>		12	>	
9		H		13	۵	
		╁		14	_	1
		H		15	g	1
Terminal Color Of	Terminal			16	2	1
No. Wire Signal Name [Specification]		Signal Name [Specification]		17	æ	
1 B/4	-	W 78 B		18	>	1
2 \	2	62		19	5	
	6	1 08		20		i
	4			21	*	1
Connector No F101		0 88		22	2	1
l		ł		33	onizi o	
Connector Name ACCELERATOR PEDAL POSITION SENSOR	1	- CO 80		67	SHIELD	1
	Connector	E103				
Connector Lype RHU6FB	Connector Name	WIRE TO WIRE				
Ó2		5) [6		Connector No.	1	E108
[E	Connector Type	TH80MW-CS16-TM4		Connector Name		WIRE TO WIRE
K	ģ	_			╗	
_	B			Connector Type		NS04MW-CS
((123456))	Ę			Ġ		
	į	2		B		
		2 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3		Ę		
		- 0 001 See 10 100 O I I I I I I I I I I I I I I I I I I		2		
la (1 2 3 4
No. Wire Signal Marie Lopecinication.						
\ -	Terminal C	Color Of Commercial No. 150-150-150-150-150-150-150-150-150-150-				
2 GR -	No	Wire Ognal realing Lopechication				
3 8	-			Terminal	Color Of	[:+9:3]18 3
- × +	4	Y Connector Type TH24MW-NH		No.	Wire	ogna varia Especificación
5 0	9			-	а	
- M 9	10		Г	2	57	1
	Ξ			9	BR	- [MR engine for NISMO RS]
	12	B 123/15/5/18/0	Q 10 11 12	9	_	- [MR engine except for NISMO RS]
	13	7 :	2 2 2	4	а	ı
	14	SHIELD - 13 14 15 16 17 18 19 20 21	20 21 22 23 24			
	34	36				
	35					
	36	B Terminal Color Of				
	37	P No. Wire Signal Name [Specification]	cmcation			
	52					
	53	- 2 ×				
	54	3 ^				
	22	5				

JRBWD1217GB

Connector No. E204 Connector Name COOLING FAN RELAY Connector Type 24347,95900	Terminal Color Of Signal Name (Specification) No. Wire No. Wire Signal Name (Specification) 1 No. No.	Terminal Color Of Signal Name (Specification) No. Wive Signal Name (Specification) 1
Connector No. E102 Connector Name WIPE TO WIRE Connector Type XIQNB	Terminal Color Of Signal Name [Specification] No. Wires No. Wires No.	Terminal Color Of Signal Name Specification Name Wide Name Specification Name Na
ENGINE CONTROL SYSTEM (MR16DDT EXCEPT FOR NISMO RS MODELS) Connector Name BRAKE PEDAL POSITION SWITCH Connector Name BRAKE PEDAL POSITION SWITCH Connector Type MN2FB-LC Connector Type MN2FB-LC ALS H.S. II.S.	Terminal Color Ol Signal Name Specification No. Wive Wind Signal Name Specification	Terminal Out-Or Signal Name (Specification) No No
ENGINE CONTROL SYSTEM (MR16D) Connector Name BRAKE PEDAL POSITION SWTCH Connector Type MOSTBR-LC MS H.S.	Terminal Color Of Signal Name [Specification] Name Name Signal Name Specification] 1 Ele -	Terminal Color Of Signal Name [Specification]

EC

Α

С

D

Е

F

G

Н

K

L

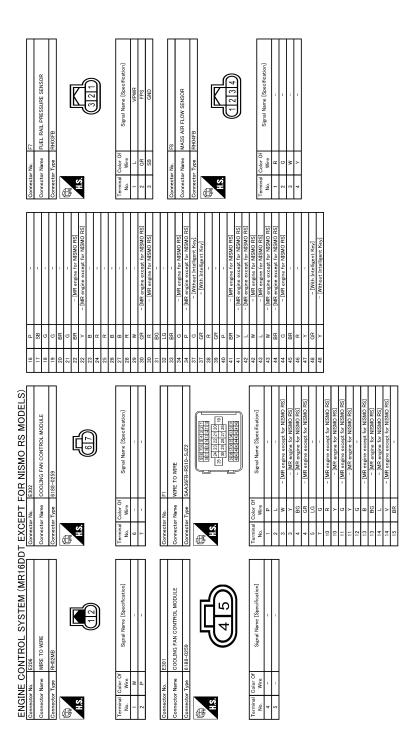
M

Ν

0

JRBWD1218GB

Ρ



JRBWD1219GB

ENGINE CONTROL SYSTEM (MR16DDT	TEXC	EPT	EXCEPT FOR NISMO RS MODELS)	ç	8	CIMIDOD GOORIS	g	ě	o doging morrison a littodist
Connector No. F12	Connector No.	or No.	F23	54	Ä	SENSOR GROUND	98	A	I HRO I I LE POSITION SENSOR 2
Connector Name KNOCK SENSOR	Connector Name	or Name	ECM	44	×	SENSOR GROUND	18	BR	ECM RELAY (SELF SHUT-OFF)
- 1				42	۵	SENSOR GROUND	82	>	FUEL PUMP RELAY
Connector Type BS02FGY_B-AHY	Connector Type	or Type	MAB35FB-MEB20-LH	46	œ	MULTI-WAY CONTROL VALVE POWER SUPPLY	83	В	SENSOR POWER SUPPLY
	ū			47	۲	HIGH PRESSURE FUEL PUMP DRIVER POWER SUPPLY	84	Μ	HEATED OXYGEN SENSOR 2
	E			48	H	HIGH PRESSURE FUEL PUMP (HI)	82	œ	SENSOR GROUND
[·		1 6 11 333133 46 51	49	>	HIGH PRESSURE FUEL PUMP (LO)	88	o	THROTTLE POSITION SENSOR 1
4	Ź		2 7 12 22 23 24 24 52	20	8	ECM GROUND	92	P	IGNITION SIGNAL NO.2
□1 2 □			4 9 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	51	≻	MULTI-WAY CONTROL VALVE MOTOR (-)	96	œ	IGNITION SIGNAL NO.1
)			5 10 8 20 28 30 38 44 50 55	52	g	MULTI-WAY CONTROL VALVE MOTOR (+)	97	٨	THROTTLE CONTROL MOTOR RELAY
				53	œ	INTAKE MANIFOLD RUNNER CONTROL VALVE POWER SUPPLY	86	۳	ENGINE OIL PRESSURE CONTROL SOLENOID VALVE
				54	В	INTAKE MANIFOLD RUNNER CONTROL VALVE (OPEN)	101	SB	IGNITION SIGNAL NO.4
Terminal Color Of Scand Name [Secretion]	Terminal	Color Of	Cional Mama [Consignation]	22	W	INTAKE MANIFOLD RUNNER CONTROL VALVE (CLOSE)	103	BR	PNP SIGNAL
Signal Name	No.	Wire	ognal Name [opecinication]				104	Ь	IGNITION SIGNAL NO.3
	-	g	FUEL INJECTOR NO.1, 4 (HI)				105	BR	TURBOCHARGER BYPASS CONTROL VALVE
	2	SB	FUEL INJECTOR NO.2 (LO)	Connector No.	or No.	F24	106	œ	ELECTRIC WASTEGATE CONTROL ACTUATOR POWER SUPPLY
	3	Μ	FUEL INJECTOR NO.3 (LO)	Connect	Connector Name	WO	107	\searrow	ELECTRIC WASTEGATE CONTROL ACTUATOR MOTOR (+)
	4	g	FUEL INJECTOR DRIVER POWER SUPPLY 1				108	P/L	ELECTRIC WASTEGATE CONTROL ACTUATOR MOTOR (+)
Connector No. F13	so.	æ	FUEL INJECTOR DRIVER POWER SUPPLY 2	Connector Type	or Type	MAB55FB-MEB10-LH	110	8	ECM GROUND
Connector Name CONDENSER	9	œ	FUEL INJECTOR NO.4 (LO)	ą			Ξ	Μ	INTAKE VALVE TIMING CONTROL SOLENOID VALVE
- 1	7	9	FUEL INJECTOR NO.2, 3 (HI)	子			112	o	EXHAUST VALVE TIMING CONTROL SOLENOID VALVE
Connector Type M02FW-LC	80	BH	FUEL INJECTOR NO.1 (LO)	<u> </u>		25 0130/10001 1301/1301 13	113	Υ.	POWER SUPPLY FOR ECM (ENGINE OFF TIMER)
	6	GR	ECM GROUND	2	_	50 CO 120 120 120 CO 12	114	٦	INTAKE VALVE TIMING INTERMEDIATE LOCK CONTROL SOLENGID VALVE
	10	В	ECM GROUND			81 27 20 20 20 20 20 20 20 20 20 20 20 20 20	115	٦	EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE
1	11	٨	TURBOCHARGER BOOST SENSOR			(2) Still (3) (8) (8) (8) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	116	ŋ	A/F SENSOR 1 HEATER
	12	Ь	REFRIGERANT PRESSURE SENSOR				117	9	HEATED OXYGEN SENSOR 2 HEATER
	13	^	SENSOR GROUND				118	GR	THROTTLE CONTROL MOTOR POWER SUPPLY
7	14	SHIELD	SHIELD	Terminal	I Color Of	[-::t-:g-:-g]	119	GR	THROTTLE CONTROL MOTOR (OPEN)
	15	М	KNOCK SENSOR	N	Wire	Oignal Name Lopecinication	120	BR	THROTTLE CONTROL MOTOR (CLOSE)
	19	P	EXHAUST GAS TEMPERATURE SENSOR	26	œ	EGR VOLUME CONTROL VALVE POWER SUPPLY			
Terminal Color Of Stand Name [Sanation]	20	В	SENSOR GROUND	57	Μ	EGR VOLUME CONTROL VALVE MOTOR (+)			
	22	≻	ENGINE OIL TEMPERATURE SENSOR	58	œ	EGR VOLUME CONTROL VALVE MOTOR (-)	Connector No.		F29
1	23	G	ENGINE OIL PRESSURE SENSOR	9	В	ECM GROUND			COLUMN TO THE PARTY OF THE PART
- 8	24	9	EGR PRESSURE SENSOR	61	Μ	SENSOR POWER SUPPLY			ELECTING THROUTE CONTROL ACTUALOR
	25	GR	FUEL RAIL PRESSURE SENSOR	63	_	SENSOR GROUND	Connector Type	ır Type	RH06FB
	26	œ	SENSOR POWER SUPPLY	64	SHIELD	SHIELD	Ŀ		
	27	o	SENSOR POWER SUPPLY	65	۳	WASTEGATE CONTROL VALVE POSITION SENSOR	E		
	59	_	SENSOR POWER SUPPLY	99	ŋ	SENSOR POWER SUPPLY	Į		<u> </u>
	30	>-	SENSOR POWER SUPPLY	67	BR	CAMSHAFT POSITION SENSOR	2		<u>]</u>
	31	>	MANIFOLD ABSOLUTE PRESSURE SENSOR	89	GR	EGR VOLUME CONTROL VALVE POSITION SENSOR			(4 2 3 4 E E
	32	BG	BATTERY TEMPERATURE SENSOR	69	9	EXHAUST VALVE TIMING CONTROL POSITION SENSOR			
	33	œ	CRANKSHAET POSITION SENSOR	7.1	Ŀ	SENSOR GROUND			
	34		G SENSOR	72	· ·	SENSOR GROUND			
	33	-	ENGINE COOL ANT TEMPERATURE SENSOR 1	73	æ	SENSOR POWER SUPPLY	Terminal	Color Of	
	y.	>	INTAKE AID TEMBERATI IDE SENSOR 1	72	a	A /F SENSOB 1	N.	Wire	Signal Name [Specification]
	32		MASS AIR FLOW SENSOR	75	-	MIII TI-WAY CONTROL VALVE BOSTION SENSOB	-	_	- [MR engine for NISMO RS]
	8	, ,	DATTEDY CLIBBENT SENSOD	2 4	٥	CONTROL PARTIES SENSOR	ŀ	3 0	- fMD creates propert for MICMO DS
	9 00	9 8	MEANS MANIEUR DIMBER CONTROL VALVE DOCUMEN CENSOR	2, 22	2 >	INTAKE AIR TEMPERATURE SENSOR 2	- 6	0 00	- [MR engine except for NSMO RS]
	8	á≥	ENGINE COOL ANT TEMBERATIBE SENSOR 2	102	٥ ،	SENSOR CROUND	4 0	a (- [MC proving for NICAMO DC]
	9	4	ENGINE COOLAN LEMPERATURE SENSOR 2	20	r	SENSOR GROUND	۱	9	- [MR engine for NISMU RS]
	45	>	SENSOR GROUND	79	≥	A/F SENSOR 1	m	>	1

EC

Α

D

Е

F

G

Н

Κ

M

Ν

JRBWD1220GB

Ρ

Connector No. F45 Connector Name Briefle Confect Southern wave Connector Type RH02FLGY M.S. H.S.	Terminal Color Of Signal Name (Specification) Wire Wire VICC	Convector No. F46 Convector Name EGR PRESSURE SENSOR Convector Type HS0375P-2V	Terminal Color Of Signal Name Specification Wire W VOC 2 0 C VOUT 3 Y C C C C C C C C C	
Connector No. F26 Connector Name Journal Co. No. 4 (WITH POWER TOWNER) TOWNERS	Terminal Golor Of Signal Name [Specification]	Connector No. F43 Connector Name ENGINE OIL PRESSURE SENSOR Connector Type RH037B H.S.	Terminal Golor Of Signal Name (Specification)	
ENGINE CONTROL SYSTEM (MR16DDT EXCEPT FOR NISMO RS MODELS)	Terminal Golor Of No. Signal Name (Specification) Wire	Connector No. 735 Connector Name iostron co. No. 3 (WITH POWER TOWNERTON) Connector Type ELOJF CIV-RS H.S.	Terminal Golor Of Signal Name (Specification) No. Wire	
CONTROL SYSTEM (MR16DC CONTROL SYSTEM CONTROL	Connector Type YDX06FB+HS4 M.S. (8 4 3 77)	Termined Color Of Signal Name Specification] No. Wife Signal Name Specification] 2 ER	sctor N	Terminal Color Of No. Wire Signal Name [Specification]

JRBWD1221GB

Commettor No. F18 Commettor Name EXMAUST GAS TEMPERATURE SENSOR Commettor Type HSSZAW-1V.	Terminal Color OI Signal Name [Specification] 1 1.0 ENY TEMP Commentur No. F59 Commentur No. F59 Commentur No. F59 Commentur Name RFH0ZFE RFH0ZFE Commentur Name RFH0ZFE RFH0	Terminal Color Of Signal Name [Specification] No. Wire Signal Name [Specification] No. Wire TOV_VALVE_COLOSE No. VALVE_COLOSE TOV_VALVE_COLOSE No. VALVE_COLOSE No
Connector No. F72 Connector Name BATTERY CURRENT SENSOR Connector Type SAZOHFCY TH.S.	Terminal Color Of Signal Name (Specification) Name Name	Terminal Color Of Signal Name (Specification) Wire BR
STEM (MR16DDT EXCEPT FOR NISMO RS MODELS)	Terminal Color Of Signal Name Specification	Terminal Color Of Signal Name [Specification] No. Wire Wile TW 2 P GND-TW
ENGINE CONTROL SYSTEM (MR16DE Gomester Na. Fat Commetter Type RSG/FILGY Commetter Type RSG/FILGY MAS	Terminal Golor Of Signal Name (Specification) No. Wive Signal Name (Specification) 1 R EGR TEMP GND	Terminal Calur Of Signal Name Specification

EC

Α

D

Е

F

G

Н

Κ

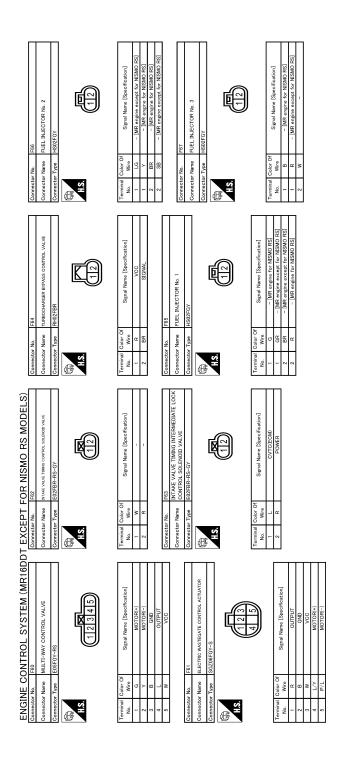
L

 \mathbb{N}

Ν

JRBWD1222GB

Ρ



JRBWD1223GB

ENGINE CONTROL SYSTEM (MR16DI Connector No. F88	STEM (MR16DDT EXCEPT FOR NISMO RS MODELS) Connector No. F72	Connector No. F74	Connector No. F76
Connector Name FUEL INJECTOR No. 4	Connector Name AIR FUEL RATIO (A/F) SENSOR 1	Connector Name EGR VOLUME CONTROL VALVE	Connector Name MANIFOLD ABSOLUTE PRESSURE SENSOR
Connector Type HS02FGY	Connector Type RH04FB-P	Connector Type HS05FB	Connector Type RH03FB
Ę S	S. S	E S	K S
	<u> </u>	(12345)	
Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification] No.	Terminal Color Of Signal Name [Specification]	Terminal Color Of Signal Name [Specification] No. Wire
0 0	1 w	1 R MOTOR(-)	1 Y VCC
- u 7			
Connector No E71	4 R = -	4 GR EGR	
e e		-	Connector No. F100
Connector Type RH04FDGY-P		Connector No. F75	Connector Name EXHAUST VALVE TIMING CONTROL SOLENOID VALVE
1		<u>ء</u>	Connector Type E02FG-RS-LGY
	Connector Type RH03FB	Connector Type RH04FB	B
			HS ST
2	S. I.	E.S.	
- E		(1234)	
No. Wire Ognal valle Especifications	Terminal Color Of		Terminal Color Of Signal Name [Specification] No. Wire
		Terminal Color Of Signal Name [Specification]	2 0
2 ac	2 BR OUTPUT	t	
	3 B GND	1 W - [MR engine except for NISMO RS]	
		7	
		2 W - [MR engine for NISMO RS] 3 SB - [MR engine for NISMO RS]	
		- D	
		4 SB - [MR engine except for NISMO RS]	
		4 V - [MR engine for NISMO RS]	

EC

Α

D

Е

F

G

Н

1

Κ

L

M

Ν

 \cap

JRBWD1224GB

Ρ

Connector No. MX4 Connector Name COMBINATION METER Connector Type TH40FW-NH MX MX MX MX MX MX MX MX MX M	Terminal Color Of Signal Name (Specification) No. Wire CAN+H 1 CAN+H 2 P CAN+H 4 Y VEHICILE SPEED SIGNAL (8-PLUSE) 5 C PADDLE SPEED SIGNAL (8-PLUSE) 6 BR FUEL EVER SHIRKS SIGNAL	7 R AIR EAG SIGNAL	B B B B B B B B B B
Connector No. M4 Connector Name DATA LINK CONNECTOR Connector Type BD16FW HS HS	Terminal Golor Of Signal Name [Specification] A B C C C C C C C C C	14 P	\$11,82/33 [34]
ENGINE CONTROL SYSTEM (MR16DDT EXCEPT FOR NISMO RS MODELS) Connector Name prove course scarce outset course, excised outset. Connector Name prove course scarce outset course, excised outset. Connector Name (EQSFL-RS-LCY) Connector Name (EQSFL-RS-LCY)	Terminal Color Of Signal Name (Specification) No. Wire Signal Name (Specification)	Connector No. Filt Connector Name District Name Control regimes assess Connector Type RH037B	Terminal Cultor Of Sugnal Name [Specification] No. Wire 1 OR 2 L 3 LG - 1
ENGINE CONTROL SYSTEM (MR16DI Connector Nu. F106 Connector Nume (sive cwarter resett victure; coctation victor Connector Type (EDZFL-RS-LGY)	Terminal Goldor Of Sagual Name (Specification)	Connector No. F107 Connector Name GRANNSHAFT POSITION SENSOR Connector Type RH03FB RM3 RM3 RM3 RM3 RM3 RM3 RM3 RM	Terminal Debtr Of Signal Name Specification]

JRBWD1225GB

ENGINE CONTROL SYSTEM

EC

Α

D

Е

F

G

Н

J

Κ

L

M

Ν

 \cap

JRBWD1226GB

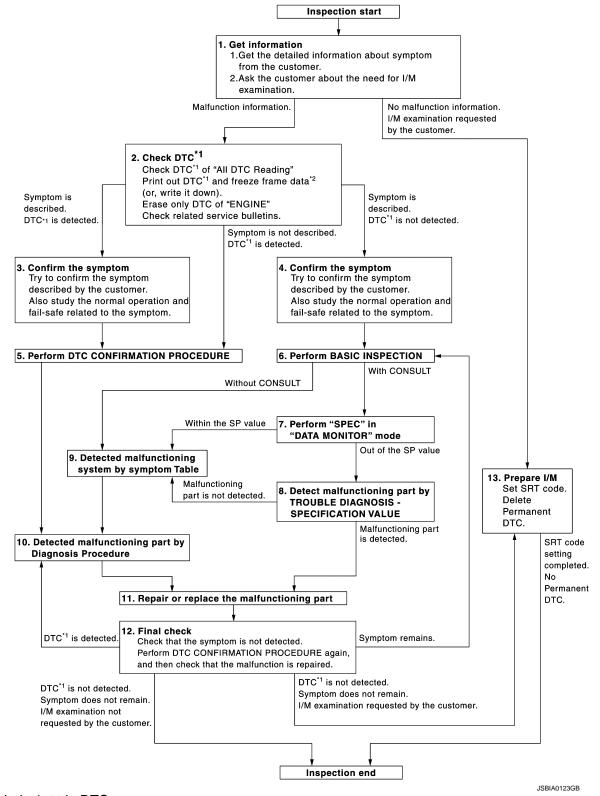
Ρ

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Work Flow

OVERALL SEQUENCE



^{*1:} Include 1st trip DTC.

^{*2:} Include 1st trip freeze frame data.

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

DETAILED FLOW

1.GET INFORMATION FOR SYMPTOM

--

Α

 Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred) using the "Diagnostic Work Sheet". (Refer to <u>EC-731, "Diagnostic</u> <u>Work Sheet"</u>.)

EC

2. Ask if the customer requests I/M examination.

Malfunction information, obtained>>GO TO 2.

No malfunction information, but a request for I/M examination>>GO TO 13.

2. CHECK DTC

Е

Н

- Check DTC.
- 2. Perform the following procedure if DTC is displayed.
- Record DTC and freeze frame data. (Print them out using CONSULT or GST.)
- Erase DTC.

(P) With CONSULT: "How to Erase DTC and 1st Trip DTC" in EC-656, "CONSULT Function".

- Study the relationship between the cause detected by DTC and the symptom described by the customer. (Symptom Table is useful. Refer to EC-1241, "Symptom Table".)
- 3. Check related service bulletins for information.

Is any symptom described and is any DTC detected?

Symptom is described, DTC is detected>>GO TO 3.

Symptom is described, DTC is not detected>>GO TO 4.

Symptom is not described, DTC is detected>>GO TO 5.

3.CONFIRM THE SYMPTOM

Try to confirm the symptom described by the customer (except MIL ON).

Also study the normal operation and fail safe related to the symptom. Refer to <u>EC-1248</u>, "<u>Description</u>" and <u>EC-688</u>, "Fail <u>Safe</u>".

Diagnosis Work Sheet is useful to verify the incident.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 5.

4. CONFIRM THE SYMPTOM

K

Try to confirm the symptom described by the customer.

Also study the normal operation and fail safe related to the symptom. Refer to <u>EC-1248</u>, "<u>Description</u>" and <u>EC-688</u>, "<u>Fail Safe</u>".

Diagnosis Work Sheet is useful to verify the incident.

Verify relation between the symptom and the condition when the symptom is detected.

>> GO TO 6.

IV

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC CONFIRMATION PROCEDURE for the displayed DTC, and then make sure that DTC is detected again.

If two or more DTCs are detected, refer to <u>EC-692, "DTC Inspection Priority Chart"</u> and determine trouble diagnosis order.

NOTE:

Freeze frame data is useful if the DTC is not detected.

 Perform Component Function Check if DTC CONFIRMATION PROCEDURE is not included on Service Manual. This simplified check procedure is an effective alternative though DTC cannot be detected during this check.

If the result of Component Function Check is NG, it is the same as the detection of DTC by DTC CONFIR-MATION PROCEDURE.

Is DTC detected?

YES >> GO TO 10.

NO >> Check according to EC-694, "DTC Index".

Revision: 2014 October EC-729 2015 JUKE

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

6. PERFORM BASIC INSPECTION

Perform EC-750, "Work Procedure".

Do you have CONSULT?

YES >> GO TO 7. NO >> GO TO 9.

7.PERFORM SPEC IN DATA MONITOR MODE

(P)With CONSULT

Make sure that "MASS AIR FLOW SENSOR (Hz)", "B/FUEL SCHDL" and "A/F ALPHA-B1" are within the SP value using CONSULT in "SPEC" of "DATA MONITOR" mode. Refer to EC-770, "Component Function Check".

Is the measurement value within the SP value?

YES >> GO TO 9. NO >> GO TO 8.

f 8.DETECT MALFUNCTIONING PART BY TROUBLE DIAGNOSIS - SPECIFICATION VALUE

Detect malfunctioning part according to EC-771, "Diagnosis Procedure".

Is malfunctioning part detected?

YES >> GO TO 11. NO >> GO TO 9.

9.DETECT MALFUNCTIONING SYSTEM BY SYMPTOM TABLE

Detect malfunctioning system according to <u>EC-1241, "Symptom Table"</u> based on the confirmed symptom in step 4, and determine the trouble diagnosis order based on possible causes and symptom.

>> GO TO 10.

10. DETECT MALFUNCTIONING PART BY DIAGNOSIS PROCEDURE

Inspect according to Diagnosis Procedure of the system.

NOTE:

The Diagnosis Procedure in EC section described based on open circuit inspection. A short circuit inspection is also required for the circuit check in the Diagnosis Procedure. For details, refer to Circuit Inspection in GI-47. "Circuit Inspection".

Is malfunctioning part detected?

YES >> GO TO 11.

NO >> Monitor input data from related sensors or check the voltage of related ECM terminals using CON-SULT. Refer to <u>EC-668</u>, "Reference Value".

11. REPAIR OR REPLACE THE MALFUNCTIONING PART

- 1. Repair or replace the malfunctioning part.
- 2. Reconnect parts or connectors disconnected during Diagnosis Procedure again after repair and replacement.
- 3. Check DTC. If DTC is displayed, erase it. Refer to the following.
 - (F) With CONSULT: "How to Erase DTC and 1st Trip DTC" in EC-656, "CONSULT Function".

>> GO TO 12.

12. FINAL CHECK

When DTC was detected in step 2, perform DTC CONFIRMATION PROCEDURE or Component Function Check again, and then make sure that the malfunction have been repaired securely.

When symptom was described from the customer, refer to confirmed symptom in step 3 or 4, and make sure that the symptom is not detected.

Is DTC detected and does symptom remain?

YES-1 >> DTC is detected: GO TO 10.

YES-2 >> Symptom remains: GO TO 6.

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

NO-1 >> No request for I/M examination from the customer: Before returning the vehicle to the customer, always erase unnecessary DTC in ECM and TCM (PWith CONSULT: Refer to "How to Erase DTC and 1st Trip DTC" in EC-656, "CONSULT Function", If the completion of SRT is needed, drive vehicle under the specific driving pattern. Refer to EC-759, "SRT Set Driving Pattern".

NO-2 >> I/M examination, requested from the customer: GO TO 13.

13. PREPARE FOR I/M EXAMINATION

- Set SRT codes. Refer to EC-758, "Description".
- Erase permanent DTCs. Refer to EC-764, "Description".

>> INSPECTION END

Diagnostic Work Sheet

DESCRIPTION

There are many operating conditions that lead to the malfunction of engine components. A good grasp of such conditions can make troubleshooting faster and more accurate.

In general, each customer feels differently about a incident. It is important to fully understand the symptoms or conditions for a customer complaint.

Utilize a diagnostic worksheet like the one on the next page in order to organize all the information for troubleshooting.

Some conditions may cause the MIL to come on steady or blink and DTC to be detected. Examples:

- Vehicle ran out of fuel, which caused the engine to misfire.
- Fuel filler cap was left off or incorrectly screwed on, allowing fuel to evaporate into the atmosphere.

KEY POINTS

WHAT Vehicle & engine model WHEN Date, Frequencies WHERE..... Road conditions HOW Operating conditions, Weather conditions, **Symptoms**

SEF907L

INFOID:0000000011610830

EC

D

Е

F

Н

K

N

Р

EC-731 Revision: 2014 October 2015 JUKE

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

WORKSHEET SAMPLE

Customer name MR/MS Model & Year VIN		VIN		
Engine #		Trans.	Mileage	
Incident Date		Manuf. Date	In Service Date	
Fuel and fuel	filler cap	☐ Vehicle ran out of fuel causing misfire☐ Fuel filler cap was left off or incorrectly	y screwed on.	
	☐ Startability	☐ Impossible to start ☐ No combust ☐ Partial combustion affected by th ☐ Partial combustion NOT affected ☐ Possible but hard to start ☐ Other	nrottle position I by throttle position	
Symptoms	□ Idling	☐ No fast idle ☐ Unstable ☐ H☐ Others [ligh idle □ Low idle]	
,,,,	☐ Driveability	☐ Stumble ☐ Surge ☐ Knock ☐ Intake backfire ☐ Exhaust backfi ☐ Others [☐ Lack of power re]	
	☐ Engine stall	☐ At the time of start ☐ While idling ☐ While accelerating ☐ While dece ☐ Just after stopping ☐ While loadi	lerating	
Incident occur	rrence	☐ Just after delivery ☐ Recently ☐ In the morning ☐ At night ☐	☐ In the daytime	
Frequency		☐ All the time ☐ Under certain cond	ditions	
Weather cond	litions	☐ Not affected		
Weather ☐ Fine ☐ Raining ☐ Snowing ☐ Others [Others [
	Temperature	☐ Hot ☐ Warm ☐ Cool ☐] Cold ☐ Humid °F	
		☐ Cold ☐ During warm-up ☐ /	After warm-up	
Engine conditions		Engine speed0 2,000	4,000 6,000 8,000 rpm	
Road conditio	ns	☐ In town ☐ In suburbs ☐ Hig	hway	
Driving condit	ions	□ Not affected □ At starting □ While idling □ At racing □ While accelerating □ While cruising □ While decelerating □ While turning (RH/LH)		
		Vehicle speed 0 10 20	30 40 50 60 MPH	
Malfunction in	dicator lamp	☐ Turned on ☐ Not turned on		

MTBL0017

SERVICE AFTER REPLACING OR REMOVING ENGINE PARTS [MR EXCEPT FOR NISMO RS MODELS]

< BASIC INSPECTION >

SERVICE AFTER REPLACING OR REMOVING ENGINE PARTS

Description INFOID:0000000011610831

SPECIAL REPAIR REQUIREMENT

×: Applicable

Α

EC

C

D

Е

F

Н

Destaura	Service po	erformed	Boo to Love to	Defende
Part name	Replacement	Removal*	Required service	Reference
	×		Additional service when replacing ECM	EC-734
ECM		.,	Accelerator pedal released position learning	EC-738
		×	Throttle valve closed position learning	EC-739
Accelerator Pedal	×	×	Accelerator pedal released position learning	EC-738
G sensor	×	×	G sensor calibration	EC-748
Turbaahargar aaaamblu		.,	Wastegate valve closed positon learning	EC-740
Turbocharger assembly	×	×	Idle air volume learning	EC-743
	· ·		Throttle valve closed position learning	EC-739
Electric throttle	×	×	Idle air volume learning	EC-743
	×		Air fuel ratio initial learning	EC-745
Mass air flow sensor	×		Air fuel ratio initial learning	EC-745
Fuel injector	×		All fuel fatio initial learning	<u>LC-143</u>
Battery	×		Cumulative battery discharge current clear	EC-749
Camshaft	×		Valve timing offset data clear	EC-741
Camsnait	*		Valve timing offset data writing <u>EC</u>	
Timing chain	×		Valve timing offset data clear	EC-741
Tilling Chain	^		Valve timing offset data writing	EC-742
			Idle air volume learning	EC-743
			Air fuel ratio initial learning	EC-745
Engine assembly	×		Valve timing offset data clear	EC-741
Linguis assembly	^		Valve timing offset data writing	EC-742
			Wastegate valve closed positon learning	EC-740
			Throttle valve closed position learning	EC-739

^{*:} Harness connector disconnection included.

M

Κ

L

Ν

0

Р

EC-733 Revision: 2014 October 2015 JUKE

ADDITIONAL SERVICE WHEN REPLACING ECM

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

ADDITIONAL SERVICE WHEN REPLACING ECM

Description INFOID:0000000011610832

When replacing ECM, the following procedure must be performed. (For details, refer to <u>EC-734, "Work Procedure"</u>.)

PROGRAMMING OPERATION

NOTE:

After replacing with a blank ECM, programming is required to write ECM information. Be sure to follow the procedure to perform the programming.

Work Procedure

1. SAVE ECM DATA

(P) With CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Turn ignition switch ON.
- 4. Select "SAVING DATA FOR REPLC CPU" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 5. Follow the instruction of CONSULT display.

NOTE:

Necessary data in ECM is copied and saved to CONSULT.

>> GO TO 2.

2. CHECK ECM PART NUMBER

Check ECM part number to see whether it is blank ECM or not.

NOTE:

- Part number of blank ECM is 23703 xxxxx.
- Check the part number when ordering ECM or with the one included in the label on the container box.

Is the ECM a blank ECM?

YES >> GO TO 3.

NO >> GO TO 5.

3.SAVE ECM PART NUMBER

Read out the part number from the old ECM and save the number, following the programming instructions. Refer to "CONSULT Operation Manual".

NOTE:

- The ECM part number is saved in CONSULT.
- Even when ECM part number is not saved in CONSULT, go to 4.

>> GO TO 4.

4. PERFORM ECM PROGRAMMING

After replacing ECM, perform the ECM programming. Refer to "CONSULT Operation Manual".

NOTE:

- Refer to EC-1255, "Removal and Installation" for replacement of ECM.
- During programming, maintain the following conditions:
- Ignition switch: ON
- Electric load: OFF
- Brake pedal: Not depressed
- Battery voltage: 12 13.5 V (Be sure to check the value of battery voltage by selecting "BATTERY VOLT" in "Data monitor" of CONSULT.)

>> GO TO 6.

5. REPLACE ECM

Replace ECM. Refer to EC-1255, "Removal and Installation".

ADDITIONAL SERVICE WHEN REPLACING ECM

< BASIC INSPECTION >

>> GO TO 16.

[MR EXCEPT FOR NISMO RS MODELS]

C BACIO INCI ECTION >	
>> GO TO 6.	Δ
6.WRITE ECM DATA	/ (
 With CONSULT Select "WRITING DATA FOR REPLC CPU" in "WORK SUPPORT" mode of "ENGINE" using CONSULT. Follow the instruction of CONSULT display. 	EC
NOTE:	0
The data saved by "SAVE DATA FOR CPU REPLC" is written to ECM.	
>> GO TO 7.	
7. PERFORM VIN REGISTRATION	D
Refer to EC-737. "Work Procedure".	_
>> GO TO 8.	Е
8. PERFORM INITIALIZATION OF NATS SYSTEM AND REGISTRATION OF ALL NATS IGNITION KEY IDS	
Refer to SEC-47, "ECM: Work Procedure".	F
>> GO TO 9.	G
9. PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING	
Refer to EC-738, "Work Procedure".	Н
>> GO TO 10.	
10. PERFORM THROTTLE VALVE CLOSED POSITION LEARNING	I
Refer to EC-739, "Work Procedure".	
>> GO TO 11.	J
11.PERFORM WASTEGATE VALVE CLOSED POSITION LEARNING	
Perform wastegate valve closed position learning. Refer to <u>EC-740</u> , "Work <u>Procedure"</u> .	K
>> GO TO 12. 12. PERFORM IDLE AIR VOLUME LEARNING	L
Refer to EC-743, "Work Procedure".	
Refer to Lo-145, Work Flocedure.	M
>> GO TO 13.	
13. PERFORM AIR FUEL RATIO INITIAL LEARNING	Ν
Perform air fuel ratio initial learning. Refer to EC-745, "Work Procedure".	
>> GO TO 14.	0
14. PERFORM G SENSOR CALIBRATION	
Refer to EC-748, "Work Procedure".	Р
CO TO 45	
>> GO TO 15. 15. PERFORM VALVE TIMING OFFSET DATA CLEAR	
Perform valve timing offset data clear. Refer to <u>EC-741</u> , "Work Procedure".	
i enomi vaive tilling onset data deat. Ivelet to <u>LO-741, Work Flocedule.</u> .	

Revision: 2014 October EC-735 2015 JUKE

ADDITIONAL SERVICE WHEN REPLACING ECM ON > [MR EXCEPT FOR NISMO RS MODELS]

< BASIC INSPECTION >

16. PERFORM VALVE TIMING OFFSET DATA WRITING

Perform valve timing offset data writing. Refer to EC-742, "Work Procedure".

>> END

VIN REGISTRATION

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

VIN REGISTRATION

Description INFOID:0000000011610834

VIN Registration is an operation to registering VIN in ECM. It must be performed each time ECM is replaced. **NOTE**:

Accurate VIN which is registered in ECM may be required for Inspection & Maintenance (I/M).

Work Procedure

1.CHECK VIN

Check the VIN of the vehicle and note it. Refer to GI-35, "Information About Identification or Model Code".

>> GO TO 2.

2. PERFORM VIN REGISTRATION

With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- 2. Select "VIN REGISTRATION" in "WORK SUPPORT" mode of "ENGINE".
- 3. Follow the instruction of CONSULT display.

>> END

Revision: 2014 October EC-737

-

Α

EC

С

D

Е

F

G

Н

Κ

L

M

Ν

0

Р

2015 JUKE

ACCELERATOR PEDAL RELEASED POSITION LEARNING

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

ACCELERATOR PEDAL RELEASED POSITION LEARNING

Description INFOID:0000000011610836

Accelerator Pedal Released Position Learning is a function of ECM to learn the fully released position of the accelerator pedal by monitoring the accelerator pedal position sensor output signal. It must be performed each time harness connector of accelerator pedal position sensor or ECM is disconnected.

Work Procedure

1.START

- 1. Make sure that accelerator pedal is fully released.
- 2. Turn ignition switch ON and wait at least 2 seconds.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON and wait at least 2 seconds.
- 5. Turn ignition switch OFF and wait at least 10 seconds.

>> END

THROTTLE VALVE CLOSED POSITION LEARNING

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

THROTTLE VALVE CLOSED POSITION LEARNING

Description INFOID:0000000011610838

Throttle Valve Closed Position Learning is a function of ECM to learn the fully closed position of the throttle valve by monitoring the throttle position sensor output signal. It must be performed each time the harness connector of the electric throttle control actuator or ECM is disconnected or electric throttle control actuator inside is cleaned.

Work Procedure INFOID:0000000011610839

1.START

(P) With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "CLSD THL POS LEARN" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Follow the instructions on the CONSULT display.
- Turn ignition switch OFF and wait at least 10 seconds. Check that throttle valve moves during the above 10 seconds by confirming the operating sound.

®Without CONSULT

Start the engine.

NOTE:

Engine coolant temperature is 25°C (77°F) or less before engine starts.

2. Warm up the engine.

NOTE:

Raise engine coolant temperature until it reaches 65°C (149°F) or more.

3. Turn ignition switch OFF and wait at least 10 seconds. Check that throttle valve moves during the above 10 seconds by confirming the operating sound.

>> END

EC-739 Revision: 2014 October 2015 JUKE

EC

Α

Е

D

F

Н

K

L

Ν

Р

WASTEGATE VALVE CLOSED POSITION LEARNING

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

WASTEGATE VALVE CLOSED POSITION LEARNING

Description INFOID:0000000011610840

Wastegate valve closed position learning is a function of ECM to learn the fully closed position of the wastegate valve by monitoring the wastegate valve position sensor output signal. It must be performed under any of the following conditions:

- Turbocharger assembly is replaced or removed.
- ECM is replaced.
- Engine assembly is replaced.

Work Procedure

1.START

- 1. Turn ignition switch ON and engine stopped.
- 2. On the CONSULT screen, select "ENGINE" >> "WORK SUPPORT" >> "WASTEGATE ACTUATOR POSI LEARN CLEAR".
- 3. Touch "Start".

>> END

VALVE TIMING OFFSET DATA CLEAR

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

VALVE TIMING OFFSET DATA CLEAR

Description INFOID:0000000011610842

Valve timing offset data clear is an operation to erase engine valve timing offset data stored in ECM. This operation must be performed after the following parts are replaced:

- Camshaft
- Timing chain
- Engine assembly
- ECM

Work Procedure

CAUTION:

After replacing the following parts, remove 2D code label affixed to throttle valve.

- Camshaft
- Timing chain
- Engine assembly

1. ERASE VALVE TIMING OFFSET DATA

- (P) With CONSULT
- Turn ignition switch ON.
- 2. Select "VALVE TIMING OFFSET DATA CLEAR" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 3. Touch "START" and erase valve timing offset data.

>> INSPECTION END

Revision: 2014 October EC-741 2015 JUKE

EC

Α

С

D

Е

_

F

G

Н

-

J

K

L

M

N

0

Р

VALVE TIMING OFFSET DATA WRITING

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

VALVE TIMING OFFSET DATA WRITING

Description INFOID:0000000011610844

Valve timing offset data writing is an operation to allow ECM to learn engine valve timing offset data. This operation must be performed after the following parts are replaced:

- ECM
- Engine assembly

Work Procedure

CAUTION:

- Perform the valve timing offset data clear operation beforehand. Refer to <u>EC-741</u>, "Work Procedure".
- If 2D code cannot be read, perform only the valve timing offset data clear operation.
- 1. WRITE VALVE TIMING OFFSET DATA

(P) With CONSULT

- Turn ignition switch ON.
- Select "VALVE TIMING OFFSET DATA WRITING" in "WORK SUPPORT" mode of "ENGINE" using CON-SULT.
- 3. Observe the instructions displayed on the CONSULT screen to write 2D code affixed to the throttle valve.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON.
- Check that DTC P100C is not displayed.

>> INSPECTION END

IDLE AIR VOLUME LEARNING

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

IDLE AIR VOLUME LEARNING

Description INFOID:0000000011610846

Idle Air Volume Learning is a function of ECM to learn the idle air volume that keeps each engine idle speed within the specific range. It must be performed under any of the following conditions:

- ECM is replaced.
- · Engine assembly is replaced.
- Electric throttle control actuator is replaced or removed.
- Turbocharger assembly is replaced or removed.
- Idle speed or ignition timing is out of specification.

Work Procedure

1.PRECONDITIONING

Make sure that all of the following conditions are satisfied.

Learning will be cancelled if any of the following conditions are missed for even a moment.

- Battery voltage: More than 12.5 V (At idle)
- Engine coolant temperature: 70 100°C (158 212°F)
- Selector lever: P or N (CVT), Neutral (M/T)
- · Electric load switch: OFF

(Air conditioner, headlamp, rear window defogger)

On vehicles equipped with daytime running light systems, set lighting switch to the 1st position to light only small lamps.

- Steering wheel: Neutral (Straight-ahead position)
- Vehicle speed: Stopped
- Transmission: Warmed-up
- CVT models
- With CONSULT: Drive vehicle until "ATF TENP SEN" in "DATA MONITOR" mode of "CVT" system indicates less than 0.9 V.
- Without CONSULT: Drive vehicle for 10 minutes.
- M/T models
- Drive vehicle for 10 minutes.

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2.IDLE AIR VOLUME LEARNING

With CONSULT

- Perform Accelerator Pedal Released Position Learning. Refer to <u>EC-738</u>, "Work Procedure".
- Perform Throttle Valve Closed Position Learning. Refer to EC-739, "Work Procedure".
- Start engine and warm it up to normal operating temperature.
- Select "IDLE AIR VOL LEARN" in "WORK SUPPORT" mode of "ENGINE".
- Touch "START" and wait 20 seconds.

Is "CMPLT" displayed on CONSULT screen?

YES >> GO TO 4.

NO >> GO TO 5.

$oldsymbol{3}.$ IDLE AIR VOLUME LEARNING

NOTE:

- It is better to count the time accurately with a clock.
- It is impossible to switch the diagnostic mode when an accelerator pedal position sensor circuit has a malfunction.
- Perform Accelerator Pedal Released Position Learning. Refer to <u>EC-738</u>. "Work Procedure".
- Perform Throttle Valve Closed Position Learning. Refer to EC-739, "Work Procedure".
- 3. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Confirm that accelerator pedal is fully released, turn ignition switch ON and wait 3 seconds.

EC

Α

INFOID:0000000011610847

F

Н

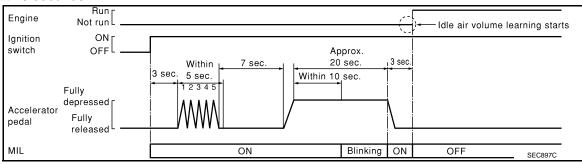
N

IDLE AIR VOLUME LEARNING

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

- 6. Repeat the following procedure quickly five times within 5 seconds.
- Fully depress the accelerator pedal.
- Fully release the accelerator pedal.
- Wait 7 seconds, fully depress the accelerator pedal and keep it for approx. 20 seconds until the MIL stops blinking and turned ON.
- 8. Fully release the accelerator pedal within 3 seconds after the MIL turned ON.
- 9. Start engine and let it idle.
- 10. Wait 20 seconds.



>> GO TO 4

4. CHECK IDLE SPEED AND IGNITION TIMING

Rev up the engine two or three times and make sure that idle speed and ignition timing are within the specifications. For specification, refer to <u>EC-1257</u>, "Idle Speed" and <u>EC-1257</u>, "Ignition Timing".

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check the following

- Check that throttle valve is fully closed.
- Check PCV valve operation.
- Check that downstream of throttle valve is free from air leakage.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace malfunctioning part.

6. DETECT MALFUNCTIONING PART

Engine component parts and their installation condition are questionable. Check and eliminate the cause of the incident.

It is useful to perform "TROUBLE DIAGNOSIS - SPECIFICATION VALUE". Refer to <u>EC-770</u>, "<u>Description</u>". If any of the following conditions occur after the engine has started, eliminate the cause of the incident and

perform Idle Air Volume Learning all over again:

- Engine stalls.
- · Erroneous idle.

>> INSPECTION END

AIR FUEL RATIO INITIAL LEARNING

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

AIR FUEL RATIO INITIAL LEARNING

Description INFOID:0000000011610848

Air fuel ratio initial learning of ECM to learn the air fuel ratio that keeps each engine idle speed within the specific range. It must be performed under any of the following conditions:

- When ECM is replaced²
- When engine assembly is replaced^ˆ
- When electric throttle control actuator is replaced
- When mass air flow sensor is replaced
- · When fuel injector is replaced

CAUTION:

*: Must be performed "IDLE AIR VOLUME LEARNING" when electric throttle control actuator or ECM is replaced. Refer to EC-743, "Work Procedure".

Work Procedure INFOID:0000000011610849

1.PRECONDITIONING

Make sure that all of the following conditions are satisfied.

Learning will be cancelled if any of the following conditions are missed for even a moment.

- Battery temperature: More than 5°C (41°F)
- Engine coolant temperature: More than 70°C (158°F)
- Shift lever: P or N
- Electric load switch: OFF

(Air conditioner, headlamp, rear window defogger)

- Vehicle speed: Stopped
- Transmission: Warmed-up
- · Drive vehicle for 10 minutes.

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2.AIR FUEL RATIO INITIAL LEARNING

(P) With CONSULT

- 1. Perform "ACCELERATOR PEDAL RELEASED POSITION LEARNING". Refer to EC-738, "Work Procedure".
- Perform "THROTTLE VALVE CLOSED POSITION LEARNING". Refer to EC-739, "Work Procedure".
- Start engine and warm it up to normal operating temperature.
- Select "A/F INITIAL LEARNING" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Touch "START" and wait 20 seconds.

"CMPLT" displayed on CONSULT screen?

YES >> INSPECTION END

NO >> GO TO 4.

3. AIR FUEL RATIO INITIAL LEARNING

NOTE:

- It is better to count the time accurately with a clock.
- It is impossible to switch the diagnostic mode when an accelerator pedal position sensor circuit has a malfunction.
- Perform "ACCELERATOR PEDAL RELEASED POSITION LEARNING". Refer to EC-739, "Work Procedure".
- Perform "THROTTLE VALVE CLOSED POSITION LEARNING". Refer to EC-739. "Work Procedure".
- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Confirm that accelerator pedal is fully released, turn ignition switch ON and wait 3 seconds.
- Repeat the following procedure quickly five times within 5 seconds.
- Fully depress the accelerator pedal.
- Fully release the accelerator pedal.

EC-745 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

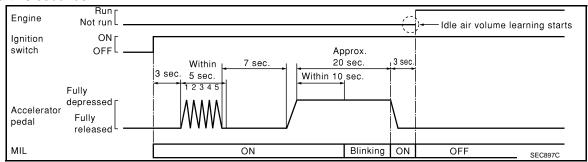
Ν

AIR FUEL RATIO INITIAL LEARNING

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

- 7. Wait 7 seconds, fully depress the accelerator pedal and keep it for approx. 20 seconds until the MIL stops blinking and turned ON.
- 8. Fully release the accelerator pedal within 3 seconds after the MIL turned ON.
- 9. Start engine and let it idle.
- 10. Wait 20 seconds.



>> INSPECTION END

4. DETECT MALFUNCTIONING PART

Engine component parts and their installation condition are questionable. Check and eliminate the cause of the incident.

It is useful to perform "TROUBLE DIAGNOSIS - SPECIFICATION VALUE". Refer to <u>EC-770</u>. "<u>Description</u>". If any of the following conditions occur after the engine has started, eliminate the cause of the incident and perform "AIR FUEL RATIO INITIAL LEARNING" all over again:

- Engine stalls
- Erroneous idle

>> INSPECTION END

MIXTURE RATIO SELF-LEARNING VALUE CLEAR

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

MIXTURE RATIO SELF-LEARNING VALUE CLEAR

Description INFOID:0000000011610850

This describes how to erase the mixture ratio self-learning value. For the actual procedure, follow the instructions in "Diagnosis Procedure".

INFOID:0000000011610851

Work Procedure

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Select "SELF-LEARNING CONT" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Clear mixture ratio self-learning value by touching "CLEAR".

@With GST

1.START

- . Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF.
- 3. Disconnect mass air flow sensor harness connector.
- 4. Restart engine and let it idle for at least 5 seconds.
- 5. Stop engine and reconnect mass air flow sensor harness connector.
- 6. Select Service \$03 with GST. Make sure DTC P0102 is detected.
- 7. Select Service \$04 with GST to erase the DTC P0102.

>> END

Revision: 2014 October EC-747 2015 JUKE

EC

Α

D

Е

F

G

Н

1

K

L

M

Ν

U

Р

G SENSOR CALIBRATION

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

G SENSOR CALIBRATION

Description INFOID:0000000011610852

ECM stores calibration data (inherent characteristic value) of G sensor to provide accurate control. Therefore, it is required to perform calibration of G sensor after the following work is performed.

- · Removal/installation or replacement of G sensor
- Replacement of ECM

Work Procedure

1. PREPARATION BEFORE CALIBRATION PROCEDURE

- 1. Park the vehicle on a level surface.
- 2. Adjust air pressure of all tires to the specified pressure. WT-43, "Tire Air Pressure".

>> GO TO 2.

2.PERFORM CALIBRATION

(P)With CONSULT

1. Turn ignition switch ON.

CAUTION:

Never start engine.

- 2. Select "Work Support" mode in "ENGINE.
- Select "G SENSOR CALIBRATION".
- 4. Touch "Start".

CAUTION:

Never swing the vehicle during "G sensor calibration".

Is "COMPLETED" displayed?

YES >> END

NO >> Perform steps 1 and 2 again.

CUMULATIVE BATTERY DISCHARGE CURRENT CLEAR

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

CUMULATIVE BATTERY DISCHARGE CURRENT CLEAR

Description INFOID:0000000011610856

Cumulative Battery Discharge Current Clear is a function of ECM to erase the cumulative battery discharge current. It must be performed when battery is replaced.

INFOID:0000000011610857

Work Procedure

1. ERASE CUMULATIVE BATTERY DISCHARGE CURRENT

With CONSULT

1. Turn ignition s

- Turn ignition switch ON.
- Select "CML B/DCHRG CRNT CLEAR" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Touch "CLEAR" and erase cumulative battery discharge current.

>> INSPECTION END

D

C

Α

EC

Е

F

Н

K

M

Ν

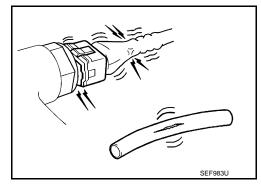
Р

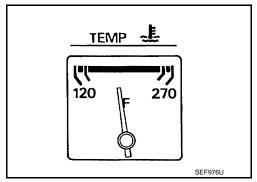
BASIC INSPECTION

Work Procedure

1.INSPECTION START

- Check service records for any recent repairs that may indicate a related malfunction, or a current need for scheduled maintenance.
- 2. Open engine hood and check the following:
- Harness connectors for improper connections
- Wiring harness for improper connections, pinches and cut
- Vacuum hoses for splits, kinks and improper connections
- Hoses and ducts for leaks
- Air cleaner clogging
- Gasket
- 3. Confirm that electrical or mechanical loads are not applied.
- Headlamp switch is OFF.
- Air conditioner switch is OFF.
- Rear window defogger switch is OFF.
- Steering wheel is in the straight-ahead position, etc.
- Start engine and warm it up until engine coolant temperature indicator points the middle of gauge. Ensure engine stays below 1,000 rpm.

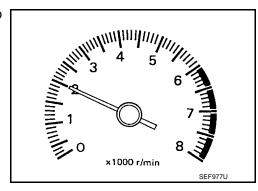




- 5. Run engine at about 2,000 rpm for about 2 minutes under no load.
- 6. Make sure that no DTC is displayed with CONSULT or GST.

Is any DTC detected?

YES >> GO TO 2. NO >> GO TO 3.



2. REPAIR OR REPLACE

Repair or replace components as necessary according to corresponding Diagnostic Procedure.

>> GO TO 3.

3. CHECK TARGET IDLE SPEED

1. Run engine at about 2,000 rpm for about 2 minutes under no load.

BASIC INSPECTION

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

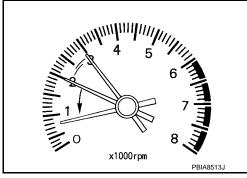
Rev engine (2,000 to 3,000 rpm) two or three times under no load, then run engine at idle speed for about 1 minute.

Check idle speed.

For procedure, refer to EC-1249, "Inspection". For specification, refer to EC-1257, "Idle Speed".

Is the inspection result normal?

YES >> GO TO 10. NO >> GO TO 4.



f 4.PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

Stop engine.

Perform EC-738, "Work Procedure".

>> GO TO 5.

5. PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Perform EC-739, "Work Procedure".

>> GO TO 6.

O.PERFORM IDLE AIR VOLUME LEARNING

Perform EC-743, "Work Procedure".

Is Idle Air Volume Learning carried out successfully?

YES >> GO TO 7.

NO >> Follow the instruction of Idle Air Volume Learning. Then GO TO 4.

7. CHECK TARGET IDLE SPEED AGAIN

Start engine and warm it up to normal operating temperature.

2. Check idle speed.

For procedure, refer to EC-1249, "Inspection".

For specification, refer to EC-1257, "Idle Speed".

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 8.

8.DETECT MALFUNCTIONING PART

Check the Following.

- Check camshaft position sensor (PHASE) and circuit. Refer to EC-937, "DTC Logic".
- Check crankshaft position sensor (POS) and circuit. Refer to EC-934, "DTC Logic".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace. Then GO TO 4

9. CHECK ECM FUNCTION

- Substitute another known-good ECM to check ECM function. (ECM may be the cause of an incident, but this is a rare case.)
- Perform initialization of NATS system and registration of all NATS ignition key IDs. Refer to <u>SEC-47</u>. "ECM: Work Procedure".

>> GO TO 4.

10. CHECK IGNITION TIMING

Run engine at idle.

EC

Α

D

F

Ν

EC-751 Revision: 2014 October 2015 JUKE

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

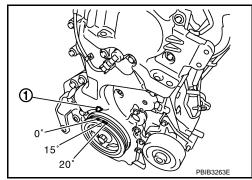
Check ignition timing with a timing light.
 For procedure, refer to <u>EC-1250</u>, "Inspection"
 For specification, refer to <u>EC-1257</u>, "Ignition Timing".

1 : Timing indicator

Is the inspection result normal?

YES >> INSPECTION END.

NO >> GO TO 11.



11. PERFORM ACCELERATOR PEDAL RELEASED POSITION LEARNING

- 1. Stop engine.
- 2. Perform EC-738, "Work Procedure".

>> GO TO 12.

12. PERFORM THROTTLE VALVE CLOSED POSITION LEARNING

Perform EC-739, "Work Procedure".

>> GO TO 13.

13. PERFORM IDLE AIR VOLUME LEARNING

Perform EC-743, "Work Procedure".

Is Idle Air Volume Learning carried out successfully?

YES >> GO TO 14.

NO >> Follow the instruction of Idle Air Volume Learning. Then GO TO 4.

14. CHECK TARGET IDLE SPEED AGAIN

- 1. Start engine and warm it up to normal operating temperature.
- 2. Check idle speed.

For procedure, refer to EC-1249, "Inspection".

For specification, refer to EC-1257, "Idle Speed".

Is the inspection result normal?

YES >> GO TO 15.

NO >> GO TO 17.

15. CHECK IGNITION TIMING AGAIN

- 1. Run engine at idle.
- Check ignition timing with a timing light.

For procedure, refer to EC-1250, "Inspection".

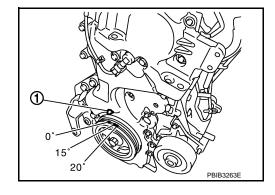
For specification, refer to EC-1257, "Ignition Timing".

1 : Timing indicator

Is the inspection result normal?

YES >> INSPECTION END.

NO >> GO TO 16.



16. CHECK TIMING CHAIN INSTALLATION

Check timing chain installation. Refer to EM-247, "Exploded View".

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair the timing chain installation. Then GO TO 4.

BASIC INSPECTION

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

17. DETECT MALFUNCTIONING PART

Check the following.

- Check camshaft position sensor (PHASE) and circuit. Refer to EC-937, "DTC Logic".
- Check crankshaft position sensor (POS) and circuit. Refer to EC-934, "DTC Logic".

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace. Then GO TO 4

18. CHECK ECM FUNCTION

- 1. Substitute another known-good ECM to check ECM function. (ECM may be the cause of an incident, but this is a rare case.)
- 2. Perform initialization of NATS system and registration of all NATS ignition key IDs. Refer to <u>SEC-47.</u> "ECM: Work Procedure".

>> GO TO 4.

EC

Α

С

D

Е

F

G

Н

Κ

L

IVI

Ν

0

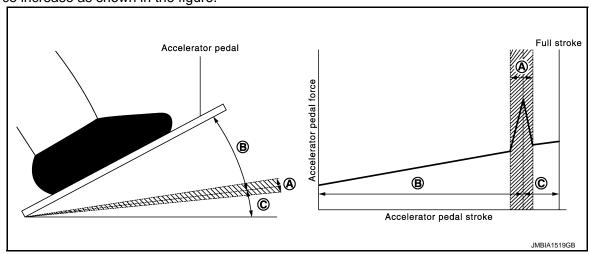
Р

ACCELERATOR PEDAL

Work Procedure

1.PERFORM ACCELERATOR PEDAL FORCE-I

- 1. Turn ignition switch OFF.
- 2. Depress the accelerator pedal and check if there is a specific point (A) in the pedal stroke where the pedal force increase as shown in the figure.



Is the inspection result normal?

YES-1 >> (P) With CONSULT: GO TO 2.

YES-2 >> Without CONSULT:GO TO 3.

NO >> Perform Accelerator Pedal Released Position Learning. Refer to EC-738, "Work Procedure".

2.perform accelerator pedal force-ii

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "KICKDOWN POS" in "DATA MONITOR" mode using CONSULT.
- 3. Check "KICKDOWN POS" indication under the following condition.

Monitor item	Condition	Indication
KICKDOWN POS	Depressing range of the accelerator pedal: Within (B) as indicated in the figure	OFF
RICKDOWN FOS	Depressing range of the accelerator pedal: Within (C) as indicated in the figure	ON

Is the inspection result normal?

YES >> INSPECTION END

NO >> Perform Accelerator Pedal Released Position Learning. Refer to EC-738, "Work Procedure".

3. PERFORM ACCELERATOR PEDAL FORCE-III

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector and ground under the following conditions.

	ECM			V 16
Connector	+	_	Condition	Voltage (Approx.)
Connector	Terminal			(11 - 7
E19	150 (APP sensor 1)	151	Depressing range of the accelerator pedal:	3.9 - 4.7 V
	143 (APP sensor 2)	144	Within (C) as indicated in the figure	1.95 - 2.4 V

ACCELERATOR PEDAL

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Perform Accelerator Pedal Released Position Learning. Refer to EC-738, "Work Procedure".

Α

EC

С

D

Е

F

G

Н

K

L

M

Ν

0

Р

FUEL PRESSURE

Work Procedure

FUEL PRESSURE RELEASE

1. FUEL PRESSURE RELEASE

(P)With CONSULT

- 1. Turn ignition switch ON.
- 2. Perform "FUEL PRESSURE RELEASE" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- Start engine.
- 4. After engine stalls, crank it two or three times to release all fuel pressure.
- 5. Turn ignition switch OFF.

⋈Without CONSULT

- 1. Remove fuel pump fuse located in IPDM E/R.
- 2. Start engine.
- 3. After engine stalls, crank it two or three times to release all fuel pressure.
- Turn ignition switch OFF.
- 5. Reinstall fuel pump fuse after servicing fuel system.

>> END

FUEL PRESSURE CHECK

CAUTION:

- Before disconnecting fuel line, release fuel pressure from fuel line to eliminate danger.
- The fuel hose connection method used when taking fuel pressure check must not be used for other purposes.
- Be careful not to scratch or put debris around connection area when servicing, so that the quick connector maintains sealability with O-rings inside.
- Do not perform fuel pressure check with electrical systems operating (i.e. lights, rear defogger, A/C, etc.) Fuel pressure gauge may indicate false readings due to varying engine load and changes in manifold vacuum.

NOTE:

Prepare pans or saucers under the disconnected fuel line because the fuel may spill out. The fuel pressure cannot be completely released because F15 models do not have fuel return system.

1.FUEL PRESSURE CHECK

- Release fuel pressure to zero.
- Prepare fuel hose for fuel pressure check (B) and fuel tube adapter [SST: KV10120000] (D), then connect fuel pressure gauge (A).

: To quick connector

: To high pressure fuel pump

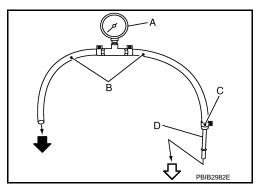
C : Clamp

CAUTION:

- Use suitable fuel hose for fuel pressure check (genuine NISSAN fuel hose without quick connector).
- To avoid unnecessary force or tension to hose, use moderately long fuel hose for fuel pressure check.
- Do not use the fuel hose for checking fuel pressure with damage or cracks on it.
- Use Pressure Gauge to check fuel pressure.
- 3. Remove fuel hose.

CAUTION:

Do not twist or kink fuel hose because it is plastic hose.



FUEL PRESSURE

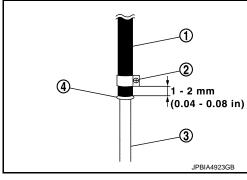
< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

4. Connect fuel hose for fuel pressure check (1) to high pressure fuel pump (3) with clamp (2) as shown in the figure.

CAUTION:

- Wipe off oil or dirt from hose insertion part using cloth moistened with gasoline.
- Apply proper amount of gasoline between top of the high pressure fuel pump (3) and spool (4).
- Insert fuel hose for fuel pressure check until it touches the spool on high pressure fuel pump.
- Use NISSAN genuine hose clamp (part number: 16439 N4710 or 16439 40U00).
- · When reconnecting fuel line, always use new clamps.
- · Use a torque driver to tighten clamps.



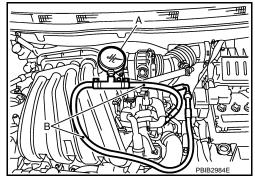
Tightening torque:

1 - 1.5 N·m (0.1 - 0.15 kg-m, 9 - 13 in-lb)

- Install hose clamp to the position within 1 2 mm (0.04 0.08 in).
- Make sure that clamp screw does not contact adjacent parts.
- After connecting fuel hose for fuel pressure check, pull the hose with a force of approximately 98
 N (10 kg, 22 lb) to confirm high pressure fuel pump does not come off.
- 5. Connect fuel tube adapter to quick connector.
 - A :Fuel pressure gauge
 - B :Fuel hose for fuel pressure check
- 6. Turn ignition switch ON and check for fuel leakage.
- 7. Start engine and check for fuel leakage.
- 8. Read the indication of fuel pressure gauge.

CAUTION:

- Do not perform fuel pressure check with system operating. Fuel pressure gauge may indicate false readings.
- During fuel pressure check, confirm for fuel leakage from fuel connection every 3 minutes.



At idling

: Approximately 500 kPa (5.0 bar, 5.1 kg/cm², 73 psi)

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. CHECK FUEL HOSES

Check the following.

- Fuel hoses for clogging
- Fuel filter for clogging
- Low pressure fuel pump
- Fuel pressure regulator for clogging

Is the inspection result normal?

YES >> Replace fuel pressure regulator.

NO >> Repair or replace error-detected parts.

D

Α

EC

Е

_

F

Н

ı

L

K

М

N

0

HOW TO SET SRT CODE

Description

OUTLINE

In order to set all SRTs, the self-diagnoses as in the "SRT ITEM" table must have been performed at least once. Each diagnosis may require actual driving for a long period of time under various conditions.

SRT ITEM

The table below shows required self-diagnostic items to set the SRT to "CMPLT".

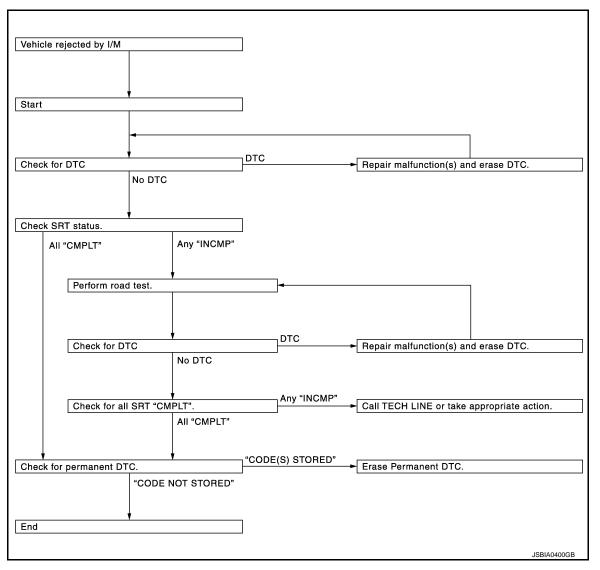
SRT item*1 (CONSULT indication)	Performance Priority* ²	Required self-diagnostic items to set the SRT to "CMPLT"	Corresponding DTC No.
CATALYST	1	Three way catalyst function	P0420
EVAP SYSTEM	1	EVAP control system purge flow monitoring	P0441
EVAP SYSTEM	1	EVAP control system	P0443, P0456
HO2S	1	Air fuel ratio (A/F) sensor 1	P0130, P014C, P014D, P015A, P015B
	1	Heated oxygen sensor 2	P0137
	1	Heated oxygen sensor 2	P0138
	1	Heated oxygen sensor 2	P0139
EGR/VVT SYSTEM	2	Intake value timing control function	P0011

^{*1:} Though displayed on the CONSULT screen, "HO2S HTR" is not SRT item.

SRT SERVICE PROCEDURE

If a vehicle has failed the state emissions inspection due to one or more SRT items indicating "INCMP", review the flowchart diagnostic sequence, referring to the following flowchart.

^{*2:} If completion of several SRTs is required, perform driving patterns (DTC confirmation procedure), one by one based on the priority for models with CONSULT.



SRT Set Driving Pattern

INFOID:0000000011610862

CAUTION:

Ν

K

Α

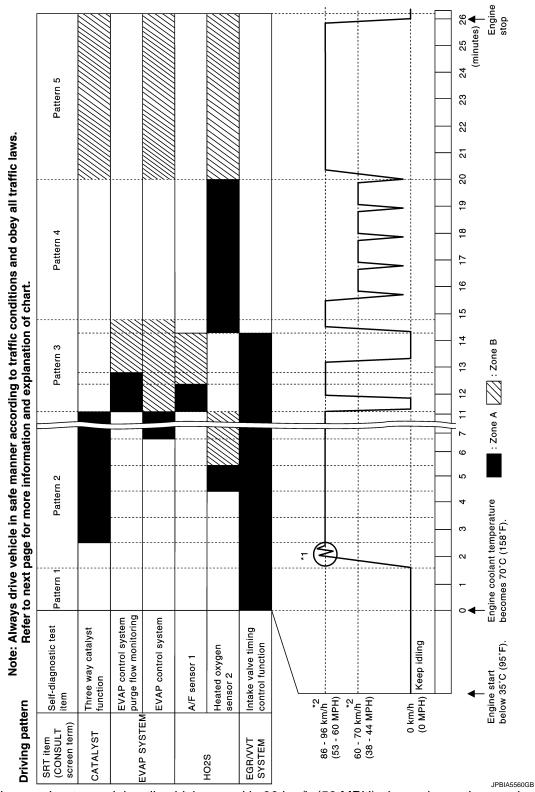
EC

D

Е

Ρ

Always drive the vehicle in safe manner according to traffic conditions and obey all traffic laws.



^{*1:} Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH), then release the accelerator pedal and keep it released for more than 10 seconds. Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH) again.

^{*2:} Checking the vehicle speed with GST is advised.

[•] The time required for each diagnosis varies with road surface conditions, weather, altitude, individual driving habits, etc.

^{• &}quot;Zone A" is the fastest time where required for the diagnosis under normal conditions*. If the diagnosis is not completed within "Zone A", the diagnosis can still be performed within "Zone B".

HOW TO SET SRT CODE

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

C BASIC INSPECTION >	[= =
*: Normal conditions - Sea level - Flat road - Ambient air temperature: 20 – 30°C (68 – 86°F)	A
NOTE:	
Diagnosis is performed as quickly as possible under normal of diagnosis may also be performed. [For example: ambient air tem	
Work Procedure	INFOID:000000011610863
1.CHECK DTC	
Check DTC.	D
Is any DTC detected?	
YES >> Repair malfunction(s) and erase DTC. Refer to EC-6 NO >> GO TO 2.	94, "DTC Index". E
2.CHECK SRT STATUS	
	f "ENGINE" using CONSULT.
Perform "SRT status" mode with EC-655, "On Board Diagnosis F	
With GST Select Service \$01 with GST.	G
Is SRT code(s) set?	Н
YES >> GO TO 11. NO-1 >> With CONSULT: GO TO 3. NO-2 >> Without CONSULT: GO TO 4.	"
3.DTC CONFIRMATION PROCEDURE	I
 Select "SRT WORK SUPPORT" in "DTC & SRT CONFIRMA" For SRT(s) that is not set, perform the corresponding "DTC of the "Performance Priority" in the "SRT ITEM" table. Refer to 3. Check DTC. 	CONFIRMATION PROCEDURE" according to
Is any DTC detected?	
YES >> Repair malfunction(s) and erase DTC. Refer to EC-6 NO >> GO TO 10.	94, "DTC Index".
4.PERFORM ROAD TEST	1
• Check the "Performance Priority" in the "SRT ITEM" table. Refe	
 Perform the most efficient SRT set driving pattern to set the SR ing Pettorn" 	RT properly. Refer to <u>EC-759, "SRT Set Driv-</u>
ing Pattern". In order to set all SRTs, the SRT set driving pattern must be pe	rformed at least once.
>> GO TO 5.	N
5.PATTERN 1	
 Check the vehicle condition; Engine coolant temperature is -10 to 35°C (14 to 95°F). Fuel tank temperature is more than 0°C (32°F). Start the engine. 	0
3. Keep engine idling until the engine coolant temperature is grNOTE:	eater than 70°C (158°F)
ECM terminal voltage is follows;	
• Engine coolant temperature	
10 to 35°C (14 to 95°F): 3.0 - 4.3 V - 70°(158°F): Less than 1.4 V	

>> GO TO 6.

Revision: 2014 October EC-761 2015 JUKE

6. PATTERN 2

- 1. Drive the vehicle. And depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH), then release the accelerator pedal and keep it released for more than 10 seconds.
- Depress the accelerator pedal until vehicle speed is 90 km/h (56 MPH) again

NOTE:

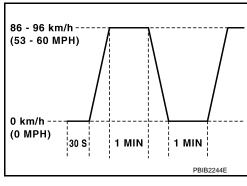
- Checking the vehicle speed with GST is advised.
- When steady-state driving is performed again even after it is interrupted, each diagnosis can be conducted. In this case, the time required for diagnosis may be extended.

>> GO TO 7.

7. PATTERN 3

- Operate vehicle following the driving pattern shown in the figure.
- Release the accelerator pedal during deceleration of vehicle speed from 90 km/h (56 MPH) to 0 km/h (0 MPH).

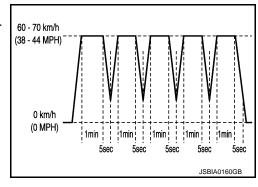
>> GO TO 8.



8. PATTERN 4

- Operate vehicle following the driving pattern shown in the figure.
- Drive the vehicle in a proper gear at 60 km/h (38 MPH) and maintain the speed.
- Release the accelerator pedal fully at least 5 seconds.
- Repeat the above two steps at least 5 times.

>> GO TO 9.



9. PATTERN 5

- The accelerator pedal must be held very steady during steady-state driving.
- If the accelerator pedal is moved, the test must be conducted again.

>> GO TO 10.

10. CHECK SRT STATUS

(P)With CONSULT

Select "SRT STATUS" in "DTC & SRT CONFIRMATION" mode of "ENGINE" using CONSULT.

NWITHOUT CONSULT

Perform "SRT status" mode with EC-655, "On Board Diagnosis Function".

With GST

Select Service \$01 with GST.

Is SRT(s) set?

YES >> GO TO 11.

NO >> Call TECH LINE or take appropriate action.

11. CHECK PERMANENT DTC

NOTE:

Permanent DTC cannot be checked with a tool other than CONSULT or GST.

HOW TO SET SRT CODE

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

(P)With CONSULT

Select "SRT STATUS" in "DTC & SRT CONFIRMATION" mode with CONSULT.

@With GST

Select Service \$0A with GST.

Is permanent DTC(s) detected?

YES >> Proceed to <u>EC-770</u>, "<u>Description</u>".

NO >> END

EC

Α

D

Е

F

G

Н

J

K

L

M

Ν

0

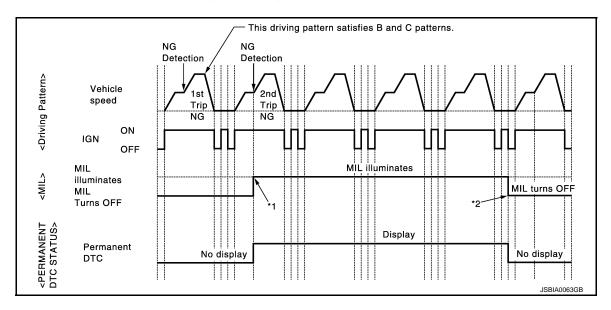
HOW TO ERASE PERMANENT DTC

Description INFOID:000000011734362

OUTLINE

When a DTC is stored in ECM

When a DTC is stored in ECM and MIL is ON, a permanent DTC is erased with MIL shutoff if the same malfunction is not detected after performing the driving pattern for MIL shutoff three times in a raw.



- *1: When the same malfunction is detected in two consecutive trips, MIL will illuminate.
- *2: MIL will turn off after vehicle is driven 3 times (driving pattern B) without any malfunctions.

When a DTC is not stored in ECM

The erasing method depends on a permanent DTC stored in ECM. Refer to the following table.

NOTE:

If the applicable permanent DTC includes multiple groups, perform the procedure of Group B first. If the permanent DTC is not erased, perform the procedure of Group A.

×: Applicable —: Not applicable

Crown*	Perform "DTC CONFIRMATION PROCE-	Driving	Reference	
Group	Group DURE" for applicable DTCs.		D	Reference
A	×	_	_	EC-765
В	_	×	×	EC-767

^{*:} For group, refer to EC-694, "DTC Index".

PERMANENT DTC ITEM

For permanent DTC items, MIL turns ON. Refer to EC-694, "DTC Index".

Α

EC

D

Е

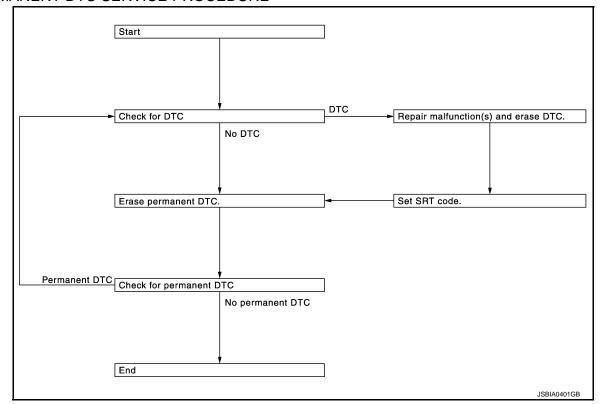
M

Ν

0

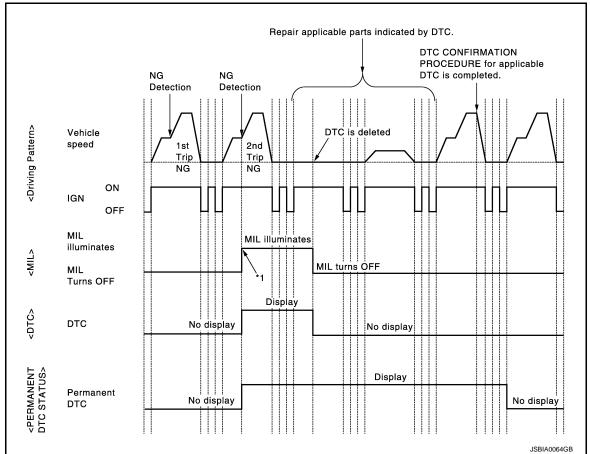
Р

PERMANENT DTC SERVICE PROCEDURE



Work Procedure (Group A)

INFOID:0000000011734363



HOW TO ERASE PERMANENT DTC

*1: When the same malfunction is detected in two consecutive trips, MIL will illuminate.

1. CHECK DTC

Check DTC.

Is any DTC detected?

YES >> Repair malfunction(s) and erase DTC. Refer to <u>EC-655</u>, "On Board Diagnosis Function", <u>EC-656</u>, "<u>CONSULT Function</u>".

NO >> GO TO 2.

2. CHECK PERMANENT DTC

(P)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select "PERMANENT DTC STATUS" mode with CONSULT.

With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- 5. Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 3.

NO >> END

3. PERFORM DTC CONFIRMATION PROCEDURE

Perform "DTC CONFIRMATION PROCEDURE" for DTCs which are the same as permanent DTCs stored in ECM. Refer to EC-694, "DTC Index".

>> GO TO 4.

4. CHECK PERMANENT DTC

(P)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 5. Select "PERMANENT DTC STATUS" mode with CONSULT.

With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select Service \$0A with GST.

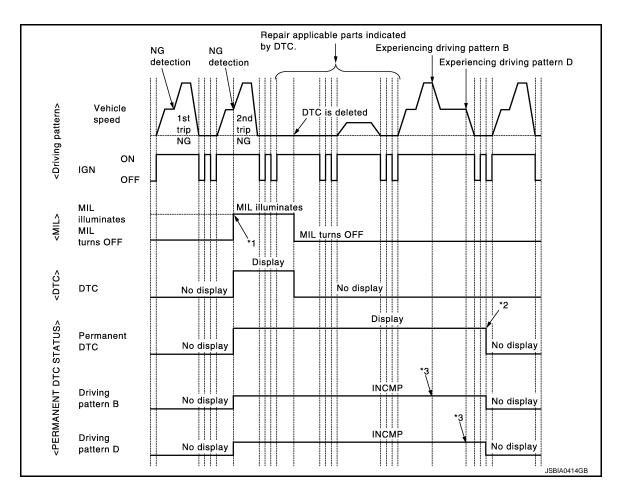
Is any permanent DTC detected?

YES >> GO TO 1.

NO >> END

Work Procedure (Group B)

INFOID:0000000011734364



- *1: When the same malfunction is detected in two consecutive trips, MIL will illuminate.
- *2: After experiencing driving pattern B and D, permanent DTC is erased.
- Indication does not change unless the ignition switch is turned from ON to OFF twice even after experiencing driving pattern B or D.

NOTE:

Drive the vehicle according to only driving patterns indicating "INCMP" in driving patterns B and D on the "PERMANENT DTC STATUS" screen.

1.CHECK DTC

Check DTC.

Is any DTC detected?

YES >> Repair malfunction(s) and erase DTC. Refer to <u>EC-655, "On Board Diagnosis Function", EC-656, "CONSULT Function".</u>

NO >> GO TO 2.

2.CHECK PERMANENT DTC

(P)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select "PERMANENT DTC STATUS" mode with CONSULT.

⊕With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

EC

Α

D

F

F

G

Н

K

L

M

N

0

HOW TO ERASE PERMANENT DTC

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

- 4. Turn ignition switch ON.
- Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 3. NO >> END

3.drive driving pattern b

CAUTION:

- · Always drive at a safe speed.
- · Never erase self-diagnosis results.
- If self-diagnosis results are erased during the trip of driving pattern B or D, the counter of driving pattern B and D is reset.

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Use "PERMANENT DTC WORK SUPPORT" mode with CONSULT to drive the vehicle according to driving pattern B. Refer to <u>EC-656</u>, "CONSULT Function", <u>EC-652</u>, "DIAGNOSIS <u>DESCRIPTION</u>: <u>Driving Pattern"</u>.

With GST

- 1. Start engine and warm it up to normal operating temperature.
- 2. Drive the vehicle according to driving pattern B. Refer to EC-652, "DIAGNOSIS DESCRIPTION: Driving Pattern".

>> GO TO 4.

4. CHECK PERMANENT DTC

(E)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Select "PERMANENT DTC STATUS" mode with CONSULT.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 5.

NO >> END

${f 5.}$ DRIVE DRIVING PATTERN D

CAUTION:

- Always drive at a safe speed.
- Never erase self-diagnosis results.
- If self-diagnosis results are erased during the trip of driving pattern B or D, the counter of driving pattern B and D is reset.

Drive the vehicle according to driving pattern D. Refer to <u>EC-652</u>, "<u>DIAGNOSIS DESCRIPTION</u>: <u>Driving Pattern</u>".

>> GO TO 6.

6. CHECK PERMANENT DTC

(E)With CONSULT

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.

HOW TO ERASE PERMANENT DTC

< BASIC INSPECTION >

[MR EXCEPT FOR NISMO RS MODELS]

5. Select "PERMANENT DTC STATUS" mode with CONSULT.

With GST

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Turn ignition switch ON.
- Select Service \$0A with GST.

Is any permanent DTC detected?

YES >> GO TO 1.

NO >> END

EC

Α

C

D

Е

F

G

Н

K

L

M

Ν

0

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

DTC/CIRCUIT DIAGNOSIS

TROUBLE DIAGNOSIS - SPECIFICATION VALUE

Description

The specification (SP) value indicates the tolerance of the value that is displayed in "SPEC" of "DATA MONITOR" mode of CONSULT during normal operation of the Engine Control System. When the value in "SPEC" of "DATA MONITOR" mode is within the SP value, the Engine Control System is confirmed OK. When the value in "SPEC" of "DATA MONITOR" mode is NOT within the SP value, the Engine Control System may have one or more malfunctions.

The SP value is used to detect malfunctions that may affect the Engine Control System, but will not light the MIL.

The SP value will be displayed for the following three items:

- B/FUEL SCHDL (The fuel injection pulse width programmed into ECM prior to any learned on board correction)
- A/F ALPHA-B1 (The mean value of air-fuel ratio feedback correction factor per cycle)
- MASS AIR FLOW SENSOR (Hz) (The signal frequency of the mass air flow sensor)

Component Function Check

INFOID:0000000011610865

1.START

Make sure that all of the following conditions are satisfied.

- Vehicle driven distance: More than 5,000 km (3,107 miles)
- Barometric pressure: 98.3 104.3 kPa (1.003 1.064 kg/cm², 14.25 15.12 psi)
- Atmospheric temperature: 20 30°C (68 86°F)
- Engine coolant temperature: 75 95°C (167 203°F)
- Transmission: Warmed-up
- CVT models: After the engine is warmed up to normal operating temperature, drive vehicle until "FLUID TEMP SE" (CVT fluid temperature sensor signal) indicates more than 60°C (140°F).
- M/T models: After the engine is warmed up to normal operating temperature, drive vehicle for 5 minutes.
- Electrical load: Not applied
- Rear window defogger switch, air conditioner switch, lighting switch are OFF. Steering wheel is straight ahead.
- · Engine speed: Idle

>> GO TO 2.

2.PERFORM "SPEC" OF "DATA MONITOR" MODE

(P)With CONSULT

NOTE:

Perform "SPEC" in "DATA MONITOR" mode in maximum scale display.

- 1. Perform EC-750, "Work Procedure".
- Select "B/FUEL SCHDL", "A/F ALPHA-B1" and "MASS AIR FLOW SENSOR (Hz)" in "SPEC" of "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Make sure that monitor items are within the SP value.

Is the inspection result normal?

YES >> END

NO >> Proceed to EC-771, "Diagnosis Procedure".

< DTC/CIRCUIT DIAGNOSIS >

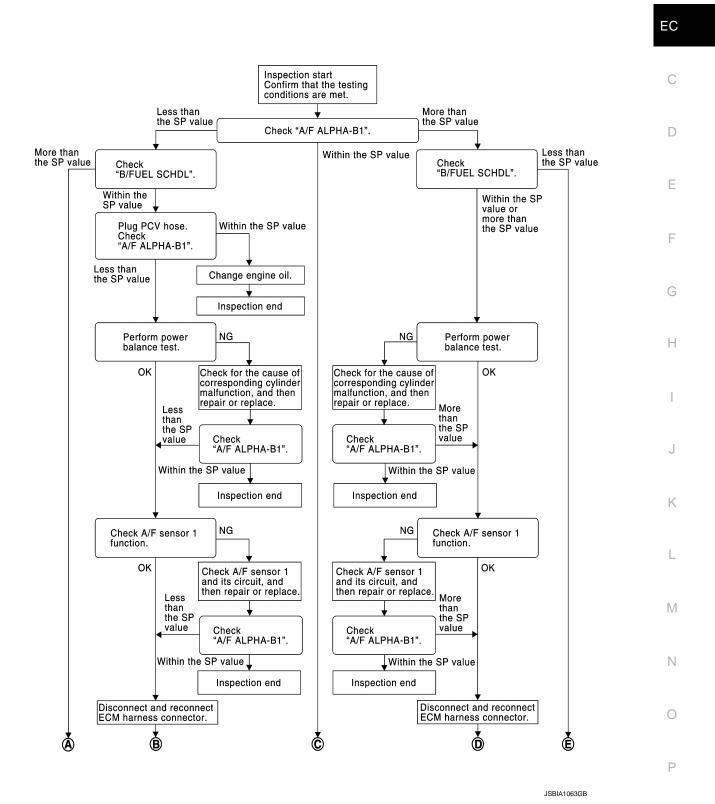
[MR EXCEPT FOR NISMO RS MODELS]

Diagnosis Procedure

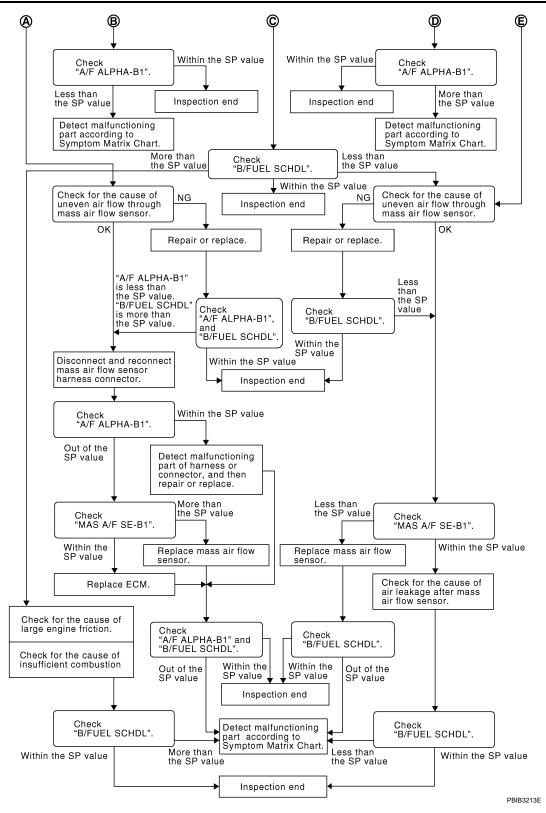
OVERALL SEQUENCE

INFOID:0000000011610866

Α



[MR EXCEPT FOR NISMO RS MODELS]



DETAILED PROCEDURE

1.CHECK "A/F ALPHA-B1"

(P)With CONSULT

- Start engine.
- Confirm that the testing conditions are met. Refer to <u>EC-770, "Component Function Check"</u>.
- 3. Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NOTE:

Check "A/F ALPHA-B1" for approximately 1 minute because it may fluctuate. It is NG if the indication is out of the SP value even a little.

Is the measurement value within the SP value?

YES >> GO TO 14.

NO-1 >> Less than the SP value: GO TO 2.

NO-2 >> More than the SP value: GO TO 3.

2.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 4.

NO >> More than the SP value: GO TO 16.

3.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 6.

NO-1 >> More than the SP value: GO TO 6.

NO-2 >> Less than the SP value: GO TO 22.

4.CHECK "A/F ALPHA-B1"

- 1. Stop the engine.
- 2. Disconnect PCV hose, and then plug it.
- 3. Start engine.
- 4. Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 5.

NO >> GO TO 6.

5. CHANGE ENGINE OIL

- Stop the engine.
- Change engine oil.

NOTE:

This symptom may occur when a large amount of gasoline is mixed with engine oil because of driving conditions (such as when engine oil temperature does not rise enough since a journey distance is too short during winter). The symptom will not be detected after changing engine oil or changing driving condition.

EC-773

>> INSPECTION END

6. PERFORM POWER BALANCE TEST

- 1. Perform "POWER BALANCE" in "ACTIVE TEST" mode.
- 2. Make sure that the each cylinder produces a momentary engine speed drop.

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 7.

7. DETECT MALFUNCTIONING PART

Check the following.

- 1. Ignition coil and its circuit (Refer to EC-1228, "Component Function Check".)
- 2. Fuel injector and its circuit (Refer to EC-1203, "Component Function Check".)
- 3. Intake air leakage

Revision: 2014 October

Low compression pressure (Refer to <u>EM-181</u>, "<u>Inspection"</u>.)

Is the inspection result normal?

203, "Component Function Check".)

181, "Inspection".)

e D E E F G H I J K L

M

Ν

2015 JUKE

EC

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> Replace fuel injector and then GO TO 8.

NO >> Repair or replace malfunctioning part and then GO TO 8.

8.CHECK "A/F ALPHA-B1"

- Start engine.
- Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> GO TO 9.

9.CHECK A/F SENSOR 1 FUNCTION

Perform all DTC CONFIRMATION PROCEDURE related with A/F sensor 1.

- For DTC P0130, refer to <u>EC-856, "DTC Logic"</u>.
 For DTC P0131, refer to <u>EC-860, "DTC Logic"</u>.
- For DTC P0132, refer to <u>EC-863, "DTC Logic"</u>.
- For DTC P2096 or P2097, refer to <u>EC-1132</u>, "DTC Logic".

Is any DTC detected?

YES >> GO TO 10.

NO >> GO TO 12.

10. CHECK A/F SENSOR 1 CIRCUIT

Perform DIAGNOSTIC PROCEDURE according to corresponding DTC.

>> GO TO 11.

11.CHECK "A/F ALPHA-B1"

- Start engine.
- Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> GO TO 12.

12. DISCONNECT AND RECONNECT ECM HARNESS CONNECTOR

- Stop the engine.
- Disconnect ECM harness connector.
- Check pin terminal and connector for damage, and then reconnect it.

>> GO TO 13.

13.CHECK "A/F ALPHA-B1"

- Start engine.
- Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Detect malfunctioning part according to EC-1241, "Symptom Table".

14.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

>> INSPECTION END

NO-1 >> More than the SP value: GO TO 15.

NO-2 >> Less than the SP value: GO TO 22.

15. DETECT MALFUNCTIONING PART

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Check for the cause of large engine friction. Refer to the following.
- Engine oil level is too high
- Engine oil viscosity
- Belt tension of power steering, alternator, A/C compressor, etc. is excessive
- Noise from engine
- Noise from transmission, etc.
- 2. Check for the cause of insufficient combustion. Refer to the following.
- Valve clearance malfunction
- Intake valve timing control function malfunction
- Camshaft sprocket installation malfunction, etc.

>> Repair or replace malfunctioning part, and then GO TO 27.

16. CHECK INTAKE SYSTEM

Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.

- Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- · Improper specification of intake air system

Is the inspection result normal?

YES >> GO TO 21.

NO >> Repair or replace malfunctioning part, and then GO TO 17.

 $17.\mathsf{CHECK}$ "A/F ALPHA-B1", AND "B/FUEL SCHDL"

Select "A/F ALPHA-B1" and "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that each indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> "B/FUEL SCHDL" is more, "A/F ALPHA-B1" is less than the SP value: GO TO 18.

$18. \mathsf{DISCONNECT}$ and reconnect mass air flow sensor harness connector

- Stop the engine.
- Disconnect mass air flow sensor harness connector.
- Check pin terminal and connector for damage and then reconnect it again.

>> GO TO 19.

19.CHECK "A/F ALPHA-B1"

- Start engine.
- 2. Select "A/F ALPHA-B1" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

>> Detect malfunctioning part of mass air flow sensor circuit and repair it. Refer to EC-828, "DTC YES Logic". Then GO TO 26.

NO >> GO TO 20.

20.CHECK "MASS AIR FLOW SENSOR (HZ)"

Select "MASS AIR FLOW SENSOR (Hz)" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 21.

NO >> More than the SP value: Replace mass air flow sensor, and then GO TO 26.

21.REPLACE ECM

- Replace ECM.
- Perform EC-734, "Work Procedure".

>> GO TO 26.

EC-775 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

M

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

22. CHECK INTAKE SYSTEM

Check for the cause of uneven air flow through mass air flow sensor. Refer to the following.

- · Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- · Improper specification of intake air system

Is the inspection result normal?

YES >> GO TO 24.

NO >> Repair or replace malfunctioning part, and then GO TO 23.

23. CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Less than the SP value: GO TO 24.

24.CHECK "MASS AIR FLOW SENSOR (HZ)"

Select "MASS AIR FLOW SENSOR (Hz)" in "SPEC" of "DATA MONITOR" mode, and make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> GO TO 25.

NO >> Less than the SP value: Replace mass air flow sensor, and then GO TO 27.

25. CHECK INTAKE SYSTEM

Check for the cause of air leak after the mass air flow sensor. Refer to the following.

- · Disconnection, looseness, and cracks in air duct
- Looseness of oil filler cap
- · Disconnection of oil level gauge
- Open stuck, breakage, hose disconnection, or cracks of PCV valve
- Disconnection or cracks of EVAP purge hose, open stuck of EVAP canister purge volume control solenoid valve
- · Malfunctioning seal of rocker cover gasket
- · Disconnection, looseness, or cracks of hoses, such as vacuum hose, connecting to intake air system parts
- Malfunctioning seal of intake air system, etc.

>> GO TO 27.

26. CHECK "A/F ALPHA-B1" AND "B/FUEL SCHDL"

Select "A/F ALPHA-B1" and "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and make sure that each indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Detect malfunctioning part according to EC-1241, "Symptom Table".

27.CHECK "B/FUEL SCHDL"

Select "B/FUEL SCHDL" in "SPEC" of "DATA MONITOR" mode, and then make sure that the indication is within the SP value.

Is the measurement value within the SP value?

YES >> INSPECTION END

NO >> Detect malfunctioning part according to EC-1241, "Symptom Table".

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000011610867

Α

EC

D

Е

F

K

Ν

Р

1. CHECK FUSE

Check that the following fuse is not fusing.

Location	Fuse No.	Capacity
IPDM E/R	#43	20 A
	#61	15 A

Is the fuse fusing?

YES >> Replace the fuse after repairing the applicable circuit.

NO >> GO TO 2.

2.CHECK GROUND CONNECTION

Turn ignition switch OFF.

2. Check ground connection E21 and E38. Refer to GI-47, "Circuit Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace ground connection.

3. CHECK ECM GROUND CIRCUIT

- 1. Disconnect ECM harness connectors.
- 2. Check the continuity between ECM harness connector and ground.

	+ CM	_	Continuity	
Connector	Terminal			
	9			
F23	10		Existed	
	50			
F24	60	Ground		
1 24	110			
	147			
E19	149			
	152			

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK ECM POWER SUPPLY (MAIN)-I

- 1. Reconnect ECM harness connector.
- 2. Turn ignition switch ON.
- 3. Check the voltage between ECM harness connector terminals.

	ECM		
Connector	+	-	Voltage
Connector	Terminal		
E19	145	152	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> GO TO 6.

5. CHECK ECM POWER SUPPLY (MAIN)-II

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Check the voltage between ECM harness connector terminals as per the following.

ECM				Maltana
Connector	+	_	Condition	Voltage (Approx.)
Connector	Terr	ninal		(11 -)
E19	145	152	After turning ignition switch OFF, battery voltage will exist for a few seconds	Drop to 0 V

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 7.

6. CHECK ECM POWER SUPPLY (MAIN) CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connectors.
- 3. Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+				
E	СМ	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E19	145	E14	35	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

7.CHECK ECM RELAY CONTROL SIGNAL

Check the voltage between ECM harness connector terminals as per the following.

ECM					Maltana	
Connector	+	+ Connector		Condition	Voltage (Approx.)	
Terminal		Connector	Terminal		() [
				Ignition switch ON	0 V	
F24	81	E19	152	Turn ignition switch OFF and wait at least 10 seconds.	Battery voltage	

Is the inspection result normal?

YES >> Check Intermittent Incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 8.

8. CHECK ECM RELAY CONTROL SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+				
E	CM	IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		
F24	81	E14	41	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

>> Replace IPDM E/R. Refer to PCS-36, "Removal and Installation".

NO >> Repair or replace error-detected parts.

9. CHECK IGNITION SWITCH SIGNAL

1. Turn ignition switch ON.

2. Check the voltage between ECM harness connector terminals.

ECM				V 16	
Connector	Connector + - Terminal		Condition	Voltage (Approx.)	
Connector					
E19	133	152	Ignition switch OFF	0 V	
	133 152		Ignition switch ON	Battery voltage	

Is the inspection result normal?

YES >> GO TO 11.

NO >> GO TO 10.

10.check ignition switch signal circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Disconnect IPDM E/R harness connector. 3.
- Check the continuity between ECM harness connector and IPDM E/R harness connector.

+				
E	CM	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
E19	133	E15	61	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

11. CHECK ECM POWER SUPPLY (BACK-UP)

Check the voltage between ECM harness connector terminals.

+			_	
ECM		ECM		Voltage
Connector	Terminal	Connector	Terminal	
F24	113	E19	152	Battery voltage

Is the inspection result normal?

YES >> Check Intermittent Incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 12.

12.CHECK ECM POWER SUPPLY (BACK-UP) CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.

EC-779 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Disconnect IPDM E/R harness connector.
- Check the continuity between ECM harness connector and IPDM E/R harness connector.

+			_	
ECM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F24	113	E14	42	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit. >> Repair or replace error-detected parts. YES

NO

U0101 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

U0101 CAN COMM CIRCUIT

Description INFOID:0000000011610878

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic INFOID:0000000011610879

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
U0101	LOST COMM (TCM) (Lost communication with TCM)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission-related diagnosis) with TCM for 2 seconds or more.	CAN communication line between TCM and ECM

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 3 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-781, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

Perform the trouble diagnosis for CAN communication system. Refer to LAN-17, "Trouble Diagnosis Flow Chart".

EC

Α

D

Е

INFOID:0000000011610880

K

N

U0122 VEHICLE DYNAMICS CONTROL MODULE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

U0122 VEHICLE DYNAMICS CONTROL MODULE

Description INFOID:000000011610881

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic INFOID:000000011610882

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
U0122	VDC MDL (Lost communication with vehi- cle dynamics control module)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission related diagnosis) with ABS actuator and electric unit (control unit) for 2 seconds or more.	CAN communication line between ECM and ABS actuator and electric unit (control unit) (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 3 seconds.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-782, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610883

Perform the trouble diagnosis for CAN communication system. Refer to <u>LAN-17</u>, "Trouble <u>Diagnosis Flow Chart"</u>.

U1000 CAN COMM CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

U1000 CAN COMM CIRCUIT

Description INFOID:0000000011610886

CAN (Controller Area Network) is a serial communication line for real time application. It is an on-vehicle multiplex communication line with high data communication speed and excellent error detection ability. Many electronic control units are equipped onto a vehicle, and each control unit shares information and links with other control units during operation (not independent). In CAN communication, control units are connected with 2 communication lines (CAN H line, CAN L line) allowing a high rate of information transmission with less wiring. Each control unit transmits/receives data but selectively reads required data only.

DTC Logic INFOID:0000000011610887

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
U1000	CAN COMM CIRCUIT (CAN communication line)	When ECM is not transmitting or receiving CAN communication signal of OBD (emission related diagnosis) for 2 seconds or more.	Harness or connectors (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 3 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-783, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

Perform the trouble diagnosis for CAN communication system. Refer to LAN-17, "Trouble Diagnosis Flow

Chart".

EC-783 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

INFOID:0000000011610888

K

N

P0011 IVT CONTROL

DTC Logic

DTC DETECTION LOGIC

NOTE

If DTC P0011 is displayed with DTC P0075, first perform the trouble diagnosis for <u>EC-1057</u>, "DTC <u>Logic"</u>.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0011	INT/V TIM CONT-B1 (Intake valve timing control performance)	There is a gap between angle of target and phase-control angle degree.	Crankshaft position sensor (POS) Camshaft position sensor (PHASE) Intake valve control solenoid valve Accumulation of debris to the signal pick-up portion of the camshaft Timing chain installation Foreign matter caught in the oil groove for intake valve timing control

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is between 10 V and 16 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

(P)With CONSULT

- Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- Maintain the following conditions for at least 6 consecutive seconds. Hold the accelerator pedal as steady as possible.

ENG SPEED	1,200 - 2,000 rpm
COOLAN TEMP/S	More than 60°C (140°F)
Selector lever	P or N position (CVT) Neutral position (M/T)

- 4. Stop vehicle with engine running and let engine idle for 10 seconds.
- 5. Check 1st trip DTC.

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-785, "Diagnosis Procedure".

NO >> GO TO 3.

3.perform dtc confirmation procedure-ii

(P)With CONSULT

1. Maintain the following conditions for at least 20 consecutive seconds.

P0011 IVT CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Ν

Р

			Λ
ENG SPEED	1,200 - 3,175 rpm (A constant rotation is maintained.)		Α
COOLAN TEMP/S	More than 60°C (140°F)		
Selector lever	D position (CVT) 1st or 2nd position (M/T)		EC
Driving location	Driving vehicle uphill (Increased engine load will help maintain the driving conditions required for this test.)		С
2. Check 1st trip With GST	e at a safe speed. DDTC. Jure "With CONSULT" above.		D
Is 1st trip DTC de YES >> Proce			Е
Diagnosis Pro	cedure	INFOID:0000000011610898	F
1.CHECK OIL P	RESSURE WARNING LAMP		G
nated. <u>Is oil pressure wa</u>	essure warning lamp and confirm it is not illung in the interior in the result of the second section is not illung in the engine oil level. Refer to LU-28, "Inspection of 2."		H
2.CHECK INTAK	E VALVE TIMING CONTROL SOLENOID VAL	VE	K
Check the intake	valve timing control solenoid valve. Refer to EC	-786, "Component Inspection".	
Is the inspection r			I
YES >> GO T NO >> Repla	O 3. ace intake valve timing control solenoid valve. R	efer to EM-247, "Exploded View".	_
3.CHECK CRAN	IKSHAFT POSITION SENSOR (POS)		M
	haft position sensor (POS). Refer to <u>EC-936,</u> "C	Component Inspection".	ıvl

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace crankshaft position sensor (POS). Refer to EM-281, "Exploded View".

4. CHECK CAMSHAFT POSITION SENSOR (PHASE)

Check the camshaft position sensor (PHASE). Refer to EC-939, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace camshaft position sensor (PHASE). Refer to EM-259, "Exploded View".

5. CHECK CAMSHAFT (INT)

Check the following.

P0011 IVT CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

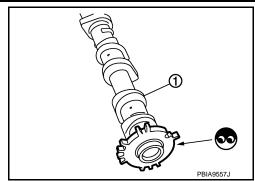
- · Accumulation of debris to the signal plate of camshaft (1) rear end
- · Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> GO TO 6.

NO

>> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to <u>EM-260</u>, "Removal and Installation".



6. CHECK TIMING CHAIN INSTALLATION

Check service records for any recent repairs that may cause timing chain misaligned.

Are there any service records that may cause timing chain misaligned?

YES >> Check timing chain installation. Refer to EM-248, "Removal and Installation".

NO >> GO TO 7.

7.CHECK LUBRICATION CIRCUIT

Refer to LU-28, "Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Clean lubrication line.

Component Inspection

INFOID:0000000011610899

1.check intake valve timing control solenoid valve-i

- 1. Turn ignition switch OFF.
- 2. Disconnect intake valve timing control solenoid valve harness connector.
- 3. Check resistance between intake valve timing control solenoid valve terminals as per the following.

Intake valve timing control solenoid valve		
+	_	Resistance
Terminal		
1	2	6.7 - 7.7 Ω [at 20°C (68°F)]
1	Ground	∞ Ω
2	Glound	(Continuity should not exist)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace intake valve timing control solenoid valve. Refer to EM-247, "Exploded View".

2.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-II

Remove intake valve timing control solenoid valve. Refer to <u>EM-247</u>. "Exploded View".

Provide 12 V DC between intake valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Make sure that the plunger moves as shown in the figure.

CAUTION:

Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in intake valve timing control solenoid valve.

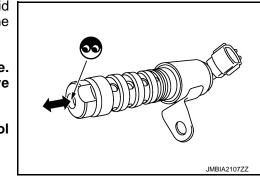
NOTE:

Always replace O-ring when intake valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace intake valve timing control solenoid valve. Refer to EM-247, "Exploded View".



P0014 EVT CONTROL

DTC Logic INFOID:0000000011610900

DTC DETECTION LOGIC

NOTE:

• If DTC P0014 is displayed with DTC P0078, first perform trouble diagnosis for DTC P0078. Refer to EC-801, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0014	EXH/V TIM CONT-B1 (Exhaust valve timing control performance)	There is a gap between angle of target and phase-control angle degree.	Crankshaft position sensor (POS) Camshaft position sensor (PHASE) Exhaust valve timing control position sensor Exhaust valve control solenoid valve Accumulation of debris to the signal pick-up portion of the camshaft Timing chain installation Foreign matter caught in the oil groove for exhaust valve timing control

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is between 10 V and 16 V at idle.

>> GO TO 2.

2 PERFORM DTC CONFIRMATION PROCEDURE-I

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to the normal operating temperature.
- Maintain the following conditions for at least 6 consecutive seconds. Hold the accelerator pedal as steady as possible.

ENG SPEED	1,200 - 2,000 rpm (A constant rotation is maintained.)
COOLAN TEMP/S	More than 60°C (140°F)
Selector lever	P or N position (CVT) Neutral position (M/T)

- Let engine idle for 10 seconds.
- Check 1st trip DTC.

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-788, "Diagnosis Procedure"

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

With CONSULT

EC-787 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

K

Ν

< DTC/CIRCUIT DIAGNOSIS >

Maintain the following conditions for at least 20 consecutive seconds.

ENG SPEED	1,200 - 3,175 rpm (A constant rotation is maintained.)
COOLAN TEMP/S	More than 60°C (140°F)
Selector lever	D position (CVT) 1st or 2nd position (M/T)
Driving location uphill	Driving vehicle uphill (Increased engine load will help maintain the driving conditions required for this test.)

CAUTION:

Always drive at a safe speed.

Check 1st trip DTC.

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-788, "Diagnosis Procedure"

>> INSPECTION END NO

Diagnosis Procedure

INFOID:0000000011610901

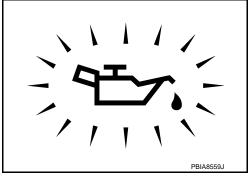
1. CHECK OIL PRESSURE WARNING LAMP

- Start engine.
- Check oil pressure warning lamp and confirm it is not illuminated.

Is oil pressure warning lamp illuminated?

YES >> Check the engine oil level. Refer to LU-28, "Inspection".

NO >> GO TO 2.



2.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE

Check the exhaust valve timing control solenoid valve. Refer to EC-786, "Component Inspection". Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-247, "Exploded View".

3.check crankshaft position sensor (pos)

Check the crankshaft position sensor (POS). Refer to EC-936, "Component Inspection".

Is the inspection result normal?

YFS >> GO TO 4.

NO >> Replace crankshaft position sensor (POS). Refer to EM-281, "Exploded View".

f 4.CHECK EXHAUST VALVE TIMING CONTROL POSITION SENSOR

Check the exhaust valve timing control position sensor. Refer to EC-939, "Component Inspection".

Is the inspection result normal? YES >> GO TO 5.

NO >> Replace exhaust valve timing control position sensor. Refer to EM-259, "Exploded View".

5.CHECK CAMSHAFT (EXH)

Check the following.

P0014 EVT CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

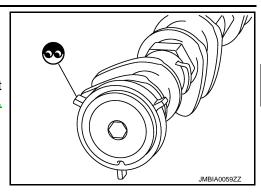
- · Accumulation of debris to the signal plate of camshaft rear end
- Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> GO TO 6.

NO

>> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to <u>EM-260</u>, <u>"Removal and Installation"</u>.



6. CHECK TIMING CHAIN INSTALLATION

Check service records for any recent repairs that may cause timing chain misaligned.

Are there any service records that may cause timing chain misaligned?

YES >> Check timing chain installation. Refer to EM-248, "Removal and Installation".

NO >> GO TO 7.

7.CHECK LUBRICATION CIRCUIT

Refer to LU-28, "Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Clean lubrication line.

Component Inspection

1. CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE-I

- Turn ignition switch OFF.
- 2. Disconnect exhaust valve timing control solenoid valve harness connector.
- 3. Check resistance between exhaust valve timing control solenoid valve terminals as per the following.

Exhaust valve timing control solenoid valve			
+	_	Resistance	
Terminal			
1	2	7.0 - 7.7 Ω [at 20°C (68°F)]	
1	Ground	∞ Ω	
2	Glound	(Continuity should not exist)	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-247, "Exploded View".

2.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE-II

Remove exhaust valve timing control solenoid valve. Refer to <u>EM-247, "Exploded View"</u>.

Provide 12 V DC between exhaust valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Check that the plunger moves as shown in the figure.

CAUTION:

Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in exhaust valve timing control solenoid valve.

NOTE:

Always replace O-ring when exhaust valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-247, "Exploded View".

JMBIA0079ZZ

Α

EC

D

Е

G

Н

INFOID:0000000011610902

1

K

M

Ν

0

P0030, P0031, P0032 A/F SENSOR HEATER

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis con- tent)	DTC detecting condition	Possible cause	
P0030	A/F SEN 1 HTR (B1) (Air fuel ratio (A/F) sensor 1 heater control circuit)	Deterioration in A/F sensor 1 heater performance. (Voltage signal transmitted from A/F sensor 1 heater to ECM is higher/lower than voltage in the normal range.)	Harness or connectors (A) (A) (A) (A) (B) (A) (B) (B)	
P0031	A/F SEN 1 HTR (B1) (Air fuel ratio (A/F) sensor 1 heater control circuit low)	The current amperage in the A/F sensor 1 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the A/F sensor 1 heater.)	(A/F sensor 1 heater circuit is open or shorted.)A/F sensor 1 heater	
P0032	A/F SEN 1 HTR (B1) (Air fuel ratio (A/F) sensor 1 heater control circuit high)	The current amperage in the A/F sensor 1 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the A/F sensor 1 heater.)	Harness or connectors (A/F sensor 1 heater circuit is shorted.) A/F sensor 1 heater	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than between 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for at least 10 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-790, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610904

${f 1.}$ CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- 1. Disconnect air fuel ratio (A/F) sensor 1 harness connector.
- 2. Turn ignition switch ON.
- 3. Check the voltage between A/F sensor 1 harness connector and ground.

+			
A/F sensor 1		_	Voltage
Connector	Terminal		
F72	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

P0030, P0031, P0032 A/F SENSOR HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

$\overline{2.}$ CHECK A/F SENSOR 1 HEATER OUTPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.

- Disconnect ECM harness connector. 2.
- Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+		_		
A/F se	ensor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F72	3	F24	116	Existed

Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK A/F SENSOR 1 HEATER

Check the A/F sensor 1 heater. Refer to EC-791, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 4.

4. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to EM-241, "Exploded View".

CAUTION:

- Discard any A/F sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new A/F sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J-43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

1. CHECK AIR FUEL RATIO (A/F) SENSOR 1

- Turn ignition switch OFF.
- 2. Disconnect A/F sensor 1 harness connector.
- Check resistance between A/F sensor 1 terminals as per the following.

+	_		
A/F sensor 1		Resistance	
Terminal			
	4	1.8 - 2.44 Ω [at 20°C (68°F)]	
3	1		
	2	$\infty \Omega$	
4	1	(Continuity should not exist)	
	2		

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1. Refer to EM-241, "Exploded View".

CAUTION:

EC

Α

Е

Н

INFOID:0000000011610905

N

P0030, P0031, P0032 A/F SENSOR HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

P0037, P0038 HO2S2 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

Е

Н

K

Ν

Р

INFOID:0000000011610907

P0037, P0038 HO2S2 HEATER

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0037	HO2 HTR (B1) (Heated oxygen sensor 2 heater control circuit low)	The current amperage in the heated oxygen sensor 2 heater circuit is out of the normal range. (An excessively low voltage signal is sent to ECM through the heated oxygen sensor 2 heater.)	Harness or connectors (Heated oxygen sensor 2 heater circuit is open or shorted.) Heated oxygen sensor 2 heater
P0038	HO2 HTR (B1) (Heated oxygen sensor 2 heater control circuit high)	The current amperage in the heated oxygen sensor 2 heater circuit is out of the normal range. (An excessively high voltage signal is sent to ECM through the heated oxygen sensor 2 heater.)	Harness or connectors (Heated oxygen sensor 2 heater circuit is shorted.) Heated oxygen sensor 2 heater

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Check 1st trip DTC.

With GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-793, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK HO2S2 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between HO2S2 harness connector and ground.

	+		
НО	2S2	_	Voltage
Connector	Connector Terminal		
F71	F71 4		Battery voltage

P0037, P0038 HO2S2 HEATER

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?
YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK HO2S2 HEATER OUTPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between HO2S2 harness connector and ECM harness connector.

	+		_	
НО	2S2	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F71	3	F24	117	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HEATED OXYGEN SENSOR 2 HEATER

Check the heated oxygen sensor 2 heater. Refer to EC-794, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 4.

4.REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

INFOID:0000000011610908

1. CHECK HEATED OXYGEN SENSOR 2 HEATER

- 1. Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
- 3. Check resistance between HO2S2 terminals as per the following.

+	_	
Heated oxy	gen sensor 2	Resistance
Terr	minal	
4	3	3.3 - 4.4 Ω [at 25°C (77°F)]
	2	
1	3	
	4	$\infty \Omega$
	1	(Continuity should not exist)
2	3	
	4	

Is the inspection result normal?

P0037, P0038 HO2S2 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> INSPECTION END

NO >> GO TO 2.

2. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to <u>EX-5, "Exploded View"</u>.

• Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard

surface such as a concrete floor; use a new one.

• Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

EC

Α

C

D

Ε

F

Н

K

M

L

Ν

0

P0046 WASTEGATE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0046 WASTEGATE CONTROL MOTOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0046 is displayed with DTC P2562, and/or P2566 first perform the trouble diagnosis for DTC P2562, and/or P2566. Refer to EC-1167, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P0046	TC/SC BOOST CONTROL A (Turbocharger/supercharger boost control A circuit range/ performance)	When the following conditions are detected due to a malfunction in electric wastegate actuator motor: Motor drive duty is 100% or more for 5 consecutive seconds The difference between target stroke and actual stroke is 3mm or more for 5 consecutive seconds	Harness or connectors (Electric wastegate control motor circuit is open or shorted.) Electric wastegate control actuator

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is between more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 10 seconds.
- 2. Start the engine and warm it up to nomal operating temperature.
- Check 1st trip DTC. (If actuator motor is stuck on the valve closing side, 1st trip DTC is detected during the above procedure. If 1st trip DTC is not detected, actuator motor may be stuck on the valve opening side. In this case, follow the instruction below.)
- Drive the vehicle and accelerate from 20km/h (13 MPH) to 80km/h (50 MPH) within 10 seconds.
 CAUTION:

Always drive at safe speed.

5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-796, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610910

1. CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR OUTPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect electric wastegate control actuator harness connector and ECM harness connector.
- Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

P0046 WASTEGATE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+					А
	egate control	F	CM	Continuity	_	
Connector	uator Terminal	Connector	Terminal	- Continuity		EC
Connector	4	Connector	107			
F61	5	F24	108	Existed		0
Is the inspec	tion result n	ormal?				
	GO TO 2.			1-		
NO >> 2.CHECK E	•	place error-d	•		,	D
					97, "Component Inspection (Electric Wastegate	
Control Actu		egate control	r actuator. To	leiei (0 <u>LO-7</u>	37. Component inspection (Electric wastegate	Е
Is the inspec						
		mittent incide ctric wastega			mittent Incident".	F
_	•				trol Actuator)	
,	·	•		gate con		G
1.INSPECT						
Do you have						Н
·	GO TO 2.	<u>:</u>				
_	GO TO 3.					
2.CHECK	ELECTRIC V	VASTEGATE	CONTROL	_ ACTUATOF	2	- 1
With CON 1. Turn ign		ON and engi	ne stonned			
2. On the 0	CONSULT s	creen, select	: "ENGINE" :	>> "ACTIVE	TEST" >> "WASTEGATE ACTUATOR".	J
Operate value "V	"Up" or "Do ′1" of "W/G /	wn", set "W/0 ACTUATOR	G ACTUATO POSI SEN E	OR POSITIOI 31".	NB1" to 0.002 m, and make a quick short note of	
4. Operate	"Up" or "Do	wn", set "W/0	G ACTUATO	R POSITIOI	NB1" to 0.006 m, and make a quick short note of	K
		ACTUATOR I			SHAFT operates) and "V2" minus "V1" becomes	
equal to or n	nore than 1.	<u>3V?</u>	, - (, , -			L
	INSPECTIO Replace Tui		ssembly (do	not replace	electric wastegate control actuator only). Refer	
					ponent Parts Location".	M
3.CHECK E	ELECTRIC V	VASTEGATE	CONTROL	ACTUATOF	8	
Without C		055				Ν
	ition switch ect Wastega	orr. ate control ad	ctuator harne	ess connecto	r.	
	necking the or negative		ENSOR OU	IT voltage wi	th an oscilloscope, apply a voltage of 12 V to the	0
•	•		perate and F	POSITION SI	ENSOR OUT voltage change?	
YES >>	INSPECTIO	N END				_
					electric wastegate control actuator only). Referponent Parts Location".	Р

P0075 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0075 IVT CONTROL SOLENOID VALVE

DTC Logic INFOID:000000011610912

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name ((Trouble diagnosis content))	DTC detecting condition	Possible cause
P0075	INT/V TIM V/CIR-B1 (Intake valve timing control solenoid valve circuit)	An improper voltage is sent to the ECM through intake valve timing control solenoid valve.	Harness or connectors (Intake valve timing control solenoid valve circuit is open or shorted.) Intake valve timing control solenoid valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-798, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610913

1. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect intake valve timing (IVT) control solenoid valve harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between intake valve timing control solenoid valve harness connector and ground.

	+		
IVT control s	olenoid valve	_	Voltage
Connector	Terminal		
F62	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between IVT control solenoid valve harness connector and IPDM E/R harness connector.

P0075 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

-	+	-	+						
IVT control s	olenoid valve	IPDN	Л E/R	Continuity					
Connector	Terminal	Connector	Terminal	_					
F62	2	E14	36	Existed					
. Also che	ck harness	for short to g	ground.						
	tion result n								
		trouble diagi place error-d		wer supply ci	cuit.				
_	•	-	•	is. SOLENOID \	NIVE C				
			CONTROL	SOLENOID		COUND	JIKCUIT		
	ition switch ect ECM ha	OFF. rness conne	ctor.						
				lenoid valve	arness	connector	and ECM	l harness con	nector.
		1		1					
	+		+	_					
	olenoid valve		CM	Continuity					
Connector	Terminal	Connector	Terminal	E total					
F62	1	F24	111	Existed					
		for short to g	ground and t	o power.					
ls the inspec	tion result n	_	ground and t	o power.					
Is the inspec	tion result n	_		·					
YES >>	<u>tion result n</u> GO TO 4. Repair or re	ormal? place error-d	letected part	·	ALVE				
Is the inspect YES >> NO >> 4.CHECK I	tion result n GO TO 4. Repair or re NTAKE VAL	ormal? place error-d VE TIMING (letected part	ts.		"Compor	nent Inspe	ction".	
Is the inspect YES >> NO >> 4.CHECK I	tion result n GO TO 4. Repair or re NTAKE VAL take valve ti	ormal? place error-d VE TIMING (ming control	letected part	ts. SOLENOID \		"Compor	nent Inspe	ction".	
Is the inspect YES >> NO >> 4. CHECK II Check the inspect YES >>	ction result n GO TO 4. Repair or re NTAKE VAL take valve ti ction result n Check interr	ormal? place error-d VE TIMING (ming control ormal? mittent incide	letected part CONTROL S solenoid va ent. Refer to	ts. SOLENOID \ lve. Refer to <u>GI-44, "Inter</u>	C-799	-	nent Inspe	ction".	
Is the inspect YES >> NO >> 1. CHECK II Check the interpretation Is the inspect YES >> NO >>	ction result n GO TO 4. Repair or re NTAKE VAL take valve ti ction result n Check interr Replace inta	ormal? place error-d VE TIMING (ming control ormal? mittent incide ake valve tim	letected part CONTROL S solenoid va ent. Refer to	ts. SOLENOID \ alve. Refer to	C-799	-	nent Inspe	ction".	
Is the inspect YES >> NO >> 4. CHECK II Check the inspect YES >>	ction result n GO TO 4. Repair or re NTAKE VAL take valve ti ction result n Check interr Replace inta	ormal? place error-d VE TIMING (ming control ormal? mittent incide ake valve tim	letected part CONTROL S solenoid va ent. Refer to	ts. SOLENOID \ lve. Refer to <u>GI-44, "Inter</u>	C-799	-	nent Inspe		0000011610914
S the inspective Section 1. Secti	ction result n GO TO 4. Repair or re NTAKE VAL take valve ti ction result n Check interr Replace inta	ormal? place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion	letected part CONTROL S solenoid va ent. Refer to ing control s	ts. SOLENOID \ alve. Refer to GI-44, "Inter colenoid valve	EC-799 nittent Ir	-	nent Inspe		0000011610914
Is the inspect YES >> NO >> 4. CHECK II Check the inspect YES >> NO >> NO >> Compone 1. CHECK II	ction result notion result notion result notice take valve to the control of the	ormal? place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion VE TIMING (letected part CONTROL S solenoid va ent. Refer to ing control s	ts. SOLENOID \ lve. Refer to <u>GI-44, "Inter</u>	EC-799 nittent Ir	-	nent Inspe		0000011610914
Is the inspect YES >> NO >> 4.CHECK II Check the in Is the inspect YES >> NO >> Compone 1.CHECK II 1. Turn ign 2. Disconn	ction result notion result notion result notice take valve to take valve to the check interresult notion result notion result notion switch ect intake value of the check inta	ormal? place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion VE TIMING (OFF. alve timing co	solenoid value. Refer to ing control soleno	ts. SOLENOID \ Ilve. Refer to GI-44, "Intersolenoid valve SOLENOID \ Did valve har	nittent In ALVE-I	cident".		INFOID:0000	
Is the inspect YES >> NO >> 4.CHECK II Check the in Is the inspect YES >> NO >> Compone 1.CHECK II 1. Turn ign 2. Disconn	ction result notion result notion result notice take valve to take valve to the check interresult notion result notion result notion switch ect intake value of the check inta	ormal? place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion VE TIMING (OFF. alve timing co	solenoid value. Refer to ing control soleno	ts. SOLENOID \ Ilve. Refer to GI-44, "Intersolenoid valve SOLENOID \ Did valve har	nittent In ALVE-I	cident".			
Is the inspect YES >> NO >> CHECK II Check the interpretation Is the inspect YES >> NO >> Compone Compone CHECK II Turn ign Disconn Check re	ction result notion result not a result not a result not result not result not a re	place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion VE TIMING (OFF. alve timing co	solenoid value. Refer to ing control soleno	ts. SOLENOID \ Ilve. Refer to GI-44, "Intersolenoid valve SOLENOID \ Did valve har	nittent In ALVE-I	cident".		INFOID:0000	
Is the inspect YES >> NO >> 1. CHECK II Check the interpretation Is the inspect YES >> NO >> Compone 1. CHECK II 1. Turn ign 2. Disconn 3. Check results Intake valve	ction result notion result notion result notice take valve to take valve to the check interresult notion result notion result notion switch ect intake value of the check inta	place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion VE TIMING (OFF. alve timing co	solenoid va ent. Refer to ing control solence ontrol solence e valve timin	ts. SOLENOID \ Ilve. Refer to GI-44, "Inter colenoid valve SOLENOID \ cid valve harm g control sole	nittent In ALVE-I	cident".		INFOID:0000	
Is the inspect YES >> NO >> CHECK II Check the interpretation Is the inspect YES >> NO >> Compone Compone CHECK II Turn ign Disconn Check re	ction result notion result not a result not a result not result not result not result not a resu	place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion VE TIMING (OFF. alve timing co	solenoid va ent. Refer to ing control solence ontrol solence e valve timin	ts. SOLENOID \ Ilve. Refer to GI-44, "Intersolenoid valve SOLENOID \ Did valve har	nittent In ALVE-I	cident".		INFOID:0000	
Is the inspect YES >> NO >> 1. CHECK II Check the interpretation Is the inspect YES >> NO >> Compone 1. CHECK II 1. Turn ign 2. Disconn 3. Check results Intake valve	ction result notion result not a result not a result not result not result not a re	place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion VE TIMING (OFF. alve timing co etween intake	letected part CONTROL S solenoid va ent. Refer to ing control s CONTROL S ontrol solence valve timin	ts. SOLENOID \ Ilve. Refer to GI-44, "Intersolenoid valve SOLENOID \ Did valve haring control sole	nittent Ir ALVE-I ess cor noid va	cident".		INFOID:0000	
Is the inspect YES >> NO >> 1. CHECK II Check the interpretation Is the inspect YES >> NO >> Compone 1. CHECK II 1. Turn ign 2. Disconn 3. Check results Intake valve	ction result notion result not a result not a result not result not result not result not a resu	place error-d VE TIMING (ming control ormal? mittent incide ake valve tim tion VE TIMING (OFF. alve timing co	letected part CONTROL S solenoid va ent. Refer to ing control s CONTROL S ontrol solence valve timin	ts. SOLENOID \ Ilve. Refer to GI-44, "Inter colenoid valve SOLENOID \ cid valve harm g control sole	nittent Ir ALVE-I ess cor noid va	cident".		INFOID:0000	

YES >> GO TO 2.

NO >> Replace intake valve timing control solenoid valve. Refer to EM-247, "Exploded View".

2.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-II

1. Remove intake valve timing control solenoid valve. Refer to EM-247, "Exploded View".

P0075 IVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Provide 12 V DC between intake valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Make sure that the plunger moves as shown in the figure.

CAUTION:

Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in intake valve timing control solenoid valve.

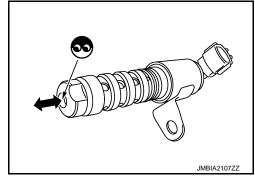
NOTE:

Always replace O-ring when intake valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace intake valve timing control solenoid valve. Refer to EM-247, "Exploded View".



P0078 EVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0078 EVT CONTROL SOLENOID VALVE

DTC Logic INFOID:0000000011610915

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0078	EX V/T ACT/CIRC-B1 (Exhaust valve timing control sole-noid valve circuit)	An improper voltage is sent to the ECM through exhaust valve timing control solenoid valve.	Harness or connectors (Exhaust valve timing control solenoid valve circuit is open or shorted.) Exhaust valve timing control solenoid valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO2.

2.perform dtc confirmation procedure

- Start engine and let it idle for 5 seconds.
- Check 1st trip DTC. 2.

Is 1st trip DTC detected?

YES >> Proceed to EC-801, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

${f 1}$.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect exhaust valve timing (EVT) control solenoid valve harness connector.
- Turn ignition switch ON. 3.
- Check the voltage between exhaust valve timing control solenoid valve harness connector and ground.

	+		
EVT control s	solenoid valve	_	Voltage
Connector	Terminal		
F100	2	Ground	Battery voltage

Is the inspection result normal?

>> GO TO 3. YES

NO >> GO TO 2.

2.check exhaust valve timing control solenoid valve power supply circuit

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between EVT control solenoid valve harness connector and IPDM E/R harness connector.

EC-801 Revision: 2014 October 2015 JUKE

EC

Α

Е

D

Н

INFOID:0000000011610916

K

M

N

P0078 EVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+		+	
EVT control s	solenoid valve	IPDN	M E/R	Continuity
Connector	Terminal	Connector	Terminal	
F100	2	E14	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check exhaust valve timing control solenoid valve ground circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVT control solenoid valve harness connector and ECM harness connector.

+		+		
EVT control s	solenoid valve	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F100	1	F24	112	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE

Check the exhaust valve timing control solenoid valve. Refer to EC-799, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace exhaust valve timing control solenoid valve.

Component Inspection

INFOID:0000000011610917

1. CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE-I

- 1. Turn ignition switch OFF.
- 2. Disconnect exhaust valve timing control solenoid valve harness connector.
- 3. Check resistance between exhaust valve timing control solenoid valve terminals as per the following.

Exhaust valve timing	control solenoid valve	
+	_	Resistance
Terr	minal	
1	2	7.0 - 7.7 Ω [at 20°C (68°F)]
1	Ground	Ω
2	Giodila	(Continuity should not exist)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace exhaust valve timing control solenoid valve. Refer to EM-247, "Exploded View".

2.CHECK EXHAUST VALVE TIMING CONTROL SOLENOID VALVE-II

1. Remove exhaust valve timing control solenoid valve. Refer to EM-247, "Exploded View".

P0078 EVT CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2. Provide 12 V DC between exhaust valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Check that the plunger moves as shown in the figure.

CAUTION:

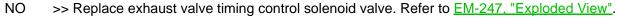
Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in exhaust valve timing control solenoid valve.

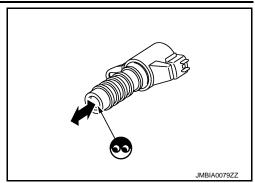
NOTE:

Always replace O-ring when exhaust valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END





EC

Α

D

Е

F

G

Н

1

J

K

L

Ν

0

[MR EXCEPT FOR NISMO RS MODELS]

P0087 FRP CONTROL SYSTEM

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0087 is displayed with DTC P0090 and/or P1197, first perform the trouble diagnosis for DTC P0090 and/or P1197. Refer to <u>EC-811</u>, "<u>DTC Logic</u>" and/or<u>EC-1068</u>, "<u>DTC Logic</u>".
- DTC P0087 may be displayed when running out of gas or air accumulation.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0087	LOW FUEL PRES (High fuel pressure too low)	 Fuel rail pressure does not reach 1.3 MPa (13 bar, 13.3 kg/cm2, 188.5 psi) at engine cold start [water temperature 5°C (41°F) – 40°C (104°F)]. Fuel rail pressure remains at 8.5 MPa (85 bar, 86.7 kg/cm2, 1232.8 psi) or less for 1 second or more during engine idle condition after cold start [water temperature 5°C (41°F) – 40°C (104°F)]. The following condition continues for 5 seconds or more after engine start (regardless of water temperature): Target fuel pressure – Actual fuel pressure ≥ 2.7 MPa (27 bar, 27.5 kg/cm2, 392 psi). 	Fuel system Leakage in fuel line High pressure fuel pump Low pressure fuel pump Damage in lifter

DTC CONFIRMATION PROCEDURE

1. CHECK FUEL LEAKAGE

- 1. Turn ignition switch ON.
- 2. Visually check the piping between low pressure fuel pump and fuel injectors for fuel leakage.
- 3. Start the engine.
- 4. Visually check the piping between low pressure fuel pump and fuel injectors for fuel leakage.

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.
- Before performing the following procedure, check that the fuel tank is 1/8 full of fuel.

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-1

(P)WITH CONSULT

- 1. Turn ignition switch ON.
- Select "COOLAN TEMP/S" in "DATA MONITOR" mode of "ENGNE" using CONSULT.
- Check the following condition;

COOLAN TEMP/S	: 5 – 40°C (41 – 104°F)
---------------	-------------------------

P0087 FRP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS > [MR EXCEPT FOR NISMO RS MODELS]	
WITH GST Follow the above steps for "WITH CONSULT". Is the condition satisfied?	Α
YES >> GO TO 4.	EC
4.PERFORM DTC CONFIRMATION PROCEDURE-2	0
WITH CONSULT Start the engine and let it idle for 10 seconds. Check 1st trip DTC. WITH GST Follow the above steps for "WITH CONSULT".	D
Is 1st trip DTC detected? YES >> Proceed to EC-805, "Diagnosis Procedure". NO >> GO TO 5.	Е
5.PERFORM DTC CONFIRMATION PROCEDURE-3	F
 WITH CONSULT Select "COOLAN TEMP/S" in "DATA MONITOR" mode of "ENGINE" using CONSULT. Maintain the following condition for 10 seconds or more at idle. 	G
COOLAN TEMP/S : 70°C (104°F) or more	
3. Check 1st trip DTC.	Н
YES >> Proceed to EC-805, "Diagnosis Procedure".	
NO >> INSPECTION END. Diagnosis Procedure	J
1.BLEED THE FUEL LINE	K
 Start the engine, and let the engine run at idle at least for 10 minutes. Perform DTC confirmation procedure of DTC P0087. 	
Is 1st trip DTC detected? YES >> GO TO 2. NO >> GO TO 6.	L
2.CHECK LOW FUEL PRESSURE	M
Check low fuel pressure. Refer to EC-756, "Work Procedure".	
Is inspection result normal? YES >> GO TO 3.	Ν
NO >> Check low fuel pressure system. Refer to EC-1233 , "Diagnosis Procedure". 3. CHECK LOW PRESSURE FUEL LINE FOR INTERNAL LEAKAGE	
Turn ignition switch OFF.	0
 Turn ignition switch ON. Check the following value 30 minutes after turning the ignition switch ON. 	Р
Low fuel pressure : 206 kPa (2.1 bar, 2.2 kgf/cm2, 30 psi) or more	
Is inspection result normal?	
 YES >> GO TO 4. NO >> Replace low pressure fuel pump. Refer to <u>FL-6. "2WD : Removal and Installation"</u> (2WD models), <u>FL-10. "AWD : Removal and Installation"</u> (AWD models). 	

P0087 FRP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. CHECK HIGH PRESSURE FUEL PUMP

Check high pressure fuel pump. Refer to EC-806, "Component Inspection (High Pressure Fuel Pump)".

Is inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace the error-detected parts.

5.CHECK HIGH PRESSURE FUEL PUMP LIFTER

Check high pressure fuel pump lifter. Refer to EM-202, "Removal and Installation".

Does the lifter top surface have scratches and/or dents?

YES >> Replace the error-detected parts.

NO >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

6.CHECK LOW PRESSURE FUEL LINE FOR INTERNAL LEAKAGE

- 1. Turn ignition switch OFF.
- Connect fuel pressure gauge. Refer to <u>EC-756</u>, "Work Procedure".
- 3. Turn ignition switch ON.
- 4. Check the following value 30 minutes after turning the ignition switch ON.

Low fuel pressure : 206 kPa (2.1 bar, 2.2 kgf/cm2, 30 psi) or more

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace low pressure fuel pump. Refer to <u>FL-6, "2WD : Removal and Installation"</u> (2WD models), <u>FL-10, "AWD : Removal and Installation"</u> (AWD models).

Component Inspection (High Pressure Fuel Pump)

INFOID:0000000011734132

1. CHECK HIGH PRESSURE FUEL PUMP-1

- Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump harness connector.
- 3. Check the resistance between high pressure fuel pump terminals.

+ – High pressure fuel pump		Condition		Resistance (Approx.)
1	2	Temperature °C (°F)	20 – 30 (68 - 86)	0.46 - 0.51 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace high pressure fuel pump. Refer to EM-202, "Exploded View".

2.CHECK HIGH PRESSURE FUEL PUMP-2

(P)WITH CONSULT

- 1. Reconnect high pressure fuel pump harness connector.
- Start the engine.
- Check "FUEL PRES SEN V" in "DATA MONITOR" mode of "ECM" using CONSULT.

Monitor item	Condition	Value (Approx.)
FUEL PRES SEN V	Engine speed: idle	1,140 – 1,460 mV
TOLETRES SEN V	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

NWITHOUT CONSULT

- Reconnect high pressure fuel pump harness connector.
- 2. Start the engine.
- 3. Check FRP sensor signal voltage.

P0087 FRP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	ECM			.,,
Connector	+	-	Condition	Value (Approx.)
Connector	Term	ninal		, , ,
F23 25 13		13	Engine speed: idle	1.14 – 1.46 V
		13	Engine speed: Revving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V

EC

Α

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace high pressure fuel pump. Refer to EM-202, "Exploded View".

D

Е

F

G

Н

Κ

L

M

Ν

 \bigcirc

P0088 FRP CONTROL SYSTEM

DTC Logic INFOID:000000011734133

DTC DETECTION LOGIC

NOTE:

If DTC P0088 is displayed with DTC P0090, first perform the trouble diagnosis for DTC P0090. Refer to <u>EC-811, "DTC Logic"</u>.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0088	HIGH FUEL PRES (High fuel pressure too high)	Fuel rail pressure remains at more than 16.5 MPa (165 bar, 168.3 kg/cm², 2392.5 psi) for 1 second or more during engine idle condition after cold start [water temperature 5°C (41°F) - 40°C (104°F)]. The following condition continues for 5 seconds or more after engine start (regardless of water temperature): Actual fuel pressure − Target fuel pressure ≥ 2.7 MPa (27 bar, 27.5 kg/cm², 392 psi)	Harness or connector (The high pressure fuel pump circuit is open or shorted) High pressure fuel pump

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.
- Before performing the following procedure, check that the fuel tank is 1/8 full of fuel.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-1

 Warm up the engine to the normal operating temperature and keep the engine speed at idle for 15 seconds.

NOTE:

Warm up the engine until "COOLAN TEMP/S" on "DATA MONITOR" mode of "ENGINE" using CONSULT reaches at least 70°C (158°F).

2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-811, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-2

- 1. Cool the engine until the engine coolant temperature reaches 60°C (140°F) or less.
- Start the engine and wait at least 40 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-811, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011734134

1. CHECK LOW FUEL PRESSURE

P0088 FRP CONTROL SYSTEM

[MR EXCEPT FOR NISMO RS MODELS] < DTC/CIRCUIT DIAGNOSIS > Check low fuel pressure. Refer to EC-756, "Work Procedure". Α Is inspection result normal? YES >> GO TO 2. NO >> Check low fuel pressure system. Refer to EC-1233, "Diagnosis Procedure". EC 2.CHECK HIGH PRESSURE FUEL PUMP Check high pressure fuel pump. Refer to EC-809, "Component Inspection (High Pressure Fuel Pump)". Is inspection result normal? YES >> GO TO 3. NO >> Replace error-detected parts. 3.CHECK FUEL LEAKAGE D Start the engine. Visually check that the fuel pump, fuel rail, and fuel piping have no fuel leakage. Е Is inspection result normal? YES >> Check that the fuel system has no breakage, bend, and crush. Refer to FL-4. "Inspection". NO >> Replace or replace the error-detected parts. Component Inspection (High Pressure Fuel Pump) INFOID:0000000011734135 1. CHECK HIGH PRESSURE FUEL PUMP-1 Turn ignition switch OFF. Disconnect high pressure fuel pump harness connector. Check the resistance between high pressure fuel pump terminals. Н + Resistance High pressure fuel pump Condition (Approx.) Terminal 2 Temperature °C (°F) 20 - 30 (68 - 86) $0.46 - 0.51 \Omega$ Is the inspection result normal? YES >> GO TO 2. NO >> Replace high pressure fuel pump. Refer to <a>EM-202, "Exploded View". K 2.CHECK HIGH PRESSURE FUEL PUMP-2 (P)WITH CONSULT 1. Reconnect high pressure fuel pump harness connector. Start the engine. Check "FUEL PRES SEN V" in "DATA MONITOR" mode of "ECM" using CONSULT. Value Monitor item Condition (Approx.) 1,140 - 1,460 mV N Engine speed: idle FUEL PRES SEN V Engine speed: Revving engine from idle to 4,000 rpm quickly 1,300 - 2,900 mV

- Reconnect high pressure fuel pump harness connector.
- 2. Start the engine.
- Check FRP sensor signal voltage.

EC-809 Revision: 2014 October 2015 JUKE

P0088 FRP CONTROL SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	ECM			V-1 -
Connector	+ -		Condition	Value (Approx.)
Connector	Tern	ninal		(11 - 7
F23 25 13		13	Engine speed: idle	1.14 – 1.46 V
		13	Engine speed: Revving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace high pressure fuel pump. Refer to EM-202, "Exploded View".

P0090 HIGH PRESSURE FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0090 HIGH PRESSURE FUEL PUMP

DTC Logic INFOID:0000000011734136

DTC DETECTION LOGIC

NOTE:

- If DTC P0090 is displayed with DTC P1197, first perform the trouble diagnosis for DTC P1197. Refer to EC-1068, "DTC Logic".
- DTC P0090 may be displayed when running out of gas.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0090	FUEL PUMP (High pressure fuel pump circuit)	 Fuel rail pressure remains at 1.5 MPa (15 bar, 15.3 kg/ cm², 217.5 psi) or less for 3 seconds or more during engine rev. Fuel rail pressure remains at 18.5 MPa (185 bar, 188.7 kg/ cm², 2682.5 psi) or more for 0.3 seconds or more during engine rev. 	Harness or connectors (The fuel pump circuit is open or shorted.) High pressure fuel pump

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.
- Before performing the following procedure, check that the fuel tank is 1/8 full of fuel.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

(P)WITH CONSULT

- 1. Start engine.
- Select "COOLAN TEMP/S" in "DATA MONITOR" mode of "ENGNE" using CONSULT.
- Maintain the following condition for 5 seconds or more at idle.

COOLAN TEMP/S : 70°C (104°F) or more

Check 1st trip DTC.

WITH GST

Follow the above steps for "WITH CONSULT".

Is 1st trip DTC detected?

YES >> Proceed to EC-811, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

${f 1}$.CHECK HIGH PRESSURE FUEL PUMP CIRCUIT

- Turn ignition switch ON.
- 2. Disconnect ECM harness connector and high pressure fuel pump harness connector.
- Check the continuity between ECM harness connector and high pressure fuel pump harness connector.

EC

Α

Е

D

F

Н

K

N

Р

INFOID:0000000011734137

P0090 HIGH PRESSURE FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+		_		
E	СМ	High pressure fuel pump		Value (Approx.)
Connector	Terminal	Connector	Terminal	(11 -)
F23	48	F53	1	Existed
1 23	49	1 33	2	LAISIGU

4. Also check harness for short to ground and to power.

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace the error-detected parts.

2.CHECK HIGH PRESSURE FUEL PUMP

Check high pressure fuel pump. Refer to <u>EC-812, "Component Inspection (High Pressure Fuel Pump)"</u>.

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace the error-detected parts.

Component Inspection (High Pressure Fuel Pump)

INFOID:0000000011734138

1. CHECK HIGH PRESSURE FUEL PUMP-1

- 1. Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump harness connector.
- 3. Check the resistance between high pressure fuel pump terminals.

+ High pressu	re fuel pump	Condition		Resistance
	minal			(Approx.)
1	2	Temperature °C (°F)	20 – 30 (68 - 86)	0.46 - 0.51 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace high pressure fuel pump. Refer to EM-202, "Exploded View".

2.CHECK HIGH PRESSURE FUEL PUMP-2

(P)WITH CONSULT

- Reconnect high pressure fuel pump harness connector.
- Start the engine.
- 3. Check "FUEL PRES SEN V" in "DATA MONITOR" mode of "ECM" using CONSULT.

Monitor item	Condition	Value (Approx.)
FUEL PRES SEN V	Engine speed: idle	1,140 – 1,460 mV
TOLLT NES SEN V	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

NWITHOUT CONSULT

- 1. Reconnect high pressure fuel pump harness connector.
- 2. Start the engine.
- 3. Check FRP sensor signal voltage.

P0090 HIGH PRESSURE FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	ECM			V-1 -
Connector	+	_	Condition	Value (Approx.)
Connector	Term	ninal		, , ,
F23	25 13		Engine speed: idle	1.14 – 1.46 V
1 25			Engine speed: Revving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V

EC

Α

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace high pressure fuel pump. Refer to EM-202, "Exploded View".

D

Е

F

G

Н

K

M

L

Ν

0

P0096 IAT SENSOR 2

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0096	IAT SENSOR 2 B1 [Intake air temperature (IAT) sensor 2 circuit range/performance]	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor 1, IAT sensor 2, ECT sensor, FTT sensor, and EOT sensor) shows that the voltage signal of the IAT sensor 2 is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the IAT sensor 2 circuit) IAT sensor 2

DTC CONFIRMATION PROCEDURE

1. INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 3.

NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-815, "Component Function Check".

NOTE:

Use the component function check to check the overall function of the IAT sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-815, "Diagnosis Procedure".

3. PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

2. Turn ignition switch OFF and leave the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during this procedure.

NOTE:

The vehicle must be cooled with the hood open.

3. Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

Check 1st trip DTC.

P0096 IAT SENSOR 2

		P009	96 IAT SE			
< DTC/CIR	CUIT DIAGI	NOSIS >		[MR EXCEPT	FOR NISMO RS MODELS]	
•	TC detected	_				
	Proceed to INSPECTIC	<u>EC-815, "Diagnosis P</u> N END	<u>rocedure"</u> .			1
	ent Function				INFOID:000000011667877	
•				_	## 012.0000000 #100.01	E
-		TEMPERATURE (IAT) SENSOR	2		
	nition switch nect turboch:	OFF. arger boost sensor ha	rness conne	ctor.		(
		etween turbocharger b				
Turbocharge	er boost sensor					
+	-	Condition		Resistance (kΩ)		
Ter	minal			, ,		
3	4	Temperature [°C (°F)]	25 (77)	1.80 – 2.20		
•	ction result r					
		mittent incident. Refer EC-815, "Diagnosis P		ntermittent Incident".		
	s Procedu	_			INFOID:000000011667878	
4					## 612.0000000 #100.1010	(
		TEMPERATURE (IAT	-			
	ce air temper ction result r		to <u>EC-815, "</u>	Component Inspection	<u>1"</u> .	ŀ
		<u>normar:</u> mittent incident. Refer	to GI-44, "Ir	ntermittent Incident".		
		rbocharger boost sei			ensor 2). Refer to EM-193,	
Compone	ent Inspec	tion			INFOID:0000000011667879	
1. CHECK	INTAKE AIR	TEMPERATURE SEI	NSOR 2			
1. Turn igi	nition switch	OFF.				
		arger boost sensor ha etween turbocharger b				
J. CHECK	i coiotai ice Di	etween turbocharger t	10031 3611301	terrilliais as luiluws.		
		T				

Turbocharge	boost sensor	Condition		
+	_			Resistance ($k\Omega$)
Term	ninals			
3	4	Temperature [°C (°F)]	25 (77)	1.80 – 2.20

Is the inspection result normal?

YES >> INSPECTION END

NO

>> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to <u>EM-196.</u> "<u>Exploded View</u>".

Revision: 2014 October EC-815 2015 JUKE

0

Ν

P0097, P0098 IAT SENSOR 2

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0097	IAT SENSOR 2 B1 (Intake air temperature sensor 2 circuit low input)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the intake air temperature sensor 2 is 0.085 V or less.	Harness or connectors (Intake air temperature sensor 2 circuit is open or shorted.)
P0098	IAT SENSOR 2 B1 (Intake air temperature sensor 2 circuit high input)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the intake air temperature sensor 2 is 4.84 V or more.	 Intake air temperature sensor 2 Sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-816, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610922

1. CHECK INTAKE AIR TEMPERATURE SENSOR 2 POWER SUPPLY CIRCUIT-I

- 1. Turn ignition switch OFF.
- 2. Disconnect turbocharger boost sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between turbocharger boost sensor harness connector terminals.

Tu	V 16		
Connector	+ -		Voltage (Approx.)
Connector	Terminal		(11 - 7
F75	3	4	5 V

Is the inspection result normal?

YES >> GO TO 2. NO >> GO TO 4.

2.CHECK INTAKE AIR TEMPERATURE SENSOR 2 SIGNAL CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

P0097, P0098 IAT SENSOR 2

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

C D TO/OIRO	011 01/0140	010 >			<u> </u>
	+		_		
Turbocharge	r boost sensor	E	CM	Continuity	
Connector	Terminal	Connector	Terminal	_	
F75	3	F24	77	Existed	
. Also ched	ck harness for	short to grour	nd and short	to power.	
the inspect	ion result norr	nal?			
	O TO 3.				
	•	ce error-detec	•		
		MPERATURE			
	•		efer to <u>EC-8</u>	18, "Component Inspection".	
•	ion result norr		Pofor to GL 4	4, "Intermittent Incident".	
NO >> R	Replace turbo	charger boost	sensor (wit	h intake air temperature sensor 2). Refer to <u>EM</u>	<i>I</i> I-193,
	Exploded Viev		,		
.CHECK IN	ITAKE AIR TE	MPERATURE	SENSOR 2	POWER SUPPLY CIRCUIT-II	
heck the vo	Itage between	turbocharger	boost senso	r harness connector terminal and ground.	
	+			Voltage	
Turboch	arger boost senso	or	-	(Approx.)	
Connector	Termi	nal			
F75	3	G	Pround	5 V	
•	ion result norr	nal?			
	SO TO 5. SO TO 7.				
		MDEDATIDE	SENSOD O	GROUND CIRCUIT	
			JEINOUR Z	GROUND CIRCUIT	
	tion switch OF ect ECM harne				
			harger boost	sensor harness connector and ECM harness conn	nector.
	+		_		
Turbocharge	r boost sensor	E	СМ	Continuity	
Connector	Terminal	Connector	Terminal		
	4	F00	40	Friend	

	+			
Turbocharge	r boost sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F75	4	F23	13	Existed

Is the inspection result normal?

YES >> GO TO 6.

>> Repair or replace error-detected parts. NO

6. CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

EC-817 Revision: 2014 October 2015 JUKE

Ν

P0097, P0098 IAT SENSOR 2

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

E	СМ	Ground	Continuity	
Connector	Connector Terminal		Continuity	
	9			
F23	10		Existed	
	50			
F24	60	Ground		
1 24	110	Giodila		
	147			
E19	149			
	152			

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

7.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

Component Inspection

INFOID:0000000011610923

1.CHECK INTAKE AIR TEMPERATURE SENSOR 2

- Turn ignition switch OFF.
- 2. Disconnect turbocharger boost sensor harness connector.
- Check resistance between turbocharger boost sensor terminals as follows.

Turbocharge	r boost sensor	Condition		
+	_			Resistance ($k\Omega$)
Term	ninals			
3	4	Temperature [°C (°F)]	25 (77)	1.80 – 2.20

Is the inspection result normal?

YES >> INSPECTION END

NO

>> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to <u>EM-193.</u> "Exploded View".

P00B3, P00B4 ENGINE COOLANT TEMPERATURE SENSOR 2

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P00B3, P00B4 ENGINE COOLANT TEMPERATURE SENSOR 2

DTC Logic INFOID:0000000011610924

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P00B3	RADIATOR COOLANT TEMP SEN (Radiator coolant temperature sensor circuit low)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the engine coolant temperature sensor 2 is 0.04 V or less.	Harness or connectors (Engine coolant temperature sensor 2)
P00B4	RADIATOR COOLANT TEMP SEN (Radiator coolant temperature sensor circuit high)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the engine coolant temperature sensor 2 is 4.84 V or more.	circuit is open or shorted.) • Engine coolant temperature sensor 2

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-819, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1.CHECK ENGINE COOLANT TEMPERATURE SENSOR 2 POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect engine coolant temperature (ECT) sensor 2 harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between ECT sensor 2 harness connector and ground.

	+		\	
ECT s	ensor 2	_	Voltage (Approx.)	
Connector Terminal			, , ,	
E205	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2.CHECK ENGINE COOLANT TEMPERATURE SENSOR 2 GROUND CIRCUIT

EC-819 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

INFOID:0000000011610925

M

Ν

P00B3, P00B4 ENGINE COOLANT TEMPERATURE SENSOR 2

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between ECT sensor 2 harness connector and ECM harness connector.

+			_	
ECT s	ensor 2	ECM		Continuity
Connector	Terminal	Connector	Terminal	
E205	2	F23	45	Existed

4. Also check harness for short to ground to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK ENGINE COOLANT TEMPERATURE SENSOR 2

Check the engine coolant temperature sensor 2. Refer to <u>EC-820, "Component Inspection (Engine Coolant Temperature Sensor 2)"</u>.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace engine coolant temperature sensor 2. Refer to <u>CO-45, "Exploded View"</u>.

4. CHECK ENGINE COOLANT TEMPERATURE SENSOR 2 POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between ECT sensor 2 harness connector and ECM harness connector.

+		_		
ECT s	ensor 2	ECM		Continuity
Connector	Terminal	Connector	Terminal	
E205	1	F23	40	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

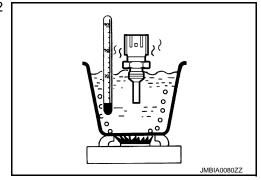
Component Inspection (Engine Coolant Temperature Sensor 2)

INFOID:0000000011610926

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR 2

- 1. Turn ignition switch OFF.
- 2. Disconnect engine coolant temperature sensor 2 harness connector.
- 3. Remove engine coolant temperature sensor 2.
- 4. Check resistance between engine coolant temperature sensor 2 terminals by heating with hot water as shown in the figure.

ECT sensor 2				
+	_	Condition		Resistance
Terr	ninal			
			20 (68)	2.37 - 2.63 kΩ
1	2	Temperature [°C (°F)] 50 (122)		0.68 - 1.00 kΩ
			90 (194)	0.236 - 0.260 kΩ



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor 2. Refer to <u>CO-45, "Exploded View"</u>.

P00C1, P00C2 TURBOCHARGER BYPASS CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P00C1, P00C2 TURBOCHARGER BYPASS CONTROL VALVE

DTC Logic INFOID:0000000011610927

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause	
P00C1	TC/SC BYPASS VALVE B (Turbocharger/supercharger bypass valve B control circuit low)	An excessively low voltage from the turbo- charger bypass control valve is sent to ECM.	Harness or connectors (Turbocharger bypass control valve cir-	
P00C2	TC/SC BYPASS VALVE B (Turbocharger/supercharger bypass valve B control circuit high)	An excessively high voltage from the turbo- charger bypass control valve is sent to ECM.	cuit is open or shorted.)	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-821, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. TURBOCHARGER BYPASS CONTROL VALVE POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect turbocharger bypass control valve harness connector. 2.
- Turn ignition switch ON.
- Check the voltage between turbocharger bypass control valve harness connector and ground.

	+		
•	bypass control lve	_	Voltage
Connector Terminal			
F64	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

>> Perform the trouble diagnosis for power supply circuit. NO

2.CHECK TURBOCHARGER BYPASS CONTROL VALVE INPUT SIGNAL CIRCUIT

Turn ignition switch OFF.

EC-821 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

INFOID:0000000011610928

Ν

P00C1, P00C2 TURBOCHARGER BYPASS CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 2. Disconnect ECM harness connector.
- Check the continuity between turbocharger bypass control valve harness connector and ECM harness connector.

+			_	
Turbocharger bypass control valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F64	2	F24	105	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK TURBOCHARGER BYPASS CONTROL VALVE

Check the turbocharger bypass control valve. Refer to <u>EC-822</u>, "Component Inspection (Turbocharger Bypass Control Valve)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace turbocharger assembly (do not replace bypass control valve only). Refer to EM-241, <a href="Exploded View".

Component Inspection (Turbocharger Bypass Control Valve)

INFOID:0000000011610929

1. CHECK TURBOCHARGER BYPASS CONTROL VALVE

(P)With consult

NO

- 1. Turn ignition switch ON and engine stopped or engine running (idling, less than 1200rpm).
- On the CONSULT screen, select ENGINE » ACTIVE TEST » "TC BYPASS VALVE".
- 3. Operate "ON" or "OFF" and check if valve operating sound can be heard.

- Turn ignition switch OFF.
- 2. Disconnect turbocharger bypass control valve harness connector.
- 3. Apply a voltage of 12V to the positive or negative terminal.

Can the valve operating sound be heard?

YES >> INSPECTION END

NO >> Replace turbocharger assembly (do not replace bypass control valve only). Refer to <u>EM-241</u>, "Exploded View".

DTC Logic INFOID:0000000011667571

DTC DETECTION LOGIC

NOTE:

If DTC P0101 is displayed with other DTC, first perform the trouble diagnosis for other DTC.

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0101	MAF SEN/CIRCUIT-B1 (Mass air flow sensor circuit range/performance)	 A high voltage from the sensor is sent to ECM under light load driving condition. A low voltage from the sensor is sent to ECM under heavy load driving condition. 	Harness or connectors (The sensor circuit is open or shorted.) Intake air leaks Mass air flow sensor EVAP control system pressure sensor Intake air temperature sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and warm it up to normal operating temperature.
- Drive the vehicle for at least 5 seconds under the following conditions: **CAUTION:**

Always drive vehicle at safe speed.

Selector lever	Suitable position
Vehicle speed	40 km/h (25 MPH) or more

NOTE:

- The gear must be fixed while driving the vehicle.
- Keep the accelerator pedal as steady as possible during cruising.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-823, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

CHECK INTAKE SYSTEM

Check the following items to see the installation condition and the connection condition of the joint.

- Air duct
- Intake air passage between air duct and intake manifold

Is the inspection result normal?

>> GO TO 2. YES

NO >> Reconnect or replace error-detected parts.

2.CHECK MASS AIR FLOW (MAF) SENSOR POWER SUPPLY

EC

Α

Е

D

Н

N

INFOID:0000000011667572

Р

EC-823

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 1. Disconnect MAF sensor harness connector.
- Turn ignition switch ON.
- 3. Check the voltage between MAF sensor harness connector and ground.

	+			
MAF	sensor	_	Voltage	
Connector	Terminal			
F8	1	Ground	Approx. 5 V	

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.check mass air flow (maf) sensor power supply circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between MAF sensor harness connector and ECM harness connector.

MAF	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
F8	1	F23	26	Existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

4.CHECK MAF SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between MAF sensor harness connector and ECM harness connector.

MAF sensor		ECM		Continuity	
Connector	Terminal	Connector Terminal		Continuity	
F8	2	F23	37	Existed	

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

${f 5}.$ CHECK MAF SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between MAF sensor harness connector and ECM harness connector.

MAF sensor		E	Continuity	
Connector	Terminal	Connector Terminal		Continuity
F8	3	F23	42	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

6.CHECK INTAKE AIR TEMPERATURE SENSOR 1

Check intake air temperature sensor 1. Refer to EC-825, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Replace MAF sensor (with intake air temperature sensor 1).

7.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check EVAP control system pressure sensor. Refer to EC-995, "Component Inspection".

Is the inspection result normal?

>> GO TO 8. YES

NO >> Replace EVAP control system pressure sensor.

8. CHECK MAF SENSOR

Check MAF sensor. Refer to EC-825, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace MAF sensor. Refer to EM-191, "Exploded View". NO

Component Inspection

1. CHECK MASS AIR FLOW (MAF) SENSOR-I

(P)With CONSULT

- Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode.
- Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

Monitor item	Condition	Indication (Hz)
	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
MASS AIR FLOW SENSOR (Hz)	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- Check the frequency between ECM harness connector terminals under the following conditions.

ECM				
Connector	+	_	Condition	Frequency (Hz)
Connector	Terr	minal		
F23	37	37 42	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
			Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
			Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2.CHECK FOR THE CAUSE OF UNEVEN AIR FLOW THROUGH MAF SENSOR

- 1. Turn ignition switch OFF.
- Check for the cause of uneven air flow through MAF sensor. Refer to the following.

EC-825 Revision: 2014 October 2015 JUKE

EC

Α

D

INFOID:0000000011667573

N

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- Improper specification of intake air system parts

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 3.

3. CHECK MAF SENSOR-II

(P)With CONSULT

- Repair or replace malfunctioning part.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Connect CONSULT and select "DATA MONITOR" mode.
- 4. Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

Monitor item	Condition	Indication (Hz)
	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
MASS AIR FLOW SENSOR (Hz)	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

- 1. Repair or replace malfunctioning part.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Check the frequency between ECM harness connector terminals under the following conditions.

ECM				
Connector	+	_	Condition	Frequency (Hz)
Connector	Ter			
	37	37 42	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
F23			Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
F23			2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
			Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4. CHECK MAF SENSOR-III

(P)With CONSULT

- 1. Turn ignition switch OFF.
- 2. Disconnect MAF sensor harness connector and reconnect it again.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode.
- 5. Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Monitor item	Condition	Indication (Hz)
	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
MASS AIR FLOW SENSOR (Hz)	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Without CONSULT

- 1. Turn ignition switch OFF.
- 2. Disconnect MAF sensor harness connector and reconnect it again.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the frequency between ECM harness connector terminals under the following conditions.

ECM				
Connector	+	_	Condition	Frequency (Hz)
Connector	Terr	minal		
	37	temperature.)	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
F23			Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
			2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
			5,100 – 5,500 to Approx. 7,000 Hz*	

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Clean or replace MAF sensor. Refer to EM-191, "Exploded View".

Revision: 2014 October EC-827 2015 JUKE

EC

Α

D

Е

F

G

Н

1

J

K

N

 \circ

P0102, P0103 MAF SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0102	MAF SEN/CIRCUIT-B1 (Mass air flow sensor circuit low input)	An excessively low voltage from the mass air flow sensor is sent to ECM.	Harness or connectors (Mass air flow sensor circuit is open or shorted.) Intake air leaks Mass air flow sensor
P0103	MAF SEN/CIRCUIT-B1 (Mass air flow sensor circuit high input)	An excessively high voltage from the mass air flow sensor is sent to ECM.	Harness or connectors (Mass air flow sensor circuit is open or shorted.) Mass air flow sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

Which DTC is detected?

P0102 >> GO TO 2.

P0103 >> GO TO 3.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0102

- 1. Start engine and wait at least 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-828, "Diagnosis Procedure".

NO >> INSPECTION END

3.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0103-I

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-828, "Diagnosis Procedure".

NO >> GO TO 4.

4.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P0103-II

- 1. Start engine and wait at least 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-828, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610931

1. INSPECTION START

Confirm the detected DTC.

Which DTC is detected?

P0102 >> GO TO 2.

P0103 >> GO TO 3.

P0102, P0103 MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2. CHECK INTAKE SYSTEM

Check the following for connection.

- Air duct
- Vacuum hoses
- Intake air passage between air duct to intake manifold

Is the inspection result normal?

YES >> GO TO 3.

NO >> Reconnect the parts. Refer to EM-191, "Exploded View".

3.CHECK MAF SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect mass air flow (MAF) sensor harness connector. 2.
- Turn ignition switch ON.
- Check the voltage between MAF sensor harness connector and ground.

	+			
MAF	sensor	_	Voltage	
Connector	Terminal			
F8	1	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4. CHECK MAF SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between MAF sensor harness connector and ECM harness connector.

	+		_	
MAF	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F8	1	F23	26	Existed

Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 5}.$ CHECK MAF SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between MAF sensor harness connector and ECM harness connector.

	+		_	
MAF	sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F8	3	F23	42	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK MAF SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between MAF sensor harness connector and ECM harness connector.

EC

D

Е

Н

M

Ν

+		_		
MAF	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F8	2	F23	37	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

7. CHECK MASS AIR FLOW SENSOR

Check the mass air flow sensor. Refer to EC-830, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace mass air flow sensor. Refer to EM-191, "Exploded View".

Component Inspection

INFOID:0000000011610932

1. CHECK MASS AIR FLOW (MAF) SENSOR-I

(II) With CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode.
- 5. Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

Monitor item	Condition	Indication (Hz)
MASS AIR FLOW SENSOR (Hz)	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Without CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the frequency between ECM harness connector terminals under the following conditions.

'	ECM				
Connector	+	_	Condition	Frequency (Hz)	
Connector	Connector Terminal				
			Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz	
F23	F00	37 42	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz	
123	2,500 rpm	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz		
			Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*	

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 2.

P0102, P0103 MAF SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2.check for the cause of uneven air flow through maf sensor

- 1. Turn ignition switch OFF.
- Check for the cause of uneven air flow through MAF sensor. Refer to the following. 2.
- Crushed air ducts
- Malfunctioning seal of air cleaner element
- Uneven dirt of air cleaner element
- Improper specification of intake air system parts

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK MAF SENSOR-II

(P)With CONSULT

- 1. Repair or replace malfunctioning part.
- 2. Start engine and warm it up to normal operating temperature.
- Connect CONSULT and select "DATA MONITOR" mode.
- Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

Monitor item	Condition	Indication (Hz)
	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
MASS AIR FLOW SENSOR (Hz)	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

- Repair or replace malfunctioning part.
- Start engine and warm it up to normal operating temperature.
- Check the frequency between ECM harness connector terminals under the following conditions.

	ECM				
Connector	+	_	Condition	Frequency (Hz)	
Terminal		minal			
			Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz	
F23 37	37 42	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz		
	42	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz		
			Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*	

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4.CHECK MAF SENSOR-III

With CONSULT

- Turn ignition switch OFF.
- 2. Disconnect MAF sensor harness connector and reconnect it again.
- Start engine and warm it up to normal operating temperature.
- Connect CONSULT and select "DATA MONITOR" mode.
- Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

EC

Α

Е

D

Н

Ν

P0102, P0103 MAF SENSOR

[MR EXCEPT FOR NISMO RS MODELS]

Monitor item	Condition	Indication (Hz)
MASS AIR FLOW SENSOR (Hz)	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

- 1. Turn ignition switch OFF.
- 2. Disconnect MAF sensor harness connector and reconnect it again.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the frequency between ECM harness connector terminals under the following conditions.

	ECM			
Connector	Connector + - Terminal		Condition	Frequency (Hz)
Connector				
			Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
F23	500	37 42	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
125		2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz	
			Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Clean or replace MAF sensor. Refer to EM-191, "Exploded View".

P0106 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0106 TC BOOST SENSOR

DTC Logic INFOID:0000000011669442

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0106	ABSL PRES SEN/CIRC (Turbocharger boost sensor circuit)	Difference between intake manifold air pressure and barometric pressure while engine stopped.	Harness or connectors TC boost sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 1 minute before conducting the next test.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Accelerate the vehicle to 60 km/h (37 MPH) in 2nd gear (M/T models), or "SPORT mode" (CVT models) and keep that status 15 seconds.
- Check DTC.

Is DTC detected?

YES >> EC-833, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

CHECK TURBOCHARGER BOOST SENSOR FITTING CONDITION

Check turbocharger boost sensor fitting condition.

Is the inspection result normal?

YES >> GO TO 2.

>> Adjust parts fitting condition. NO

2.CHECK FOR CHARGE AIR LEAK

- Start the engine and let it idle.
- 2. Listen for an charge air leak.

Is intake air leak detected?

>> Repair or replace error-detected parts. YES

NO >> GO TO 3.

3.CHECK TURBOCHARGER BOOST SENSOR HARNESS CONNECTOR CONNECTIONS

Check turbocharger boost sensor harness connector connection F75.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4.CHECK TURBOCHARGER BOOST SENSOR

Check turbocharger boost sensor. Refer to EC-834, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.

>> Replace error-detected parts. NO

${f 5}.$ CHECK TURBOCHARGER BOOST SENSOR POWER SUPPLY CIRCUIT

Turn ignition switch OFF.

EC-833 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

INFOID:0000000011669443

K

M

N

< DTC/CIRCUIT DIAGNOSIS >

2. Check the power supply of the turbocharger boost sensor.

	+		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Turbocharge	r boost sensor	-	Voltage (Approx.)
Connector	Terminal		() (
F75	2	Ground	5.0 V

Is the inspection result normal?

YES >> GO TO 6.

NO >> Perform trouble diagnosis for power supply circuit.

6. CHECK TURBOCHARGER BOOST SENSOR CIRCUIT FOR OPEN AND SHORT

Check turbocharger boost sensor circuit for open and short.

	+	-		
E	CM	Turbocharger boost sensor		Continuity
Connector	Terminal	Connector Terminal		
	11		1	
F23	13	F75	4	Existed
	29		2	

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

Component Inspection

1. CHECK TURBOCHARGER BOOST SENSOR

Turn ignition switch OFF.

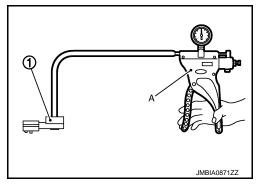
2. Remove turbocharger boost sensor with its harness connector.

3. Install pressure pump (A) to turbocharger boost sensor (1).

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

4. Turn ignition switch ON.

5. Check the voltage between ECM harness connector terminals as per the following conditions.



INFOID:0000000011677016

NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

ECM			0 1111 115 (15.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.	V 16
Connector	+	ı	• ` `	•
		ninal	(0 mbar, 0 mmHg, 0 inHg) 2.03 V	(11 /
F22 44	11	13	0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V
1 23	F23 11	13	40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	(Approx.) 2.03 V

Is the inspection result normal?

P0106 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Replace turbocharger boost sensor. Refer to EM-193, "Exploded View".

EC

Α

С

D

Е

F

G

Н

J

Κ

L

M

Ν

0

P010A MANIFOLD ABSOLUTE PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P010A MANIFOLD ABSOLUTE PRESSURE SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P010A is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to <u>EC-1057</u>, "DTC Logic".

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P010A	Manifold absolute pressure sensor circuit	 An excessively low voltage from the sensor is sent to ECM. An excessively high voltage from the sensor is sent to ECM. 	Harness or connectors (The sensor circuit is open or shorted.) Manifold absolute pressure (MAP) sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 10 seconds.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-836, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610937

1. CHECK GROUND CONNECTION

- 1. Turn ignition switch OFF.
- 2. Check ground connection M95. Refer to Ground Inspection in GI-47, "Circuit Inspection".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace ground connection.

2. CHECK MAP SENSOR POWER SUPPLY CIRCUIT

- 1. Disconnect MAP sensor harness connector.
- 2. Turn ignition switch ON.
- Check the voltage between manifold absolute pressure sensor (MAP) sensor harness connector and ground.

MAP sensor		Ground	Voltage (V)
Connector Terminal			
F76	1	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

3.CHECK MAP SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

P010A MANIFOLD ABSOLUTE PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

Е

K

N

Р

INFOID:0000000011610938

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between MAP sensor harness connector and ECM harness connector.

MAP	MAP sensor		ECM		
Connector	Terminal	Connector Terminal		Continuity	
F76	3	F23	43	Existed	

4. Also check harness for short to ground and power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

4. CHECK MAP SENSOR INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

1. Check the continuity between MAP sensor harness connector and ECM harness connector.

MAP	MAP sensor		ECM		
Connector	Terminal	Connector Terminal		Continuity	
F76	2	F23	31	Existed	

2. Also check harness for short to ground and power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5.CHECK MAP SENSOR

Refer to EC-837, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace MAP sensor.

6.CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

>> INSPECTION END

Component Inspection

1. CHECK MAP SENSOR-I

- 1. Turn ignition switch OFF.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF, wait at least 5 seconds and then turn ON.
- 4. Check the voltage between ECM harness connector terminals as follows.

	ECM	
Connector	+	ı
	Terr	minal
F23	31	43

NOTE:

- To avoid the influence of intake manifold vacuum, check the voltage 1 or more minutes past after engine is stopped.
- Because the sensor is absolute pressure sensor, output value may differ depending on atmospheric pressure and altitude.
- 5. Measure the atmospheric pressure.

NOTE:

P010A MANIFOLD ABSOLUTE PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

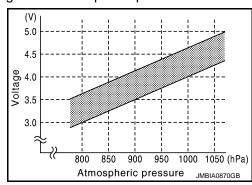
[MR EXCEPT FOR NISMO RS MODELS]

As the atmospheric pressure described on the synoptic chart is the value at sea level, compensate the pressure with the following chart.

Altitude (m)	Compensated pressure (hPa)
0	0
200	-24
400	-47
600	-70
800	-92
1000	-114
1500	-168
2000	-218

Check the manifold absolute pressure sensor value corresponding to the atmospheric pressure.

Atmospheric pressure (hPa)	Voltage (V)
800	3.1 – 3.7
850	3.3 – 3.9
900	3.5 – 4.1
950	3.8 – 4.3
1000	4.0 – 4.6
1050	4.2 – 4.8



Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace MAP sensor.

2.CHECK MAP SENSOR-II

- 1. Start engine and let it idle.
- 2. Check intake manifold vacuum.
- 3. Check the voltage between ECM harness connector terminals as follows.

	ECM	
Connector	+	-
Connector	Terr	ninal
F23	31	43

4. Confirm the difference of the voltage when engine is stopped and at idling is within the values shown in the following chart.

Intake manifold vacuum [kPa (mmHg)]	Voltage difference (V)
-40 (-300)	1.5 – 2.0
-53.3 (-400)	2.0 – 2.6
-66.7 (-500)	2.6 – 3.2
-80 (-600)	3.2 – 3.8

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace MAP sensor.

P0111 IAT SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0111 IAT SENSOR 1

DTC Logic INFOID:0000000011667574

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause	-
P0111	IAT SENSOR 1 B1 (Intake air temperature sensor 1 circuit range/performance)	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor, ECT sensor, FTT sensor, and EOT sensor) shows that the voltage signal of the IAT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the IAT sensor 1 circuit) IAT sensor 1	_

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 3.

NO >> GO TO 2.

2 PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-840, "Component Function Check".

Use the component function check to check the overall function of the IAT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-840, "Diagnosis Procedure".

3.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

2. Turn ignition switch OFF and leave the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during this procedure.

The vehicle must be cooled with the hood open.

3. Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

Check 1st trip DTC.

EC-839 Revision: 2014 October 2015 JUKE

Α

EC

D

Е

N

P0111 IAT SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is 1st trip DTC detected?

YES >> Proceed to EC-840, "Diagnosis Procedure".

NO >> INSPECTION END

Component Function Check

INFOID:0000000011667575

1.CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- Check resistance between mass air flow sensor terminals as follows.

Terminals	Condition		Resistance (kΩ)
3 and 4	Temperature [°C (°F)]	25 (77)	1,800 – 2,200

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to EC-840, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011667576

1. CHECK INTAKE AIR TEMPERATURE (IAT) SENSOR 1

Check intake air temperature sensor 1. Refer to <a>EC-840, <a>"Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace mass air flow sensor. Refer to EM-191, "Exploded View".

Component Inspection

INFOID:0000000011667577

1. CHECK INTAKE AIR TEMPERATURE SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- 3. Check resistance between mass air flow sensor terminals as per the following.

Mass air f	low sensor			
+	_	Condition		Resistance (k Ω)
Tern	ninals			
3	4	Temperature [°C (°F)]	25 (77)	1.800 - 2.200

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor. Refer to EM-191, "Exploded View".

P0112, P0113 IAT SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

F

Н

N

INFOID:0000000011610940

P0112, P0113 IAT SENSOR 1

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	С
P0112	IAT SEN/CIRCUIT- B1 (Intake air temperature sensor 1 circuit low input)	An excessively low voltage from the intake air temperature sensor 1 is sent to ECM.	Harness or connectors (Intake air temperature sensor 1 circuit is)	D
P0113	IAT SEN/CIRCUIT- B1 (Intake air temperature sensor 1 circuit high input)	An excessively high voltage from the intake air temperature sensor 1 is sent to ECM.	open or shorted.) • Intake air temperature sensor 1	Е

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-841, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK INTAKE AIR TEMPERATURE SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor (with intake air temperature sensor 1) harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between mass air flow sensor harness connector and ground.

+			Voltago	
MAF sensor		_	Voltage (Approx.)	
Connector	Terminal		(11 /	
F8	4	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK INTAKE AIR TEMPERATURE SENSOR 1 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between mass air flow sensor harness connector and ECM harness connector.

	+		_	
MAF	sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F8	4	F23	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check intake air temperature sensor 1 ground circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between mass air flow sensor harness connector and ECM harness connector.

	+		_			
MAF	sensor	ECM		ECM		Continuity
Connector	Terminal	Connector	Terminal			
F8	3	F23	42	Existed		

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK INTAKE AIR TEMPERATURE SENSOR 1

Check the intake air temperature sensor 1. Refer to EC-842, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-191, "Exploded <a href="View".

Component Inspection

INFOID:0000000011610941

1. CHECK INTAKE AIR TEMPERATURE SENSOR 1

- Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- 3. Check resistance between mass air flow sensor terminals as per the following.

Mass air f	low sensor	Condition Res			
+	_			Condition Resistance (kg	Resistance (k Ω)
Tern	ninals				
3	4	Intake air temperature [°C (°F)]	25 (77)	1.800 - 2.200	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-191, "Exploded View".

P0116 ENGINE COOLANT TEMPERATURE SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0116 ENGINE COOLANT TEMPERATURE SENSOR 1

DTC Logic INFOID:0000000011667578

DTC DETECTION LOGIC

		EC
la aaaa		

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause	(
P0116	ECT SEN/CIRC (Engine coolant temperature sensor 1 circuit range/performance)	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor, ECT sensor, FTT sensor, and EOT sensor) shows that the voltage signal of the ECT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the ECT sensor circuit) Engine coolant temperature sensor 1	[

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 3.

NO >> GO TO 2.

2 PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-844, "Component Function Check".

Use the component function check to check the overall function of the ECT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-844, "Diagnosis Procedure".

3.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

2. Turn ignition switch OFF and leave the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during this procedure.

The vehicle must be cooled with the hood open.

3. Start engine and let it idle for 20 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

Check 1st trip DTC.

EC-843 Revision: 2014 October 2015 JUKE

Α

D

Е

N

P0116 ENGINE COOLANT TEMPERATURE SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is 1st trip DTC detected?

YES >> Proceed to EC-844, "Diagnosis Procedure".

NO >> INSPECTION END

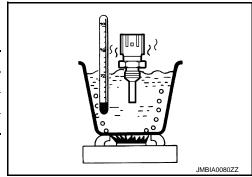
Component Function Check

INFOID:0000000011667579

1. CHECK ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect ECT sensor 1 harness connector.
- 3. Remove ECT sensor 1. Refer to CO-53, "Exploded View".
- 4. Check resistance between ECT sensor 1 terminals by heating with hot water as shown in the figure.

Terminals	Condition		Resistance (kΩ)
		20 (68)	2.37 – 2.63
1 and 2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to <u>EC-844</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000011667580

1. CHECK ENGINE COOLANT TEMPERATURE (ECT) SENSOR 1

Check ECT sensor 1. Refer to EC-844, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace ECT sensor 1. Refer to CO-53, "Exploded View".

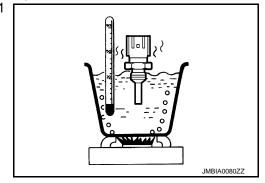
Component Inspection

INFOID:0000000011667581

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect engine coolant temperature sensor 1 harness connector.
- 3. Remove engine coolant temperature sensor 1. Refer to CO-53, "Exploded View".
- 4. Check resistance between engine coolant temperature sensor 1 terminals as per the following.

ECT:	sensor	Condition		Condition Resistance (kΩ)		D
+	-					Resistance $(k\Omega)$
Terr	minal			,		
			20 (68)	2.37 - 2.63		
1	2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00		
			90 (194)	0.236 - 0.260		



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor 1. Refer to <u>CO-53, "Exploded View"</u>.

P0117, P0118 ENGINE COOLANT TEMPERATURE SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0117, P0118 ENGINE COOLANT TEMPERATURE SENSOR 1

DTC Logic INFOID:0000000011610942

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P0117	ECT SEN/CIRC (Engine coolant temperature sensor 1 circuit low input)	An excessively low voltage from the engine coolant temperature sensor 1 is sent to ECM.	 Harness or connectors (Engine coolant temperature sensor 1 circuit is open or shorted.) Engine coolant temperature sensor 1
P0118	ECT SEN/CIRC (Engine coolant temperature sensor 1 circuit high input)	An excessively high voltage from the engine coolant temperature sensor 1 is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- 2. Check DTC.

Is DTC detected?

>> Proceed to EC-845, "Diagnosis Procedure". YES

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR 1 POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect engine coolant temperature (ECT) sensor 1 harness connector.
- Turn ignition switch ON.
- Check the voltage between ECT sensor 1 harness connector and ground.

+			Voltago	
ECT sensor 1		_	Voltage (Approx.)	
Connector	Terminal		, , ,	
F50	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2.CHECK ENGINE COOLANT TEMPERATURE SENSOR 1 GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between ECT sensor 1 harness connector and ECM harness connector.

EC-845 Revision: 2014 October 2015 JUKE

EC

Α

D

Н

INFOID:0000000011610943

N

P0117, P0118 ENGINE COOLANT TEMPERATURE SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+		_	
ECT s	ensor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F50	2	F23	45	Existed

4. Also check harness for short to ground to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK ENGINE COOLANT TEMPERATURE SENSOR 1

Check the engine coolant temperature sensor 1. Refer to <u>EC-846, "Component Inspection (Engine Coolant Temperature Sensor 1)".</u>

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace engine coolant temperature sensor 1. Refer to <u>CO-53, "Exploded View"</u>.

4. CHECK ENGINE COOLANT TEMPERATURE SENSOR 1 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between ECT sensor 1 harness connector and ECM harness connector.

+				
ECT s	ensor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F50	1	F23	35	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

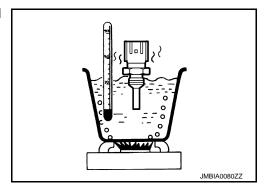
Component Inspection (Engine Coolant Temperature Sensor 1)

INFOID:0000000011610944

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR 1

- Turn ignition switch OFF.
- 2. Disconnect engine coolant temperature sensor 1 harness connector.
- 3. Remove engine coolant temperature sensor 1.
- 4. Check resistance between engine coolant temperature sensor 1 terminals by heating with hot water as shown in the figure.

ECT s	ensor 1	Condition			
+	_			Resistance	
Terr	minal				
			20 (68)	2.37 - 2.63 kΩ	
1	2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00 kΩ	
			90 (194)	0.236 - 0.260 kΩ	



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor 1. Refer to <u>CO-53, "Exploded View"</u>.

P011C IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P011C IAT SENSOR

DTC Logic INFOID:0000000011667880

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	(
P011C	CAT/IAT CRRLTN B1 (Charge air temperature/Intake air temperature correlation)	 ECM detects a state that the temperature difference between intake air temperature sensor 1 and 2 remains 20°C (68°F) or less continuously for 5 seconds or more. ECM detects a state that the difference between the temperature of intake air temperature sensor 2 and its estimated temperature calculated by ECM from intake air temperature 1 and turbocharger boost sensor remains 106°C (223°F) or more continuously for 5 seconds or more. 	,	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2 .PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-847, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

${f 1}$.CHECK INTAKE AIR TEMPERATURE SENSOR 2

Check intake air temperature sensor 2. Refer to EC-848, "Component Inspection (Intake Air Temperature Sensor 2)".

Is the inspection result normal?

YES >> GO TO 2.

>> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to EM-32, NO "Exploded View".

2.CHECK INTAKE AIR TEMPERATURE SENSOR 1

Check intake air temperature sensor 1. Refer to EC-848, "Component Inspection (Intake Air Temperature Sensor 1)".

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded View".

EC-847 Revision: 2014 October 2015 JUKE

EC

Α

Е

Н

K

INFOID:0000000011667881

M

Ν

P011C IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Component Inspection (Intake Air Temperature Sensor 1)

INFOID:0000000011667882

1. CHECK INTAKE AIR TEMPERATURE SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- 3. Check resistance between mass air flow sensor terminals as follows.

Mass air f	low sensor	Condition				
+	-			Resistance ($k\Omega$)		
Terr	ninal					
3	4	Temperature [°C (°F)]	25 (77)	1.80 – 2.20		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor (with intake air temperature sensor 1). Refer to EM-27, "Exploded View".

Component Inspection (Intake Air Temperature Sensor 2)

INFOID:0000000011667883

1. CHECK INTAKE AIR TEMPERATURE SENSOR 2

- Turn ignition switch OFF.
- 2. Disconnect turbocharger boost sensor harness connector.
- 3. Check resistance between turbocharger boost sensor terminals as follows.

Turbocharge	r boost sensor	Condition				
+	_			Resistance ($k\Omega$)		
Terr	minal					
3	4	Temperature [°C (°F)]	25 (77)	1.80 – 2.20		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor (with intake air temperature sensor 2). Refer to <u>EM-32</u>, "Exploded View".

[MR EXCEPT FOR NISMO RS MODELS]

P0122, P0123 TP SENSOR

DTC Logic INFOID:0000000011610945

DTC DETECTION LOGIC

NOTE:

If DTC P0122 or P0123 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-1057, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0122	TP SEN 2/CIRC-B1 (Throttle position sensor 2 circuit low input)	An excessively low voltage from the TP sensor 2 is sent to ECM.	Harness or connectors (TP sensor 2 circuit is open or shorted.)
P0123	TP SEN 2/CIRC-B1 (Throttle position sensor 2 circuit high input)	An excessively high voltage from the TP sensor 2 is sent to ECM.	 (TP sensor 2 circuit is open or shorted. Electric throttle control actuator (TP sensor 2)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

>> Proceed to EC-849, "Diagnosis Procedure". YES

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK THROTTLE POSITION SENSOR 2 POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect electric throttle control actuator harness connector.
- Turn ignition switch ON.
- Check the voltage between electric throttle control actuator harness connector and ground.

+			\/=\t+= ==	
Electric throttle control actuator		_	Voltage (Approx.)	
Connector	Terminal		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
F29	F29 5		5 V	

Is the inspection result normal?

>> GO TO 3. YES NO >> GO TO 2.

f 2 .CHECK THROTTLE POSITION SENSOR 2 POWER SUPPLY CIRCUIT

EC-849 Revision: 2014 October 2015 JUKE

EC

Α

D

C

Е

F

Н

INFOID:0000000011610946

M

Ν

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

	+	-		
	e control actu- tor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	5	F24	83	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE POSITION SENSOR 2 GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector

+			_	
	e control actu- tor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F29	4	F24	85	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK THROTTLE POSITION SENSOR 2 INPUT SIGNAL CIRCUIT

Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

	+	-		
	e control actu- tor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	3	F24	80	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5}.$ CHECK THROTTLE POSITION SENSOR

Check the throttle position sensor. Refer to EC-850, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

Component Inspection

INFOID:0000000011610947

1.CHECK THROTTLE POSITION SENSOR

P0122, P0123 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Perform "Throttle Valve Closed Position Learning". Refer to EC-739, "Work Procedure".
- 4. Turn ignition switch ON.
- 5. Set selector lever to D (CVT) or 1st (M/T) position.
- 6. Check the voltage between ECM harness connector terminals as per the following conditions.

ECM						
Connector	+	_	С	ondition	Voltage	
Connector	Terr	ninal				
	88	- 85	Accelerator pedal	Fully released	More than 0.36V	
F24				Fully depressed	Less than 4.75V	
F24		65		Fully released	Less than 4.75V	
	30			Fully depressed	More than 0.36V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

EC

Α

C

D

Е

F

Н

J

Κ

L

M

Ν

0

P0125 ECT SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0125 is displayed with P0116, first perform the trouble diagnosis for DTC P0116. Refer to <u>EC-843</u>, "DTC Logic".
- If DTC P0125 is displayed with P0117 or P0118, first perform the trouble diagnosis for DTC P0117, P0118. Refer to EC-845, "DTC Logic".

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0125	ECT SENSOR (Insufficient coolant tempera- ture for closed loop fuel control)	 Voltage sent to ECM from the sensor is not practical, even when some time has passed after starting the engine. Engine coolant temperature is insufficient for closed loop fuel control. 	Harness or connectors (High resistance in the circuit) Engine coolant temperature sensor 1 Multi-way control valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.CHECK ENGINE COOLANT TEMPERATURE SENSOR 1 FUNCTION

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "DATA MONITOR" mode with CONSULT.
- 3. Check that "COOLANT TEMP/S" is above 10°C (50°F).

Is the temperature above 10°C (50°F)?

YES >> INSPECTION END

NO >> GO TO 3.

3.perform dtc confirmation procedure

With CONSULT

1. Start engine and run it for 65 minutes at idle speed.

If "COOLANT TEMP/S" increases to more than -7° C (19.4°F) within 65 minutes, stop engine because the test result will be OK.

CAUTION:

Never overheat engine.

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> EC-852, "Diagnosis Procedure"

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667583

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR 1

Check engine coolant temperature sensor 1. Refer to EC-853, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace engine coolant temperature sensor 1.

P0125 ECT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

$2.\mathsf{CHECK}$ MULTI-WAY CONTROL VALVE OPERATION

When the engine is cold [lower than 64°C (147°F)] condition, grasp lower radiator hose and confirm that the engine coolant does not flow.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace water outlet (MCV). Refer to CO-53, "Exploded View".

Component Inspection

INFOID:0000000011667584

Α

EC

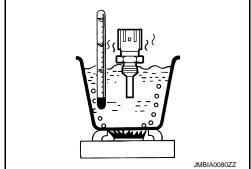
D

Е

1. CHECK ENGINE COOLANT TEMPERATURE SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect engine coolant temperature sensor 1 harness connector.
- 3. Remove engine coolant temperature sensor 1. Refer to CO-53. "Exploded View".
- 4. Check resistance between engine coolant temperature sensor 1 terminals as per the following.

ECT s	ensor 1		Resistance $(k\Omega)$	
+	_	Condition		
Terr	minal		,	
	2	Temperature [°C (°F)]	20 (68)	2.37 - 2.63
1			50 (122)	0.68 - 1.00
			90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor 1. Refer to CO-53, "Exploded View".

J

Κ

M

Ν

O

[MR EXCEPT FOR NISMO RS MODELS]

P0127 IAT SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0127	IAT SENSOR-B1 (Intake air temperature too high)	Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signal from engine coolant temperature sensor 1.	Harness or connectors (The sensor circuit is open or shorted) Intake air temperature sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

This test may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Wait until engine coolant temperature is less than 96°C (205°F)
- Turn ignition switch ON.
- Select "DATA MONITOR" mode with CONSULT.
- Check the engine coolant temperature.
- If the engine coolant temperature is not less than 96°C (205°F), turn ignition switch OFF and cool down
 engine.

NOTE:

Perform the following steps before engine coolant temperature is above 96°C (205°F).

- 2. Turn ignition switch ON.
- 3. Select "DATA MONITOR" mode with CONSULT.
- 4. Start engine.
- 5. Hold vehicle speed at more than 70 km/h (43 MPH) for 100 consecutive seconds.

CAUTION:

Always drive vehicle at a safe speed.

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-854, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667586

1.CHECK INTAKE AIR TEMPERATURE SENSOR 1

Check intake air temperature sensor 1. Refer to EC-855, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace mass air flow sensor (with intake air temperature sensor). Refer to EM-191, "Exploded View".

P0127 IAT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Component Inspection

INFOID:0000000011667587

1.CHECK INTAKE AIR TEMPERATURE SENSOR 1

- 1. Turn ignition switch OFF.
- 2. Disconnect mass air flow sensor harness connector.
- 3. Check resistance between mass air flow sensor terminals as per the following.

Mass air flow sensor					
+	-	Condition		Resistance (k Ω)	
Term	Terminals				
3	4	Temperature [°C (°F)]	25 (77)	1.800 - 2.200	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace mass air flow sensor. Refer to EM-191, "Exploded View".

EC

Α

D

Е

F

G

Н

K

L

M

Ν

0

DTC Logic

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal fluctuates according to fuel feedback control.

DTC No.	Trouble diagnosis name	DTC detecting condition		Possible Cause
P0130	A/F SENSOR1 (B1) [Air fuel ratio (A/F) sensor 1	A)	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly in the range other than approx. 2.2 V.	Harness or connectors (A/F sensor 1 circuit is open or shorted.)
	circuit	B)	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 2.2 V.	• A/F sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Let it idle for 2 minutes.
- 3. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-857, "Diagnosis Procedure".

NO-1 >> (P) With CONSULT: GO TO 3.

NO-2 >> \(\overline{\pi} \) Without CONSULT: GO TO 7.

3.CHECK AIR FUEL RATIO (A/F) SENSOR 1 FUNCTION

- 1. Select "A/F SEN1 (B1)" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Check "A/F SEN1 (B1)" indication.

Does the indication fluctuates around 2.2 V?

YES >> GO TO 4.

NO >> Proceed to EC-857, "Diagnosis Procedure".

4. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-I

- Select "A/F SEN1 (B1) P1276" of "A/F SEN1" in "DTC WORK SUPPORT" mode of "ENGINE" using CON-SULT.
- Touch "START".
- 3. When the following conditions are met, "TESTING" will be displayed on the CONSULT screen.

ENG SPEED	1,150 - 2,250 rpm (CVT) 1,150 - 3,000 rpm (M/T)
VHCL SPEED SE	More than 64 km/h (40 mph)
B/FUEL SCHDL	1.0 - 8.0 msec
Selector lever	D position (CVT) 5th position (M/T)

_	DT	C / C	IRCI	IIT	DIA	CNIC	2120	`

Turn ignition switch ON.

[MR EXCEPT FOR NISMO RS MODELS]

If "TESTING" is not displayed after 20 seconds, retry from step 2. CAUTION:	
Always drive vehicle at a safe speed.	
ls "TESTING" displayed on CONSULT screen?	ļ
YES >> GO TO 5.	
NO >> Check A/F sensor 1 function again. GO TO 3.	ļ
PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-II	
Release accelerator pedal fully. NOTE:	
Never apply brake during releasing the accelerator pedal.	
Which does "TESTING" change to? COMPLETED>>GO TO 6.	
OUT OF CONDITION>>Retry DTC CONFIRMATION PROCEDURE. GO TO 4.	
6.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B-III	
Touch "SELF-DIAG RESULT"	
Which is displayed on CONSULT screen?	
YES >> INSPECTION END	
NO >> Proceed to <u>EC-857, "Diagnosis Procedure"</u> .	
PERFORM COMPONENT FUNCTION CHECK FOR MALFUNCTION B	
Perform Component Function Check. Refer to <u>EC-857, "Component Function Check"</u> .	
Use component function check to check the overall function of the A/F sensor 1 circuit. During this chect to the trip DTC might not be confirmed.	k, a
s the inspection result normal?	
YES >> INSPECTION END	
NO >> Proceed to <u>EC-857</u> , " <u>Diagnosis Procedure</u> ".	
Component Function Check	1610949
1.PERFORM COMPONENT FUNCTION CHECK	
With GST	
 Start engine and warm it up to normal operating temperature. Drive the vehicle at a speed of 80 km/h (50 MPH) for a few minutes in the suitable gear position. Shift the selector lever to the D position (CVT) or 5th position (M/T), then release the accelerator perfully until the vehicle speed decreases to 50 km/h (31 MPH). CAUTION: Always drive vehicle at a safe speed. 	edal
NOTE: Never apply brake during releasing the accelerator pedal.	
4. Repeat steps 2 to 3 for five times.	
5. Stop the vehicle and turn ignition switch OFF.	
 Wait at least 10 seconds and restart engine. Repeat steps 2 to 3 for five times. 	
3. Stop the vehicle.	
O. Check 1st trip DTC.	
s 1st trip DTC detected?	
YES >> Proceed to <u>EC-857, "Diagnosis Procedure"</u> . NO >> INSPECTION END	
Diagnosis Procedure	1610050
	1010930
1.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY	
1. Turn ignition switch OFF.	
2. Disconnect A/F sensor 1 harness connector. 3. Turn ignition switch ON	

EC-857 Revision: 2014 October 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. Check the voltage between A/F sensor 1 harness connector and ground.

	+			
A/F se	ensor 1	_	Voltage	
Connector	Connector Terminal			
F72	4	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and IPDM E/R harness connector.

	+			
A/F se	A/F sensor 1		IPDM E/R	
Connector	Terminal	Connector	Terminal	
F72	4	E14	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check a/f sensor 1 input signal circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

		+			
Ī	A/F se	ensor 1	ECM		Continuity
Ī	Connector	Terminal	Connector	Terminal	
Ī	F72	1	F24	79	Existed
	172	2	124	74	LAISTEU

4. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

+				
A/F sensor 1		_	Continuity	
Connector	Terminal			
F72	1	Ground	Not existed	
Г/Z	2	Glound	Not existed	

+				
ECM			_	Continuity
Connecto	or	Terminal		
F24		74	Ground	Not existed
1 24	79	Glound		

5. Also check harness for short to power.

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1. Refer to <u>EM-241, "Exploded View"</u>.

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

EC

Α

C

D

Е

F

Н

. [

Κ

L

M

Ν

 \circ

DTC Logic

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal is not inordinately low.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P0131	A/F SENSOR1 (B1) [Air fuel ratio (A/F) sensor 1 circuit low voltage]	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 0 V.	 Harness or connectors (A/F sensor 1 circuit is open or shorted.) A/F sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V at idle.

>> GO TO 2.

2.CHECK A/F SENSOR FUNCTION

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Select "A/F SEN1 (B1)" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "A/F SEN1 (B1)" indication.

With GST

Follow the procedure "With CONSULT" above.

Is the indication constantly approx. 0 V?

YES >> Proceed to <u>EC-861</u>, "<u>Diagnosis Procedure</u>".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Turn ignition switch OFF, wait at least 10 seconds and then restart engine.
- Drive and accelerate vehicle to more than 40 km/h (25 MPH) within 20 seconds after restarting engine. CAUTION:

Always drive vehicle at a safe speed.

3. Maintain the following conditions for about 20 consecutive seconds.

ENG SPEED	1,000 - 3,200 rpm
VHCL SPEED SE	More than 40 km/h (25 mph)
B/FUEL SCHDL	1.5 - 9.0 msec
Selector lever	Suitable position

NOTE:

- Keep the accelerator pedal as steady as possible during the cruising.
- If this procedure is not completed within 1 minute after restarting engine at step 1, return to step 1.
- 4. Check 1st trip DTC.

With GST

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-861, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610952

Α

D

Е

Н

Ν

1. CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect A/F sensor 1 harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between A/F sensor 1 harness connector and ground.

+			
A/F sensor 1		_	Voltage
Connector	Terminal		
F72	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and IPDM E/R harness connector.

+		_		
A/F se	ensor 1	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F72	4	E14	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check a/f sensor 1 input signal circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+		-		
A/F sensor 1		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F72	1	F24	79	Existed
Γ/2	2	1 24	74	LAISIEU

 Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

+ A/F sensor 1		_	Continuity			
Connector	Terminal					
F72 1 2		Ground	Not existed			
+						
ECM		_	Continuity			
Connector	Terminal					
F24	74	Ground	Not existed			

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace air fuel ratio (A/F) sensor 1. Refer to EM-241, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

DTC Logic INFOID:0000000011610953

DTC DETECTION LOGIC

To judge the malfunction, the diagnosis checks that the A/F signal computed by ECM from the A/F sensor 1 signal is not inordinately high.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible Cause
P0132	A/F SENSOR1 (B1) [Air fuel ratio (A/F) sensor 1 circuit high voltage]	The A/F signal computed by ECM from the A/F sensor 1 signal is constantly approx. 5 V.	Harness or connectors (A/F sensor 1 circuit is open or shorted.) A/F sensor 1

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V at idle.

>> GO TO 2.

2.CHECK A/F SENSOR FUNCTION

(P)With CONSULT

- Start engine and warm it up to normal operating temperature.
- Select "A/F SEN1 (B1)" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "A/F SEN1 (B1)" indication.

Follow the procedure "With CONSULT" above.

Is the indication constantly approx. 5 V?

YES >> Proceed to EC-864, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- Turn ignition switch OFF, wait at least 10 seconds and then restart engine.
- Drive and accelerate vehicle to more than 40 km/h (25 MPH) within 20 seconds after restarting engine. **CAUTION:**

Always drive vehicle at a safe speed.

3. Maintain the following conditions for about 20 consecutive seconds.

ENG SPEED	1,000 - 3,200 rpm
VHCL SPEED SE	More than 40 km/h (25 mph)
B/FUEL SCHDL	1.5 - 9.0 msec
Selector lever	Suitable position

NOTE:

- Keep the accelerator pedal as steady as possible during the cruising.
- If this procedure is not completed within 1 minute after restarting engine at step 1, return to step
- Check 1st trip DTC.

With GST

Follow the procedure "With CONSULT" above.

EC-863 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

L

M

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is 1st trip DTC is detected?

YES >> Proceed to <u>EC-864</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610954

1.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect A/F sensor 1 harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between A/F sensor 1 harness connector and ground.

+			
A/F sensor 1		_	Voltage
Connector Terminal			
F72	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and IPDM E/R harness connector.

+		-		
A/F se	ensor 1	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F72	4	E14	36	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check a/f sensor 1 input signal circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

•		+ -		_	
-	A/F sensor 1		ECM		Continuity
-	Connector	Terminal	Connector	Terminal	
-	F72	1	F24	79	Existed
	172	2	1 24	74	LAISIEU

4. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

+			Continuity
A/F sensor 1		_	
Connector	Terminal		
F72	1	Ground	Not existed
172	2	Gloulia	

P0132 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+			-		А
E	CM	-	Continuity			
Connector	Terminal			_		EC
F24	74	Ground	Not existed			
	79			-		0
	harness for shon the name of the harness for short the harness for short the harnest for short the harness for short the harnest for	•				С
YES >> GC) TO 4. pair or replace e		oorte			D
	ERMITTENT IN		Jaris.			
Perform GI-44,	"Intermittent Inc	cident".				Е
	n result normal?	?				
) TO 5. pair or replace e	error-detected i	parts			_
_	AIR FUEL RATIO	•				F
	I ratio (A/F) sen			oded View".		
CAUTION:	, ,				0.5 (40.7%)(G
	sensor which as a concrete			eight of more than	0.5 m (19.7 in) onto a hard	
 Before insta 	lling new sens	or, clean exh	aust system th		en Sensor Thread Cleaner	
service tool)		J-43897-18 Or .	J43897-12)] an	a approved Anti-se	eize Lubricant (commercial	
,						ı
>> INS	SPECTION END)				
						J
						J
						K
						L
						M
						IVI
						Ν
						0
						Р

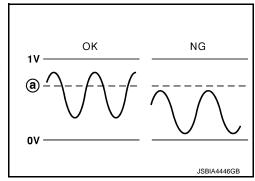
P0137 H02S2

DTC Logic

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst (manifold) causes the longer switching time. To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the maximum voltage of the sensor is sufficiently high during the various driving condition such as fuel-cut.





DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0137	HO2S2 (B1) (Heated oxygen sensor 2 circuit low voltage)	The maximum voltage from the heated oxygen sensor 2 is not reached to the specified voltage.	Harness or connectors (Heated oxygen sensor 2 circuit is open or shorted) Heated oxygen sensor 2 Fuel pressure Fuel injector Intake air leaks

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 5.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30°C (32 to 86°F).

>> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- Make sure that "COOLAN TEMP/S" indicates more than 70°C (158°F).
 If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches 70°C (158°F).
- 7. Open engine hood.
- Select "HO2S2 (B1) P1147" of "HO2S2" in "DTC WORK SUPPORT" mode of "ENGINE" using CONSULT.

P0137 H02S2

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

K

Ν

Р

INFOID:0000000011610958

9. Follow the instruction of CONSULT.

NOTE:

It will take at most 10 minutes until "COMPLETED" is displayed.

10. Touch "SELF-DIAG RESULT".

Which is displayed on CONSULT screen?

OK >> INSPECTION END

NG >> Proceed to <u>EC-868</u>, "<u>Diagnosis Procedure</u>".

CAN NOT BE DIAGNOSED>>GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

- 1. Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle).
- 2. Perform DTC CONFIRMATION PROCEDURE again.

>> GO TO 3.

5. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to <a>EC-867, <a>"Component Function Check".

NOTE:

Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-868, "Diagnosis Procedure".

Component Function Check

1.PERFORM COMPONENT FUNCTION CHECK-I

⋈Without CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 4. Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	_	Condition	Voltage
Connector	Terr	minal		
F24	84	78	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.72 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	-	Condition	Voltage
Connector	Terminal			
F24	84	78	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.72 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

< DTC/CIRCUIT DIAGNOSIS >

3.perform component function check-iii

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM			
Connector	+	_	Condition	Voltage
Connector	Terr	minal		
F24	84	78	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.72 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-868, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011610959

1. CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

- 1. Clear the mixture ratio self-learning value. Refer to EC-747, "Work Procedure".
- 2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0171. Refer to <u>EC-890, "DTC Logic"</u>.

NO >> GO TO 2.

2. CHECK HO2S2 GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
- 3. Disconnect ECM harness connector.
- 4. Check the continuity between HO2S2 harness connector and ECM harness connector.

+		-		
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	1	F24	78	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HO2S2 INPUT SIGNAL CIRCUIT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

+		-		
НО	2S2	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	2	F24	84	Existed

Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

НО	+ 2S2	_	Continuity
Connector	Terminal		
F71	F71 2		Not existed

Α

EC

D

Е

F

Н

K

M

Ν

INFOID:0000000011610960

	+			
E	СМ	_	Continuity	
Connector	Terminal			
F24	84	Ground	Not existed	

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK HEATED OXYGEN SENSOR 2

Check the heated oxygen sensor 2. Refer to EC-869, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 5.

5. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5. "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

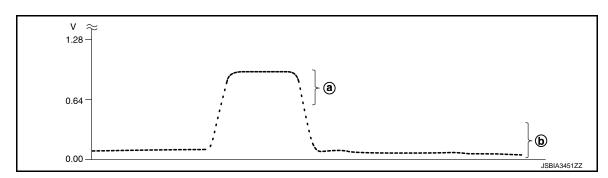
YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK HEATED OXYGEN SENSOR 2

(P)With CONSULT

- Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Select "FUEL INJECTION" in "ACTIVE TEST" mode of "ENGINE" using CONSULT, and select "HO2S2 (B1)" as the monitor item with CONSULT.
- 7. Check "HO2S2 (B1)" at idle speed when adjusting "FUEL INJECTION" to \pm 25%.



- (a) : The voltage should be above 0.72 V at least on time.
- (b) : The voltage should be below 0.28 V at least on time.

"HO2S2 (B1)" should be above 0.72 V at least once when the "FUEL INJECTION" is \pm 25%. "HO2S2 (B1)" should be below 0.28 V at least once when the "FUEL INJECTION" is \pm 25%.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

3.CHECK HEATED OXYGEN SENSOR 2-I

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 4. Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

ECM			Condition	Voltage
Connector + -				
Connector	Terminal			
F24	84	78	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4. CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM			
Connector	+	_	Condition	Voltage
Connector	Terminal			
F24	84	78	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

5. CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	-	Condition Voltage	Voltage
Connector	Terr	ninal		
F24	84	78	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

P0137 H02S2

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> GO TO 6.

6. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View". **CAUTION:**

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

EC

Α

D

Е

F

Н

K

M

L

Ν

0

P0138 HO2S2

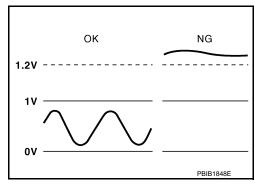
DTC Logic

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst (manifold) causes the longer switching time.

MALFUNCTION A

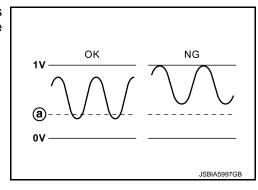
To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the voltage is unusually high during the various driving condition such as fuel-cut.



MALFUNCTION B

To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the minimum voltage of sensor is sufficiently low during the various driving condition such as fuel-cut.

(a) : 0.28 V



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition		Possible cause
HO2S2 (B1) P0138 (Heated oxygen sensor 2 circuit high voltage)	A)	An excessively high voltage from the sensor is sent to ECM.	Harness or connectors (The sensor circuit is open or shorted) Heated oxygen sensor 2	
	В)	The minimum voltage from the sensor is not reached to the specified voltage.	 Harness or connectors (The sensor circuit is open or shorted) Heated oxygen sensor 2 Fuel pressure Fuel injector 	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A

P0138 HO2S2

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

 Start engine and warm it up to normal operating temperature. Turn ignition switch OFF and wait at least 10 seconds. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load. Let engine idle for 2 minutes. Check 1st trip DTC. 	А
Is 1st trip DTC detected?	EC
YES >> Proceed to EC-874, "Diagnosis Procedure". NO-1 >> (a) With CONSULT: GO TO 3. NO-2 >> (a) Without CONSULT: GO TO 5.	С
3. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B	
NOTE: For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30°C (32 to 86°F). 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.	D
 Start engine and warm it up to normal operating temperature. Turn ignition switch OFF and wait at least 10 seconds. 	Е
4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.5. Let engine idle for 1 minute.	_
 6. Make sure that "COOLAN TEMP/S" indication is more than 70°C (158°F). If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches 70°C (158°F). 7. Open engine hood. 	F
 8. Select "HO2S2 (B1) P1146" of "HO2S2" in "DTC WORK SUPPORT" mode of "ENGINE" using CONSULT. 9. Follow the instruction of CONSULT. NOTE: 	G
It will take at most 10 minutes until "COMPLETED" is displayed. 10. Touch "SELF-DIAG RESULT".	Н
Which is displayed on CONSULT OK >> INSPECTION END NG >> Proceed to EC-874, "Diagnosis Procedure". CAN NOT BE DIAGNOSED>>GO TO 4.	I
4. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION B AGAIN	
 Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle). Perform DTC confirmation procedure again. 	J
00.70.0	K
>> GO TO 3. 5. PERFORM COMPONENT FUNCTION CHECK FOR MALFUNCTION B	
Perform component function check. Refer to EC-874, "Diagnosis Procedure".	L
NOTE:	
Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.	M
Is the inspection result normal?	
YES >> INSPECTION END NO >> Proceed to <u>EC-874</u> . " <u>Diagnosis Procedure"</u> .	Ν
Component Function Check	
1.PERFORM COMPONENT FUNCTION CHECK-I	0
Without CONSULTStart engine and warm it up to normal operating temperature.Turn ignition switch OFF and wait at least 10 seconds.	Р

- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 4. Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

[MR EXCEPT FOR NISMO RS MODELS]

ECM					
Connector	+	_	Condition	Voltage	
	Terminal				
F24	84	78	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector and ground as per the following condition.

ECM					
Connector	+	-	Condition	Voltage	
	Terminal				
F24	84 78		Keeping engine speed at idle for 10 minutes	The voltage should be above 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3.perform component function check-iii

Check the voltage between ECM harness connector and ground as per the following condition.

ECM					
Connector	+	_	Condition	Voltage	
Connector	Terminal				
F24 84 78		Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.28 V at least once during this procedure.		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-874, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011610963

1.INSPECTION START

Confirm the detected malfunction (A or B). Refer to EC-872, "DTC Logic".

Which malfunction is detected?

A >> GO TO 2.

B >> GO TO 7.

2.CHECK HO2S2 CONNECTOR FOR WATER

- 1. Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 harness connector.
- Check connectors for water.

Water should not exist.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

[MR EXCEPT FOR NISMO RS MODELS]

3.check ho2s2 ground circuit

- 1. Disconnect ECM harness connector.
- Check the continuity between HO2S2 harness connector and ECM harness connector.

+			_	
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	1	F24	78	Existed

Also check harness for short to power.

Is the inspection result normal?

>> GO TO 4. YES

NO >> Repair or replace error-detected parts.

f 4.CHECK HO2S2 INPUT SIGNAL CIRCUIT

Check the continuity between HO2S2 harness connector and ECM harness connector.

+		Í		
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	2	F24	84	Existed

Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

	+		
НО	2S2	_	Continuity
Connector	Terminal		
F71	2	Ground	Not existed

	+		
E	СМ	_	Continuity
Connector Terminal			
F24	84	Ground	Not existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

$\mathbf{5}.$ CHECK HEATED OXYGEN SENSOR 2

Check the heated oxygen sensor 2. Refer to EC-877, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 6.

6.REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

EC-875 Revision: 2014 October 2015 JUKE

EC

Е

Ν

>> INSPECTION END

7.CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

- Clear the mixture ratio self-learning value. Refer to <u>EC-747</u>, "Work Procedure".
- 2. Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0172 detected? Is it difficult to start engine?

YES >> Perform trouble diagnosis for DTC P0172. Refer to EC-872, "DTC Logic".

NO >> GO TO 8.

8. CHECK HO2S2 GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 harness connector.
- 3. Disconnect ECM harness connector.
- 4. Check the continuity between HO2S2 harness connector and ECM harness connector.

	+		_	
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	1	F24	78	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

9.CHECK HO2S2 INPUT SIGNAL CIRCUIT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

+				
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	2	F24	84	Existed

Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

	+		
НО	2S2	_	Continuity
Connector	Connector Terminal		
F71	2	Ground	Not existed

	+		
E	СМ	_	Continuity
Connector Terminal			
F24	84	Ground	Not existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

10. CHECK HEATED OXYGEN SENSOR 2

Check the heated oxygen sensor 2. Refer to EC-877, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 11.

11.REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

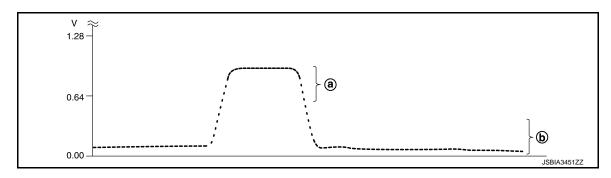
YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK HEATED OXYGEN SENSOR 2

(P)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to normal operating temperature. 2.
- Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- Select "FUEL INJECTION" in "ACTIVE TEST" mode of "ENGINE" using CONSULT, and select "HO2S2 (B1)" as the monitor item with CONSULT.
- Check "HO2S2 (B1)" at idle speed when adjusting "FUEL INJECTION" to ± 25%.



- : The voltage should be above 0.72 V at least on time.
- : The voltage should be below 0.28 V at least on time.

"HO2S2 (B1)" should be above 0.72 V at least once when the "FUEL INJECTION" is + 25%. "HO2S2 (B1)" should be below 0.28 V at least once when the "FUEL INJECTION" is – 25%.

Is the inspection result normal?

YFS >> INSPECTION END

NO >> GO TO 6.

3.CHECK HEATED OXYGEN SENSOR 2-I

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.

Let engine idle for 1 minute.

EC-877 Revision: 2014 October 2015 JUKE

EC

Α

D

INFOID:0000000011610964

Н

N

[MR EXCEPT FOR NISMO RS MODELS]

5. Check the voltage between ECM harness connector and ground as per the following condition.

ECM					
Connector	+	_	Condition	Voltage	
Connector	Terminal				
F24	84	78	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

4. CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector and ground as per the following condition.

ECM					
Connector	+	-	Condition	Voltage	
Connector	Terminal				
F24	84	78	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

5. CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector and ground as per the following condition.

ECM					
Connector	+	-	Condition	Voltage	
Connector	Terminal				
F24	84	78	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

6.REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

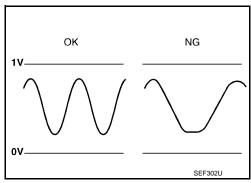
>> INSPECTION END

P0139 HO2S2

DTC Logic INFOID:0000000011610965

DTC DETECTION LOGIC

The heated oxygen sensor 2 has a much longer switching time between rich and lean than the air fuel ratio (A/F) sensor 1. The oxygen storage capacity of the three way catalyst (manifold) causes the longer switching time. To judge the malfunctions of heated oxygen sensor 2, ECM monitors whether the switching response of the sensor's voltage is faster than specified during various driving conditions such as fuel cut.



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0139	HO2S2 (B1) (Heated oxygen sensor 2 circuit slow response)	The switching time between rich and lean of a heated oxygen sensor 2 signal delays more than the specified time computed by ECM.	Harness or connectors (The sensor circuit is open or shorted) Heated oxygen sensor 2 Fuel system Intake air system

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 7.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

For better results, perform "DTC WORK SUPPORT" at a temperature of 0 to 30°C (32 to 86°F).

>> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

- Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to the normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- Make sure that "COOLAN TEMP/S" indicates more than 70°C (158°F).
- Drive the vehicle in a proper at 60 km/h (38MPH) and maintain the speed. **CAUTION:**

Always drive vehicle at a safe speed.

EC-879 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

K

N

< DTC/CIRCUIT DIAGNOSIS >

- 10. Release the accelerator pedal fully at least 5 seconds.
 - **CAUTION:**
 - Enable engine brake.
 - Always drive carefully.
 - Never apply brake when releasing the accelerator pedal.
- 11. Repeat step 9 and 10 at least 8 times.
- 12. Check the following item of "DATA MONITOR".

Data monitor item	Status
HO2 S2 DIAG1(B1)	CMPLT
HO2 S2 DIAG2(B1)	OWN ET

Is "CMPLT" displayed on CONSULT screen?

YES >> GO TO 6.

NO-1: "CMPLT" is not displayed on DIAG 1>>Perform DTC confirmation procedure again.

NO-2: "CMPLT" is not displayed on DIAG 2>>GO TO 4.

4.PERFORM DTC WORK SUPPORT

- 1. Open engine hood.
- 2. Select "HO2S2 (B1) P0139" in "DTC WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 3. Start engine and follow the instruction of CONSULT display.

NOTE:

It will take at most 10 minutes until "COMPLETED" is displayed.

Is "COMPLETED" displayed on CONSULT screen?

YES >> GO TO 6.

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE AGAIN

- 1. Turn ignition switch OFF and leave the vehicle in a cool place (soak the vehicle).
- Perform DTC confirmation procedure again.

>> GO TO 3.

6. PERFORM SELF-DIAGNOSIS

(P)With CONSULT

Perform ECM self-diagnosis.

Is DTC "P0139" detected?

YES >> Proceed to EC-881, "Diagnosis Procedure".

NO >> INSPECTION END

7. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-880, "Component Function Check".

NOTE:

Use component function check to check the overall function of the heated oxygen sensor 2 circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-881, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011610966

1.PERFORM COMPONENT FUNCTION CHECK-I

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

P0139 HO2S2

[MR EXCEPT FOR NISMO RS MODELS]

	ECM	Г	_		
Connector	+	_	Condition	Voltage	
	Terr	ninal			_
F24	84	78	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.66 V at least once during this procedure.	_
s the inspec	ction result n	ormal?			_
	INSPECTIC GO TO 2.	N END			
2.perfor	M COMPO	NENT FUN	CTION CHECK-II		
Check the v	oltage betwe	en ECM h	arness connector and ground as	s per the following condition.	
	•				_
	ECM				_
Connector	+	-	Condition	Voltage	
3011100101	Terr	ninal			_
F24	84	78	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.66 V at least once during this procedure.	
Is the inspec					
_	INSPECTIO	N END			
_	GO TO 3.				
J.PERFOR	M COMPO	NENT FUN	CTION CHECK-III		
Check the v	oltage betwe	een ECM h	arness connector and ground as	s per the following condition.	
	ECM				-
	+		Condition	Voltage	
Connector		ninal	Condition	Voltage	
	1611	IIIIai	Coasting from 80 km/h (50 MPH) in		_
F24	84	78	D position (CVT), 4th gear position (M/T)	The voltage should be above 0.66 V at least once during this procedure.	
Is the inspec	tion result r	ormal?	•	•	-
	INSPECTIO				
NO >>	Proceed to	<u>EC-868, "D</u>	iagnosis Procedure".		
Diagnosis	Procedu	re		IN	IFOID:000000001161096
1 (1545)	·⊔⊏ MIVTIII		SELF-LEARNING VALUE		
			ning value. Refer to <u>EC-747, "W</u> utes at idle speed.	Vork Procedure".	
-	-		detected? Is it difficult to start e	engine?	
•			osis for DTC P0171 or P0172.		or EC-894
	"DTC Logic				J. <u>LU 004</u>
_	GO TO 2.				
2.check	HO2S2 GRC	OUND CIRC	CUIT		
1. Turn ign	ition switch	OFF.			
			sor 2 harness connector.		
Disconn	ect ECIVI ha	rness conn	ector		

4. Check the continuity between HO2S2 harness connector and ECM harness connector.

+		_		
НО	2S2	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	1	F24	78	Existed

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HO2S2 INPUT SIGNAL CIRCUIT

Check the continuity between HO2S2 harness connector and ECM harness connector.

+				
НО	2S2	ECM		Continuity
Connector	Terminal	Connector Terminal		
F71	2	F24	84	Existed

Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

	+		
НО	2S2	_	Continuity
Connector	Terminal		
F71	2	Ground	Not existed

	+		
EC	CM	_	Continuity
Connector	Terminal		
F24 84		Ground	Not existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

>> Repair or replace error-detected parts.

4. CHECK HEATED OXYGEN SENSOR 2

Check the heated oxygen sensor 2. Refer to EC-883, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 5.

${f 5.}$ REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

[MR EXCEPT FOR NISMO RS MODELS]

Component Inspection

INFOID:0000000011610968

Α

EC

D

Е

F

Н

M

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

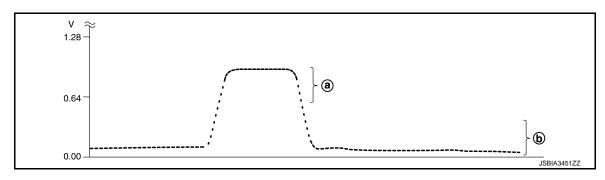
YES >> GO TO 2.

NO >> GO TO 3.

2. CHECK HEATED OXYGEN SENSOR 2

(E)With CONSULT

- 1. Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Select "FUEL INJECTION" in "ACTIVE TEST" mode of "ENGINE" using CONSULT, and select "HO2S2 (B1)" as the monitor item with CONSULT.
- 7. Check "HO2S2 (B1)" at idle speed when adjusting "FUEL INJECTION" to \pm 25%.



- (a) : The voltage should be above 0.72 V at least on time.
- (b) : The voltage should be below 0.28 V at least on time.

"HO2S2 (B1)" should be above 0.72 V at least once when the "FUEL INJECTION" is + 25%. "HO2S2 (B1)" should be below 0.28 V at least once when the "FUEL INJECTION" is - 25%.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

3.check heated oxygen sensor 2-1

Without CONSULT

- I. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

	ECM				O
Connector	+	_	Condition	Voltage	
Connector	Terminal	minal			Р
F24	84	78	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

[MR EXCEPT FOR NISMO RS MODELS]

4. CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector and ground as per the following condition.

ECM					
Connector	+	-	Condition	Voltage	
Connector	Terminal				
F24	84	78	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

5. CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector and ground as per the following condition.

ECM					
Connector	+	-	Condition	Voltage	
Connector	Terminal				
F24	84	78	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

6. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to <u>EX-5, "Exploded View"</u>.

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P014C, P014D, P015A, P015B A/F SENSOR 1

DTC Description INFOID:0000000011610969

DTC DETECTION LOGIC

To judge malfunctions, this diagnosis measures response time of the A/F signal computed by ECM from the A/ F sensor 1 signal. The time is compensated by engine operating (speed and load), fuel feedback control constant, and the A/F sensor 1 temperature index. Judgment is based on whether the compensated time (the A/F signal cycling time index) is inordinately long or not.

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P014C	A/F SENSOR1 (B1) (O2 sensor slow response - rich to lean bank 1 sen- sor 1)		
P014D	A/F SENSOR1 (B1) (O2 sensor slow response - lean to rich bank 1 sen- sor 1)	The response time of a A/F sensor 1 signal delays more than the specified time sem	Harness or connectors (The A/F sensor 1 circuit is open or short-
P015A	A/F SENSOR1 (B1) (O2 sensor delayed response - rich to lean bank 1 sensor 1)	delays more than the specified time computed by ECM.	ed.) • A/F sensor 1
P015B	A/F SENSOR1 (B1) (O2 sensor delayed response - lean to rich bank 1 sensor 1)		

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 6.

2.PERFORM DTC CONFIRMATION PROCEDURE-1

(P)With CONSULT

- Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 6. Let engine idle for 1 minute.
- Increase the engine speed up to about 3,600 rpm and keep it for 10 seconds.
- Fully release accelerator pedal and then let engine idle for about 1 minute.
- Check the items status of "DATA MONITOR" as follows.

If "PRSNT" changed to "ABSNT", refer to EC-770, "Component Function Check".

EC

Α

Е

D

Н

K

M

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Data monitor item	Status
A/F SEN1 DIAG3 (B1)	PRSNT

Is "PRSNT" displayed on CONSULT screen?

YES >> GO TO 4. NO >> GO TO 3.

3.perform dtc confirmation procedure-2 $\,$

(P)With CONSULT

Perform DTC confirmation procedure-1 again.

Is "PRSNT" displayed on CONSULT screen?

YES >> GO TO 4.

NO >> Refer to EC-770, "Component Function Check".

4. PERFORM DTC CONFIRMATION PROCEDURE-2

(I) With CONSULT

- 1. Wait for about 20 seconds at idle.
- 2. Check the items status of "DATA MONITOR" as follows.

NOTE

If "CMPLT" changed to "INCMP", refer to EC-770, "Component Function Check".

Data monitor item	Status	
A/F SEN1 DIAG1 (B1)	CMPLT	
A/F SEN1 DIAG2 (B1)	CIVIPLI	

Is "CMPLT" displayed on CONSULT screen?

YES >> GO TO 5.

NO >> Refer to EC-770, "Component Function Check".

5. PERFORM SELF-DIAGNOSIS

(P)With CONSULT

Check the "SELF-DIAG RESULT".

Is any DTC detected?

YES >> Proceed to EC-887, "Diagnosis Procedure".

NO >> INSPECTION END

6. CHECK AIR-FUEL RATIO SELF-LEARNING VALUE

With GST

- 1. Start engine and warm it up to normal operating temperature.
- Select Service \$01 with GST.
- Calculate the total value of "Short term fuel trim" and "Long term fuel trim" indications.

Is the total percentage within ±15%?

YES >> GO TO 8. NO >> GO TO 7.

7.DETECT MALFUNCTIONING PART

Check the following.

- · Intake air leaks
- Exhaust gas leaks
- Incorrect fuel pressure
- Lack of fuel
- Fuel injector
- Incorrect PCV hose connection
- PCV valve
- · Mass air flow sensor

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

>> Repair or replace malfunctioning part.

8.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON. 2.
- Turn ignition switch OFF and wait at least 10 seconds. 3.
- Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load. 4.
- Let engine idle for 1 minute.
- Increase the engine speed up to about 3,600 rpm and keep it for 10 seconds.
- Fully release accelerator pedal and then let engine idle for about 1 minute.
- Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-887, "Diagnosis Procedure". YES

>> INSPECTION END NO

Diagnosis Procedure

1. RETIGHTEN A/F SENSOR 1

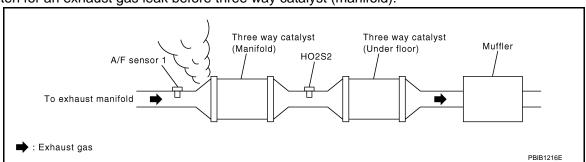
Loosen and retighten the A/F sensor 1. Refer to EM-241, "Exploded View".

>> GO TO 2.

2.CHECK EXHAUST GAS LEAK

Start engine and run it at idle.

Listen for an exhaust gas leak before three way catalyst (manifold).



Is exhaust gas leak detected?

YES >> Repair or replace.

NO >> GO TO 3.

3.CHECK FOR INTAKE AIR LEAK

Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

YES >> Repair or replace.

NO >> GO TO 4.

f 4.CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

- Clear the mixture ratio self-learning value. Refer to EC-747, "Work Procedure".
- Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171 or P172 detected? Is it difficult to start engine?

>> Perform trouble diagnosis for DTC P0171 or P0172. Refer to EC-890, "DTC Logic" or EC-894, YES "DTC Logic".

NO >> GO TO 5.

f 5.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- 1. Disconnect A/F sensor 1 harness connector.
- 2. Turn ignition switch ON.
- Check the voltage between A/F sensor 1 harness connector and ground.

EC

Α

D

INFOID:0000000011610970

Н

N

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+		
A/F se	ensor 1	_	Voltage
Connector	Terminal		
F72	4	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6. CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+		-		
A/F sensor 1		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F72	1	F24	79	Existed
1 12	2	1 24	74	LAISIEU

Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

	+		
A/F se	ensor 1	_	Continuity
Connector	Terminal		
F72	1	Ground	Not existed
172	2	Ground	Not existed

	+			
E	CM	_	Continuity	
Connector	Terminal			
F24	74	Ground	Not existed	
1 24	79	Giouna	NOT EXISTED	

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK AIR FUEL RATIO (A/F) SENSOR 1 HEATER

Refer to EC-791, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 11.

8.CHECK MASS AIR FLOW SENSOR

Refer to EC-830, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace mass air flow sensor. Refer to EM-241, "Exploded View".

9. CHECK PCV VALVE

[MR EXCEPT FOR NISMO RS MODELS] < DTC/CIRCUIT DIAGNOSIS > Refer to EC-1254, "Inspection". Is the inspection result normal? YES >> GO TO 10. NO >> Repair or replace PCV valve. Refer to EM-213, "Exploded View".

10. CHECK INTERMITTENT INCIDENT

EC

Α

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

>> GO TO 11.

NO >> Repair or replace.

11. REPLACE AIR FUEL RATIO (A/F) SENSOR 1

C

D

Replace air fuel ratio (A/F) sensor 1. Refer to EM-241, "Exploded View".

CAUTION:

YES

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Н

K

L

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0171 FUEL INJECTION SYSTEM FUNCTION

DTC Logic INFOID:0000000011610971

DTC DETECTION LOGIC

With the Air/Fuel Mixture Ratio Self-Learning Control, the actual mixture ratio can be brought closely to the theoretical mixture ratio based on the mixture ratio feedback signal from the A/F sensors 1. The ECM calculates the necessary compensation to correct the offset between the actual and the theoretical ratios.

In case the amount of the compensation value is extremely large (The actual mixture ratio is too lean.), the ECM judges the condition as the fuel injection system malfunction and lights up the MIL (2 trip detection logic).

Sensor	Input signal to ECM	ECM function	Actuator
A/F sensor 1	Density of oxygen in exhaust gas (Mixture ratio feedback signal)	Fuel injection control	Fuel injector

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0171	FUEL SYS-LEAN-B1 (Fuel injection system too lean)	 Fuel injection system does not operate properly. The amount of mixture ratio compensation is too large. (The mixture ratio is too lean.) 	 Intake air leaks A/F sensor 1 Fuel injector Exhaust gas leaks Incorrect fuel pressure Lack of fuel Mass air flow sensor Incorrect PCV hose connection

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure-i

- 1. Clear the mixture ratio self-learning value. Refer to EC-747, "Work Procedure".
- Start engine.

Is it difficult to start engine?

YES >> GO TO 3.

NO >> GO TO 4.

3.restart engine

If it is difficult to start engine, the fuel injection system has a malfunction, too.

Crank engine while depressing accelerator pedal.

NOTE:

When depressing accelerator pedal three-fourths (3/4) or more, the control system does not start the engine. Do not depress accelerator pedal too much.

Does engine start?

YES >> Proceed to EC-891, "Diagnosis Procedure".

NO >> Check exhaust and intake air leak visually.

4. PERFORM DTC CONFIRMATION PROCEDURE-II

- 1. Start engine and let it idle for at least 5 minutes.
- 2. Check 1st trip DTC.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-891</u>, "<u>Diagnosis Procedure</u>".

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE-III

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine.
- 3. Maintain the following conditions for at least 10 consecutive minutes. Hold the accelerator pedal as steady as possible.

VHCL SPEED SE 50 - 120 km/h (31 - 75 MPH)

CAUTION:

Always drive vehicle at a safe speed.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-891</u>, "<u>Diagnosis Procedure</u>".

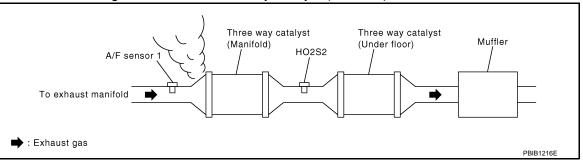
NO >> INSPECTION END

Diagnosis Procedure

1. CHECK EXHAUST GAS LEAK

Start engine and run it at idle.

Listen for an exhaust gas leak before three way catalyst (manifold).



Is exhaust gas leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 2.

2.CHECK FOR INTAKE AIR LEAK

- 1. Listen for an intake air leak after the mass air flow sensor.
- Check PCV hose connection.

Intake air leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 3.

3.check a/f sensor 1 input signal circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect corresponding A/F sensor 1 harness connector.
- 3. Disconnect ECM harness connector.
- Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+		-		
A/F sensor 1		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F72	1	F24	79	Existed
172	2	124	74	LXISIEU

Revision: 2014 October EC-891 2015 JUKE

EC

Α

D

Е

INFOID:0000000011610972

Н

L

Ν

0

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

5. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

	+			
A/F se	ensor 1	_	Continuity	
Connector	Terminal	Ī		
F72	1	Ground	Not existed	
172	2	Giodila	Not existed	

	+			
E	СМ	_	Continuity	
Connector	Terminal			
F24	79	Ground	Not existed	
1 24	74	Glound	NOT EXISTED	

6. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK FUEL PRESSURE

Check fuel pressure. Refer to EC-756, "Work Procedure".

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check fuel hoses and fuel tubes for clogging. Refer to <a>EM-202, "Exploded View".

Is the inspection result normal?

YES >> Replace "fuel filter and fuel pump assembly". Refer to <u>FL-5, "2WD : Exploded View"</u> (2WD) or <u>FL-9, "AWD : Exploded View"</u> (AWD).

NO >> Repair or replace error-detected parts.

6.CHECK MASS AIR FLOW SENSOR

(P)With CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode.
- 5. Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

Monitor item	Condition	Indication (Hz)
MASS AIR FLOW SENSOR (Hz)	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

- 1. Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the frequency between ECM harness connector terminals under the following conditions.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

ECM					
Connector	+	_	Condition	Frequency (Hz)	
Connector Terminal		minal			
F23 37 42	27 42	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz		
		Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz		
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz			
			Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*	

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or grounds. Refer to <u>EC-828</u>. "<u>DTC Logic</u>".

7. CHECK FUNCTION OF FUEL INJECTOR

(P)With CONSULT

- Start engine.
- Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Make sure that each circuit produces a momentary engine speed drop.

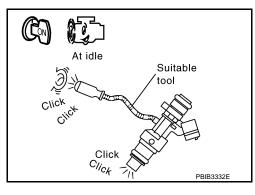
- 1. Let engine idle.
- 2. Listen to each fuel injector operating sound.

Clicking noise should be heard.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to <u>GI-44, "Intermittent Incident"</u>.

NO >> Perform trouble diagnosis for "FUEL INJECTOR", refer to <u>EC-1203</u>, "Component Function Check".



EC

Α

D

Е

F

Н

ı

J

K

Ν

0

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0172 FUEL INJECTION SYSTEM FUNCTION

DTC Logic INFOID:000000011610973

DTC DETECTION LOGIC

With the Air/Fuel Mixture Ratio Self-Learning Control, the actual mixture ratio can be brought closely to the theoretical mixture ratio based on the mixture ratio feedback signal from the A/F sensors 1. The ECM calculates the necessary compensation to correct the offset between the actual and the theoretical ratios.

In case the amount of the compensation value is extremely large (The actual mixture ratio is too rich.), the ECM judges the condition as the fuel injection system malfunction and lights up the MIL (2 trip detection logic).

Sensor Input signal to ECM		ECM function	Actuator
A/F sensor 1	Density of oxygen in exhaust gas (Mixture ratio feedback signal)	Fuel injection control	Fuel injector

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0172	FUEL SYS-RICH-B1 (Fuel injection system too rich)	Fuel injection system does not operate properly. The amount of mixture ratio compensation is too large. (The mixture ratio is too rich.)	A/F sensor 1 Fuel injector Exhaust gas leaks Incorrect fuel pressure Mass air flow sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE-I

- 1. Clear the mixture ratio self-learning value. Refer to EC-747, "Work Procedure".
- 2. Start engine.

Is it difficult to start engine?

YES >> GO TO 3.

NO >> GO TO 4.

3.restart engine

If it is difficult to start engine, the fuel injection system has a malfunction, too.

Crank engine while depressing accelerator pedal.

NOTE:

When depressing accelerator pedal three-fourths (3/4) or more, the control system does not start the engine. Do not depress accelerator pedal too much.

Does engine start?

YES >> Proceed to EC-895, "Diagnosis Procedure".

NO >> Check exhaust and intake air leak visually.

4. PERFORM DTC CONFIRMATION PROCEDURE-II

- Start engine and let it idle for at least 5 minutes.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-895, "Diagnosis Procedure".

NO >> GO TO 5.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

5. PERFORM DTC CONFIRMATION PROCEDURE-III

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine.
- 3. Maintain the following conditions for at least 10 consecutive minutes. Hold the accelerator pedal as steady as possible.

EC

D

Е

F

Н

K

M

Ν

Р

Α

VHCL SPEED SE 50 - 120 km/h (31 - 75 MPH)

CAUTION:

Always drive vehicle at a safe speed.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-895, "Diagnosis Procedure".

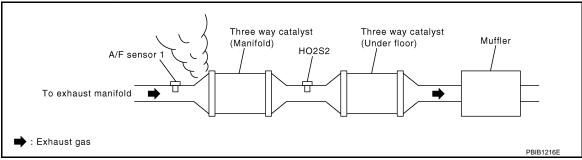
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610974

1. CHECK EXHAUST GAS LEAK

- 1. Start engine and run it at idle.
- Listen for an exhaust gas leak before three way catalyst (manifold).



Is exhaust gas leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 2.

2. CHECK FOR INTAKE AIR LEAK

Listen for an intake air leak after the mass air flow sensor.

Intake air leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 3.

3.CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect corresponding A/F sensor 1 harness connector.
- 3. Disconnect ECM harness connector.
- Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+		-		
A/F sensor 1		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F72	1	F24	79	Existed
F1Z	2	Γ2 4	74	Existed

5. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

Revision: 2014 October EC-895 2015 JUKE

Not existed

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+ ensor 1 Terminal	_	Continuity
F72	1 2	Ground	Not existed
	+		
E	CM	_	Continuity
Connector	Terminal		

6. Also check harness for short to power.

79

74

Is the inspection result normal?

YES >> GO TO 4.

F24

NO >> Repair or replace error-detected parts.

4. CHECK FUEL PRESSURE

Check fuel pressure. Refer to EC-756, "Work Procedure".

Is the inspection result normal?

YES >> GO TO 6. NO >> GO TO 5.

5. DETECT MALFUNCTIONING PART

Check fuel hoses and fuel tubes for clogging. Refer to EM-202, "Exploded View".

Ground

Is the inspection result normal?

YES >> Replace "fuel filter and fuel pump assembly". Refer to <u>FL-5, "2WD : Exploded View"</u> (2WD) or <u>FL-9, "AWD : Exploded View"</u> (AWD).

NO >> Repair or replace error-detected parts.

6.CHECK MASS AIR FLOW SENSOR

(P)With CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode.
- 5. Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

Monitor item	Condition	Indication (Hz)
MASS AIR FLOW SENSOR (Hz)	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

♥Without CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the frequency between ECM harness connector terminals under the following conditions.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

ECM					
Connector	connector + - Terminal		Condition	Frequency (Hz)	
Connector					
F23 37 42		Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz		
	27	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz		
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz			
		Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*		

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or grounds. Refer to EC-828. "DTC Logic".

7. CHECK FUNCTION OF FUEL INJECTOR

(P)With CONSULT

- Start engine.
- Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Make sure that each circuit produces a momentary engine speed drop.

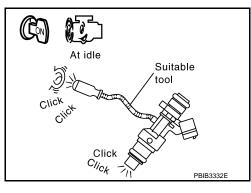
- 1. Let engine idle.
- 2. Listen to each fuel injector operating sound.

Clicking noise should be heard.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to <u>GI-44, "Intermittent Incident"</u>.

NO >> Perform trouble diagnosis for "FUEL INJECTOR", refer to EC-1203, "Component Function Check".



EC

Α

D

Е

F

Н

J

K

В. Л

Ν

0

P0181 FTT SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition		Possible cause
		A)	Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signals from ECT sensor and intake air temperature sensor.	Harness or connectors (The FTT sensor circuit is open or shorted) FTT sensor
P0181	FTT SENSOR (Fuel temperature sensor a circuit range/performance)	В)	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor, ECT sensor, EOT sensor, and FTT sensor) shows that the voltage signal of the FTT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	Harness or connectors (High or low resistance in the FTT sensor circuit) FTT sensor

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 7.

NO >> GO TO 2.

2.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 3.

3.perform dtc confirmation procedure for malfunction a-i

- 1. Turn ignition switch ON and wait at least 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-900, "Diagnosis Procedure".

NO >> GO TO 4.

4.CHECK ENGINE COOLANT TEMPERATURE

(II) With CONSULT

- Select "COOLANT TEMP/S" in "DATA MONITOR" with CONSULT.
- 2. Check "COOLANT TEMP/S" value.

Follow the procedure "With CONSULT" above.

"COOLANT TEMP/S" less than 60°C (140°F)?

YES >> INSPECTION END

NO >> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE FOR MALFUNCTION A-II

(II) With CONSULT

1. Cool engine down until "COOLANT TEMP/S" is less than 60°C (140°F).

P0181 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Wait at least 10 seconds. Check 1st trip DTC. Α Follow the procedure "With CONSULT" above. Is 1st trip DTC detected? EC YES >> Proceed to EC-900, "Diagnosis Procedure". NO >> GO TO 6. $oldsymbol{6}$ PERFORM COMPONENT FUNCTION CHECK (FOR MALFUNCTION B) Perform component function check. Refer to EC-899, "Component Function Check". D Use the component function check to check the overall function of the FTT sensor circuit. During this check, a 1st trip DTC might not be confirmed. Is the inspection result normal? Е YES >> INSPECTION END NO >> Proceed to EC-900, "Diagnosis Procedure". / .PRECONDITIONING If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test. Turn ignition switch OFF and wait at least 10 seconds. Turn ignition switch ON. Turn ignition switch OFF and wait at least 10 seconds. **TESTING CONDITION:** Before performing the following procedure, do not add fuel. Before performing the following procedure, check that fuel level is between 1/4 and 4/4. Before performing the following procedure, confirm that battery voltage is 11 V or more at idle. >> GO TO 8. 8 PERFORM DTC CONFIRMATION PROCEDURE B Move the vehicle to a cool place. NOTE: Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F). Turn ignition switch OFF and leave the vehicle for 12 hours. **CAUTION:** Never turn ignition switch ON during this procedure. The vehicle must be cooled with the hood open. 3. Start engine and let it idle for 5 minutes or more. **CAUTION:** Never turn ignition switch OFF during idling. Check 1st trip DTC. Is 1st trip DTC detected? N YES >> Proceed to EC-900, "Diagnosis Procedure". NO >> INSPECTION END Component Function Check INFOID:0000000011667589 1. CHECK FUEL TANK TEMPERATURE (FTT) SENSOR Turn ignition switch OFF. Р Disconnect fuel level sensor unit and fuel pump harness connector. 2. Remove fuel level sensor unit. Refer to FL-6, "2WD: Removal and Installation" (2WD models), FL-10,

"AWD: Removal and Installation" (AWD models).

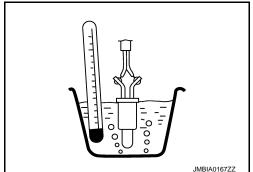
P0181 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. Check resistance between fuel level sensor unit and fuel pump terminals by heating with hot water as shown in the figure.

Terminals	Condition	Resistance ($k\Omega$)	
4 and 5	Temperature [°C (°F)]	20 (68)	2.3 – 2.7
	remperature [O (1)]	50 (122)	0.79 - 0.90



Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to EC-900, "Diagnosis Procedure".

2. CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-900, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011667590

1. INSPECTION START

Confirm the detected malfunction (A or B). Refer to EC-898, "DTC Logic".

Which malfunction is detected?

A >> GO TO 2.

B >> GO TO 5.

2. CHECK FUEL TANK TEMPERATURE SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit and fuel pump harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between fuel level sensor unit and fuel pump harness connector and ground.

Fuel level sensor unit and fuel pump		Ground	Voltage
Connector	Terminal	Ground	voltage
B46	4	Ground	Approx. 5 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

${f 3.}$ CHECK FUEL TANK TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between fuel tank temperature sensor harness connector and ECM harness connector.

Fuel level sensor unit and fuel pump		ECM		Continuity
Connector	Terminal	Connector	Terminal	
B46	4	E19	128	Existed

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK FUEL TANK TEMPERATURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.

P0181 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Check the continuity between fuel level sensor unit and fuel pump harness connector and ECM harness connector.

Fuel level sensor	unit and fuel pump	ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B46	5	E19	148	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connector.

${f 5.}$ CHECK FUEL TANK TEMPERATURE SENSOR

Check fuel tank temperature sensor. Refer to EC-901, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

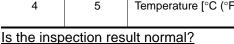
NO >> Replace fuel level sensor unit and fuel pump. Refer to FL-6, "2WD: Removal and Installation" (2WD models), FL-10, "AWD: Removal and Installation" (AWD models).

Component Inspection

1. CHECK FUEL TANK TEMPERATURE SENSOR

- 1. Turn ignition switch OFF.
- Remove fuel level sensor unit. Refer to FL-6, "2WD: Removal and Installation" (2WD models), FL-10, "AWD : Removal and Installation" (AWD models).
- Check resistance between "fuel level sensor unit and fuel pump" terminals by heating with hot water as shown in the figure.

Mass air flow sensor				
+	-	Condition		Resistance ($k\Omega$)
Terminals				
4	5	Temperature [°C (°F)]	20 (68)	2.3 - 2.7 kΩ
	3	remperature [C (1)]	50 (122)	0.79 - 0.90 kΩ



>> INSPECTION END

YES

NO

>> Replace fuel level sensor unit and fuel pump. Refer to FL-6, "2WD: Removal and Installation" (2WD models), FL-10, "AWD: Removal and Installation" (AWD models).

JMBIA0167ZZ

EC

Α

D

Е

INFOID:0000000011667591

K

M

N

Р

P0182, P0183 FTT SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0182	FTT_SEN/CIRCUIT (Fuel temperature sensor "A" circuit low)	An excessively low voltage from the sensor is sent to ECM.	Harness or connectors (The sensor circuit is open or shorted.)
P0183	FTT_SEN/CIRCUIT (Fuel temperature sensor "A" circuit high)	An excessively high voltage from the sensor is sent to ECM.	Fuel tank temperature sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-902, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667593

1. INSPECTION START

Confirm the detected malfunction (A or B). Refer to EC-898, "DTC Logic".

Which malfunction is detected?

A >> GO TO 2.

B >> GO TO 5.

2.CHECK FUEL TANK TEMPERATURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit and fuel pump harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between fuel level sensor unit and fuel pump harness connector and ground.

Fuel level sensor unit and fuel pump		Ground	Voltage
Connector	Terminal	Ground	voltage
B46	4	Ground	Approx. 5 V

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 3.

3.CHECK FUEL TANK TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.

P0182, P0183 FTT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

EC

Е

F

N

Р

- 2. Disconnect ECM harness connector.
- Check the continuity between fuel tank temperature sensor harness connector and ECM harness connector

Fuel level sensor unit and fuel pump		ЕСМ		Continuity
Connector	Terminal	Connector Terminal		
B46	4	E19	128	Existed

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK FUEL TANK TEMPERATURE SENSOR GROUND CIRCUIT FOR OPEN AND SHORT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between fuel level sensor unit and fuel pump harness connector and ECM harness connector.

Fuel level sensor unit and fuel pump		ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B46	5	E19	148	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connector.

5.CHECK FUEL TANK TEMPERATURE SENSOR

Check fuel tank temperature sensor. Refer to EC-901, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace fuel level sensor unit and fuel pump. Refer to <u>FL-6</u>, "2WD : Removal and Installation" (2WD models), <u>FL-10</u>, "AWD : Removal and Installation" (AWD models).

Component Inspection

1. CHECK FUEL TANK TEMPERATURE SENSOR

- 1. Turn ignition switch OFF.
- 2. Remove fuel level sensor unit. Refer to <u>FL-6, "2WD : Removal and Installation"</u> (2WD models), <u>FL-10, "AWD : Removal and Installation"</u> (AWD models).
- 3. Check resistance between "fuel level sensor unit and fuel pump" terminals by heating with hot water as shown in the figure.

Mass air f	low sensor	Condition		Resistance (kΩ)
+	_			
Term	ninals			
4	5	Temperature [°C (°F)]	20 (68)	2.3 - 2.7 kΩ
4	5	remperature [C (F)]	50 (122)	0.79 - 0.90 kΩ

JMRIA016777

INFOID:0000000011667594

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace fuel level sensor unit and fuel pump. Refer to FL-6, "2WD : Removal and Installation" (2WD models), FL-10, "AWD : Removal and Installation" (AWD models).

Revision: 2014 October EC-903 2015 JUKE

P0190, P0192, P0193 FRP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

INFOID:0000000011667887

P0190, P0192, P0193 FRP SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0193 is displayed with DTC P0190 or P119C, perform the trouble diagnosis for DTC P0190 or P119C. Refer to <u>EC-694, "DTC Index"</u>.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0190	FUEL PRES SEN/CIRCUIT (Fuel rail pressure sensor circuit low input and high in- put)	Signal voltage from the fuel rail pressure sensor remains at more than 4.84 V / less than 0.2 V for 5 seconds or more.	Harness or connectors
P0192	FRP SEN/CIRC (Fuel rail pressure sensor circuit low input)	Signal voltage from the fuel rail pressure sensor remains at less than 0.37 V for 5 seconds or more.	 (Fuel rail pressure sensor circuit is open or shorted.) Fuel rail pressure sensor Sensor power supply 2
P0193	FRP SEN/CIRC (Fuel rail pressure sensor circuit high input)	Signal voltage from the fuel rail pressure sensor remains at more than 3.46 V for 5 seconds or more.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine ON and wait at least 60 seconds.
- Check DTC or 1st trip DTC.

Is DTC or 1st trip DTC detected?

YES >> Proceed to EC-904, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

NOTE:

Turning the ignition switch ON with FRP sensor harness connector disconnected causes ECM to detect DTC P0190. Be sure to erase the DTC when the diagnosis procedure.

1. CHECK FUEL RAIL PRESSURE (FRP) SENSOR POWER SUPPLY-I

- 1. Turn ignition switch OFF.
- 2. Disconnect FRP sensor connector.
- Turn ignition switch ON.
- Check the voltage between FRP sensor harness connector terminals.

FRP sensor				
Connector	+	_	Voltage (Approx.)	
Connector	tern	ninal	(11 - 7	
F7	1	3	5 V	

P0190, P0192, P0193 FRP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Inspection result normal?

YES >> GO TO 6.

NO >> GO TO 2.

2.CHECK FRP SENSOR POWER SUPPLY-II

Check the voltage between FRP sensor harness connector and the ground.

+			Maltana	
FRP sensor		_	Voltage (Approx.)	
Connector	Terminal		, , ,	
F7	1	Ground	5 V	

Is inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.check sensor power supply 2 circuit

Perform EC-1239, "Diagnosis Procedure".

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

>> Repair or replace error-detected parts. NO

4. CHECK FRP SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between FRP sensor harness connector and ECM harness connector.

	+		-	
FRP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	3	F23	13	Existed

4. Also check harness for short to power.

Is inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and the ground.

ECM		Ground	Continuity	
Connector	Terminal	Glound	Continuity	
	9			
F23	10		Existed	
	50			
F24	60	Ground		
Γ2 4	110	Giodila		
	147			
E19	149			
	152			

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

EC-905 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

Ν

Р

P0190, P0192, P0193 FRP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

6. CHECK FRP SENSOR SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between FRP sensor harness connector and ECM harness connector.

+		_		
FRP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	2	F23	25	Existed

4. Also check harness for short to ground and to power.

Is inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7. CHECK FRP SENSOR

Check the FRP sensor. Refer to EC-906, "Component Inspection".

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

Component Inspection

INFOID:0000000011667888

1. CHECK FRP SENSOR

(P)WITH CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect harness connector disconnected.
- 3. Start the engine.
- 4. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 5. Check that the "FUEL PRES SEN V" indication.

Monitor Item	Condition	Values/Status
FUEL PRES SEN V	Engine speed: Idle	1,140 – 1,460 mV
	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

NWITHOUT CONSULT

- 1. Turn ignition switch OFF.
- Reconnect harness connector disconnected.
- 3. Start the engine.
- 4. Check FRP sensor signal voltage.

	ECM			
Connector	+	_	Condition	Value (Approx.)
Connector	Tern	ninal		,
F23	25	13	[Engine is running]Warm-up conditionIdle speed	1.14– 1.46 V
F23	25	13	[Engine is running]Warm-up conditionRevving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Replace FRP sensor. Refer to EM-207, "Exploded View".

P0196 EOT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0196 EOT SENSOR

DTC Logic INFOID:0000000011667780

DTC DETECTION LOGIC

NOTE:

If DTC P0196 is displayed with DTC P0197 or P0198, first perform the trouble diagnosis for DTC P0197 or P0198. Refer to EC-911, "DTC Logic".

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition		Possible cause
		A)	Rationally incorrect voltage from the sensor is sent to ECM, compared with the voltage signals from EOT sensor and intake air temperature sensor.	Harness or connectors (The EOT sensor circuit is open or shorted) EOT sensor
P0196	EOT SENSOR (Engine oil temperature sensor range/performance)	B)	The comparison result of signals transmitted to ECM from each temperature sensor (IAT sensor, ECT sensor, FTT sensor, and EOT sensor) shows that the signal voltage of the EOT sensor is higher/lower than that of other temperature sensors when the engine is started with its cold state.	 Harness or connectors (High or low resistance in the EOT sensor circuit) EOT sensor

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 6.

NO >> GO TO 2.

2.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 3.

${f 3.}$ PERFORM DTC CONFIRMATION PROCEDURE FOR MULFUNCTION A-I

- Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and let it idle for 5 minutes and 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-909, "Diagnosis Procedure".

NO >> GO TO 4.

f 4 .PERFORM DTC CONFIRMATION PROCEDURE FOR MULFUNCTION A-II

(P)With CONSULT

- Select "DATA MONITOR" mode with CONSULT.
- Check that "COOLANT TEMP/S" indicates above 70°C (158°F). If it is above 70°C (158°F), go to the following steps.

Α

EC

Е

D

Н

M

Ν

Р

EC-907 Revision: 2014 October 2015 JUKE

P0196 EOT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

If it is below 70°C (158°F), warm engine up until "COOLANT TEMP/S" indicates more than 70°C (158°F). Then perform the following steps.

- 3. Turn ignition switch OFF and soak the vehicle in a cool place.
- 4. Turn ignition switch ON.

NOTE:

Do not turn ignition switch OFF until step 8.

- Select "DATA MONITOR" mode with CONSULT.
- Check the following.

COOLANT TEMP/S	Below 40°C (104°F)
INT/A TEMP SE	Below 40°C (104°F)
Difference between "COOLANT TEMP/S" and "INT/A TEMP SE"	Within 6°C (11°F)

If they are within the specified range, perform the following steps.

If they are out of the specified range, soak the vehicle to meet the above conditions. Then perform the following steps.

NOTE:

- Do not turn ignition switch OFF.
- If it is supposed to need a long period of time, do not deplete the battery.
- 7. Start engine and let it idle for 5 minutes.
- 8. Check 1st trip DTC.

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-909, "Diagnosis Procedure".

NO >> GO TO 5.

5.PERFORM COMPONENT FUNCTION CHECK (FOR MULFUNCTION B)

Perform component function check. Refer to EC-909, "Component Function Check".

NOTE:

Use the component function check to check the overall function of the EOT sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-909, "Diagnosis Procedure".

6.PRECONDITIONING

If DTC CONFIRMATION PROCEDURE has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 7.

7. PERFORM DTC CONFIRMATION PROCEDURE B

Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

2. Turn ignition switch OFF and leave the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during this procedure.

NOTE:

The vehicle must be cooled with the hood open.

3. Start engine and let it idle for 5 minutes or more.

< DTC/CIRCUIT DIAGNOSIS >

CAUTION:

Never turn ignition switch OFF during idling.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-909, "Diagnosis Procedure". YES

NO >> INSPECTION END

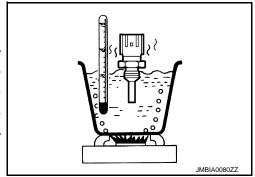
Component Function Check

INFOID:0000000011667781

1.CHECK ENGINE OIL TEMPERATURE (EOT) SENSOR

- Turn ignition switch OFF.
- 2. Disconnect EOT sensor harness connector.
- 3. Remove EOT sensor. Refer to EM-285, "Exploded View".
- Check resistance between EOT sensor terminals by heating with hot water as shown in the figure.

Terminals	Condition	Resistance ($k\Omega$)	
	Temperature [°C (°F)]	20 (68)	2.37 – 2.63
1 and 2		50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to EC-909, "Diagnosis Procedure".

2.CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YFS >> INSPECTION END

>> Proceed to EC-909, "Diagnosis Procedure". NO

Diagnosis Procedure

INFOID:0000000011667782

$oldsymbol{1}$.CHECK ENGINE OIL TEMPERATURE SENSOR

Check engine oil temperature sensor. Refer to EC-909, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace engine oil temperature sensor. Refer to EM-285, "Exploded View". NO

Component Inspection

INFOID:0000000011667783

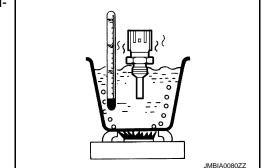
1. CHECK ENGINE OIL TEMPERATURE SENSOR

- Turn ignition switch OFF.
- 2. Disconnect engine oil temperature sensor harness connector.
- 3. Remove engine oil temperature sensor. Refer to EM-285, "Exploded View".
- Check resistance between engine oil temperature sensor terminals by heating with hot water as shown in the figure.

Terminals	Condition	Resistance ($k\Omega$)	
		20 (68)	2.37 - 2.63
1 and 2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00
		90 (194)	0.236 - 0.260

Is the inspection result normal?

YES >> INSPECTION END



EC

Α

D

N

P0196 EOT SENSOR

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Replace engine oil temperature sensor. Refer to EM-285, "Exploded View".

P0197, P0198 EOT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0197, P0198 EOT SENSOR

DTC Logic INFOID:0000000011610978

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC Detecting Condition	Possible Cause
P0197	EOT SEN/CIRC (Engine oil temperature sensor circuit low input)	An excessively low voltage from the engine oil temperature sensor is sent to ECM.	Harness or connectors (EOT sensor circuit is open or shorted.)
P0198	EOT SEN/CIRC (Engine oil temperature sensor circuit high input)	An excessively high voltage from the engine oil temperature sensor is sent to ECM.	Engine oil temperature sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-911, "Diagnosis Procedure". YES

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK ENGINE OIL TEMPERATURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect engine oil temperature (EOT) sensor harness connector.
- Turn ignition switch ON.
- Check the voltage between EOT sensor harness connector and ground.

	+		Valtage
EOT sensor		_	Voltage (Approx.)
Connector Terminal			, , ,
F48	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK ENGINE OIL TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EOT sensor harness connector and ECM harness connector.

EC-911 Revision: 2014 October 2015 JUKE

EC

Α

D

Н

N

Р

INFOID:0000000011610979

< DTC/CIRCUIT DIAGNOSIS >

+		_		
EOT s	ensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F48	1	F23	22	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check eot sensor ground circuit

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between EOT sensor harness connector and ECM harness connector.

+		1		
EOT s	ensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	,
F48	2	F23	45	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK ENGINE OIL TEMPERATURE SENSOR

Check the engine oil temperature sensor. Refer to EC-912, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace engine oil temperature sensor. Refer to EM-285, "Exploded View".

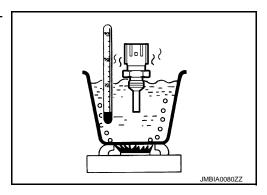
Component Inspection

INFOID:0000000011610980

1. CHECK ENGINE OIL TEMPERATURE SENSOR

- 1. Turn ignition switch OFF.
- Disconnect engine oil temperature sensor harness connector.
- 3. Remove engine oil temperature sensor.
- 4. Check resistance between engine oil temperature sensor terminals by heating with hot water as shown in the figure.

Engine oil temperature sensor		0		
+	_	Condition		Resistance (kΩ)
Terminal				
			20 (68)	2.37 - 2.63
1	2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00
	(/)	90 (194)	0.236 - 0.260	



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine oil temperature sensor. Refer to EM-285, "Exploded View".

P0201, P0202, P0203, P0204 FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0201, P0202, P0203, P0204 FUEL INJECTOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0201	INJECTOR CIRC-CYL1 (No.1 fuel injector circuit)	ECM detects No. 1 injector circuit is open or shorted.	
P0202	INJECTOR CIRC-CYL2 (No. 2 fuel injector circuit)	ECM detects No. 2 injector circuit is open or shorted.	The fuel injector circuit is open or shorted Fuel injector.
P0203	INJECTOR CIRC-CYL3 (No. 3 fuel injector circuit)	ECM detects No. 3 injector circuit is open or shorted.	Fuel injector ECM
P0204	INJECTOR CIRC-CYL4 (No. 4 fuel injector circuit)	ECM detects No. 4 injector circuit is open or shorted.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, conform that battery voltage is 11 V or more at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Start the engine and let it idle at least 30 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-913, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. PERFORM TROUBLE DIAGNOSIS FOR INJECTOR

Perform trouble diagnosis for injector. Refer to EC-1203, "Component Function Check".

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

EC

Α

D

Е

F

Н

K

M

Ν

INFOID:0000000011610982

Р

P0222, P0223 TP SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0222 or P0223 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to <u>EC-937</u>, "<u>DTC Logic"</u>.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0222	TP SEN 1/CIRC-B1 (Throttle position sensor 1 circuit low input)	An excessively low voltage from the TP sensor 1 is sent to ECM.	Harness or connectors (TP sensor 1 circuit is open or shorted.)
P0223	TP SEN 1/CIRC-B1 (Throttle position sensor 1 circuit high input)	An excessively high voltage from the TP sensor 1 is sent to ECM.	Electric throttle control actuator (TP sensor 1)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-914, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610984

1. CHECK THROTTLE POSITION SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between electric throttle control actuator harness connector and ground.

	+		
Electric throttle	control actuator	_	Voltage (Approx.)
Connector	Connector Terminal		, , ,
F29	5	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK THROTTLE POSITION SENSOR 1 POWER SUPPLY CIRCUIT

P0222, P0223 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness con-

+			_	
Electric throttle control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	5	F24	83	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE POSITION SENSOR 1 GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness con-

+		-		
Electric throttle control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	4	F24	85	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

f 4.CHECK THROTTLE POSITION SENSOR 1 INPUT SIGNAL CIRCUIT

Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

	+		_	
Electric throttle control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	6	F24	88	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

${f 5.}$ CHECK THROTTLE POSITION SENSOR

Check the throttle position sensor. Refer to EC-916, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace electric throttle control actuator. Refer to EM-196, "Exploded View". NO

EC-915 Revision: 2014 October 2015 JUKE

EC

Α

Е

Н

K

L

N

P0222, P0223 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Component Inspection

INFOID:0000000011610985

1. CHECK THROTTLE POSITION SENSOR

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Perform "Throttle Valve Closed Position Learning". Refer to EC-739, "Work Procedure".
- 4. Turn ignition switch ON.
- 5. Set selector lever to D (CVT) or 1st (M/T) position.
- 6. Check the voltage between ECM harness connector terminals as per the following conditions.

ECM					_	
Connector	+	_	Condition Voltag		Condition Voltage	
Connector	Terr	ninal				
	88 85 80	95	Accelerator	Fully released	More than 0.36V	
F24				Fully depressed	Less than 4.75V	
Γ24		pedal	Fully released	Less than 4.75V		
			Fully depressed	More than 0.36V		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

[MR EXCEPT FOR NISMO RS MODELS]

P0234 TC SYSTEM

DTC Logic INFOID:0000000011611117

DTC DETECTION LOGIC

NOTE:

If DTC P0234 is displayed with DTC P0237 or P0238, first perform the trouble diagnosis for DTC P0237 or P0238. Refer to EC-923, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0234	TC SYSTEM-B1 (Turbocharger overboost condition)	Turbocharger boost is higher than the target value.	Turbocharger boost sensor Turbocharger bypass control valve solenoid valve Exhaust manifold and turbocharger assembly Disconnection, looseness or improper connection of boost control actuator hose

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-917, "Component Function Check".

NOTE:

Use component function check to check the overall function of the turbocharger system circuit. During this check, DTC might not be confirmed.

Is the inspection result normal?

>> INSPECTION END YES

NO >> Proceed to EC-918, "Diagnosis Procedure".

Component Function Check

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2.check electric wastegate control actuator

(P)With CONSULT

- Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "ACTIVE TEST" >> "WASTEGATE ACTUATOR".
- 3. Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.002 m, and make a quick short note of value "V1" of "W/G ACTUATOR POSI SEN B1".
- 4. Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.006 m, and make a quick short note of value "V2" of "W/G ACTUATOR POSI SEN B1".

Do the values of "V1" and "V2" change (visually, ACTUATOR SHAFT operates) and "V2" minus "V1" becomes equal to or more than 1.3V?

YES >> INSPECTION END

NO >> Replace Turbocharger Assembly (do not replace electric wastegate control actuator only). Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

3.check electric wastegate control actuator

- Turn ignition switch OFF.
- Disconnect Wastegate control actuator harness connector.
- While checking the POSITION SENSOR OUT voltage with an oscilloscope, apply a voltage of 12 V to the positive or negative terminal.

Does ACTUATOR SHAFT visually operate and POSITION SENSOR OUT voltage change?

YES >> INSPECTION END

Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

INFOID:0000000011611118

Ν

P0234 TC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

>> Replace Turbocharger Assembly (do not replace electric wastegate control actuator only). Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

Diagnosis Procedure

NO

INFOID:0000000011611119

1. CHECK BOOST CONTROL ACTUATOR HOSE

Check disconnection, looseness or improper connection of hose between turbocharger bypass control valve solenoid valve and boost control actuator.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK TURBOCHARGER BYPASS CONTROL VALVE POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect turbocharger bypass control valve harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between turbocharger bypass control valve harness connector and ground.

	+		
Turbocharger by	pass control valve	_	Voltage
Connector Terminal			
F64	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

${f 3.}$ CHECK TURBOCHARGER BYPASS CONTROL VALVE POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between turbocharger bypass control valve harness connector and IPDM E/R harness connector.

+		_		
Turbocharger bypass con- trol valve		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F64	1	E14	36	Existed

4. Also check harness for short to ground and short.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK TURBOCHARGER BYPASS CONTROL VALVE GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between turbocharger bypass control valve harness connector and ECM harness connector.

+			_	
•	Turbocharger bypass con- trol valve		ECM	
Connector	Terminal	Connector	Terminal	
F64	2	F24	105	Existed

Also check harness for short to power.

P0234 TC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

CDTC/CIRCUIT DIAGNOSIS >	[WIK EXCEPT FOR MISIMO KS MIODELS]
s the inspection result normal?	
YES >> GO TO 5.	
NO >> Repair or replace error-detected parts.	
CHECK TURBOCHARGER BYPASS CONTROL VALVE	
Check the turbocharger bypass control valve. Refer to <u>EM-2</u>	43. "Inspection".
s the inspection result normal?	
YES >> GO TO 6.	
NO >> Replace turbocharger bypass control valve. Refe	er to EM-241, "Exploded View".
CHECK BOOST CONTROL ACTUATOR	
Check the boost control actuator. Refer to EM-243, "Inspection	ion"
s the inspection result normal?	<u></u> -
YES >> GO TO 7.	
NO >> Replace exhaust manifold and turbocharger ass	sembly. Refer to EM-241, "Exploded View".
CHECK TURBOCHARGER BOOST SENSOR	
Check the turbocharger boost sensor. Refer to <u>EC-924, "Cor</u>	mponent Inspection".
s the inspection result normal?	
YES >> Check intermittent incident. Refer to GI-44, "Inte	ermittent Incident".
NO >> Replace turbocharger boost sensor. Refer to EN	

[MR EXCEPT FOR NISMO RS MODELS]

P0235 TC BOOST SENSOR

DTC Logic INFOID:000000011610986

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0235	TURBO BOOST SENSOR (Turbocharger/supercharger boost sensor A circuit)	An excessively low voltage from the turbocharger boost sensor is sent to ECM.	, ,

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-920, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610987

1. CHECK TURBOCHARGER BOOST SENSOR POWER SUPPLY

- Disconnect turbocharger boost sensor harness connector.
- Turn ignition switch ON.
- 3. Check the voltage between turbocharger boost sensor harness connector and ground.

	+		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Turbocharge	boost sensor	_	Voltage (Approx.)	
Connector	Terminal		, , ,	
F75	2	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK TURBOCHARGER BOOST SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

P0235 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+		_	
Turbocharger boost sensor		E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F75	4	F23	13	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK TURBOCHARGER BOOST SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

	+		_	
Turbocharger boost sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F75	1	F23	11	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

CHECK TURBOCHARGER BOOST SENSOR

Check the turbocharger boost sensor. Refer to EC-921, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor. Refer to EM-193, "Exploded View".

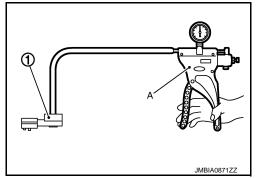
Component Inspection

1. CHECK TURBOCHARGER BOOST SENSOR

- Turn ignition switch OFF.
- 2. Remove turbocharger boost sensor with its harness connector.
- 3. Install pressure pump (A) to turbocharger boost sensor (1). CAUTION:

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminals as per the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

EC

Α

D

Е

F

C

П

INFOID:0000000011610988

L

M

IVI

Ν

Р

P0235 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	ECM		O Title ID and (D Inti- to the	Vi. Ita.
Connector	+	I	Condition [Pressure (Relative to atmospheric pressure)]	Voltage (Approx.)
Connector	Terminal		, , , , , ,	(11 - 7
F23	11 13	0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V	
	11	13	40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	2.67 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to EM-193, "Exploded View".

P0237, P0238 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0237, P0238 TC BOOST SENSOR

DTC Logic INFOID:0000000011610989

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P0237	TC BOOST SEN/CIRC-B1 (Turbocharger boost sensor circuit low input)	An excessively low voltage from the turbocharger boost sensor is sent to ECM.	Harness or connectors (Turbocharger boost sensor circuit is open or shorted.)
P0238	TC BOOST SEN/CIRC-B1 (Turbocharger boost sensor circuit high input)	An excessively high voltage from the turbocharger boost sensor is sent to ECM.	Turbocharger boost sensor Sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-923, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK TURBOCHARGER BOOST SENSOR POWER SUPPLY

- Disconnect turbocharger boost sensor harness connector.
- 2. Turn ignition switch ON.
- Check the voltage between turbocharger boost sensor harness connector and ground.

Turbocharge	boost sensor	_	Voltage (Approx.)	
Connector	Terminal			
F75	2	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK TURBOCHARGER BOOST SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.

EC-923 Revision: 2014 October 2015 JUKE

EC

Α

Е

D

Н

INFOID:0000000011610990

N

P0237, P0238 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

3. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

+			_	
Turbocharger boost sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F75	4	F23	13	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK TURBOCHARGER BOOST SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between turbocharger boost sensor harness connector and ECM harness connector.

+			_	
Turbocharger boost sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F75	1	F23	11	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK TURBOCHARGER BOOST SENSOR

Check the turbocharger boost sensor. Refer to EC-924, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor. Refer to EM-193, "Exploded View".

Component Inspection

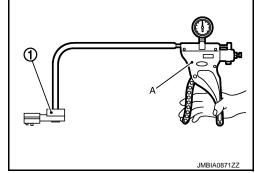
INFOID:000000001161099

1. CHECK TURBOCHARGER BOOST SENSOR

- Turn ignition switch OFF.
- 2. Remove turbocharger boost sensor with its harness connector.
- Install pressure pump (A) to turbocharger boost sensor (1). CAUTION:

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminals as per the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

P0237, P0238 TC BOOST SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

ECM			O Title ID and ID let at a fe	V/ II	
Connector	Connector + - Terminal		Condition [Pressure (Relative to atmospheric pressure)]	Voltage (Approx.)	
Connector			7	(11 - 7	
F00	11 13		0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V	
F23 11		13	40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	2.67 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to EM-193, "Exploded View".

Α

EC

D

Е

F

G

Н

K

L

M

Ν

0

Р

P0300, P0301, P0302, P0303, P0304 MISFIRE | MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

P0300, P0301, P0302, P0303, P0304 MISFIRE

DTC Logic INFOID:000000011610992

DTC DETECTION LOGIC

When a misfire occurs, engine speed will fluctuate. If the engine speed fluctuates enough to cause the crank-shaft position (CKP) sensor (POS) signal to vary, ECM can determine that a misfire is occurring.

Sensor	Input signal to ECM	ECM function
Crankshaft position sensor (POS)	Engine speed	On board diagnosis of misfire

The misfire detection logic consists of the following two conditions.

One Trip Detection Logic (Three Way Catalyst Damage)

On the 1st trip, when a misfire condition occurs that can damage the three way catalyst (TWC) due to overheating, the MIL will blink.

When a misfire condition occurs, the ECM monitors the CKP sensor signal every 200 engine revolutions for a change.

When the misfire condition decreases to a level that will not damage the TWC, the MIL will turn off.

If another misfire condition occurs that can damage the TWC on a second trip, the MIL will blink.

When the misfire condition decreases to a level that will not damage the TWC, the MIL will remain on.

If another misfire condition occurs that can damage the TWC, the MIL will begin to blink again.

2. Two Trip Detection Logic (Exhaust quality deterioration)

For misfire conditions that will not damage the TWC (but will affect vehicle emissions), the MIL will only light when the misfire is detected on a second trip. During this condition, the ECM monitors the CKP sensor signal every 1,000 engine revolutions.

A misfire malfunction can be detected on any one cylinder or on multiple cylinders.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0300	MULTI CYL MISFIRE (Multiple cylinder misfire detected)	Multiple cylinder misfire.	 Improper spark plug Insufficient compression Incorrect fuel pressure Fuel Injector circuit is open or shorted Fuel injector Intake air leak Ignition signal circuit is open or shorted Lack of fuel Signal plate A/F sensor 1 Incorrect PCV hose connection

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

- 1. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Restart engine and let it idle for following time.

About 15 minutes

4. Check 1st trip DTC.

Revision: 2014 October EC-926 2015 JUKE

P0300, P0301, P0302, P0303, P0304 MISFIRE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is 1st trip DTC detected?

>> Proceed to EC-927, "Diagnosis Procedure". YES

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-II

Turn ignition switch OFF and wait at least 10 seconds.

Start engine and drive the vehicle as per the similar conditions to (1st trip) Freeze Frame Data for a certain time. Refer to the table below.

Hold the accelerator pedal as steady as possible.

The similar conditions to (1st trip) Freeze Frame Data means the vehicle operation that the following conditions should be satisfied at the same time.

CAUTION:

Always drive vehicle in safe manner according to traffic conditions and obey all traffic laws when driving.

Engine speed in the freeze frame data \pm 400 rpm			
Vehicle speed in the freeze frame data ± 10 km/h (6 MPH)			
Engine coolant temperature (T	When the freeze frame data shows lower than 70°C (158°F), T should be lower than 70°C (158°F).		
	When the freeze frame data shows higher than or equal to 70°C (158°F), T should be higher than or equal to 70°C (158°F).		

The time to driving varies according to the engine speed in the freeze frame data.

Engine speed	Time
Around 1,000 rpm	Approximately 10 minutes
Around 2,000 rpm	Approximately 5 minutes
More than 3,000 rpm	Approximately 3.5 minutes

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-927, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK FOR INTAKE AIR LEAK AND PCV HOSE

- Start engine and run it at idle speed.
- Listen for the sound of the intake air leak.
- Check PCV hose connection.

Is intake air leak detected?

YES >> Discover air leak location and repair.

NO >> GO TO 2.

2.check for exhaust system clogging

Stop engine and visually check exhaust tube, three way catalyst and muffler for dents.

Is the inspection result normal?

YES-1 >> (P) With CONSULT: GO TO 3.

YES-2 >> \(\overline{\pi} \) Without CONSULT: GO TO 4.

>> Repair or replace it.

3.PERFORM POWER BALANCE TEST

With CONSULT

- Start engine.
- Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- Make sure that each circuit produces a momentary engine speed drop.

Is the inspection result normal?

EC-927 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

INFOID:0000000011610993

Ν

P0300, P0301, P0302, P0303, P0304 MISFIRE

[MR EXCEPT FOR NISMO RS MODELS] < DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 9. NO >> GO TO 4.

4. CHECK FUNCTION OF FUEL INJECTOR

- Start engine and let engine idle.
- Listen to each fuel injector operating sound.

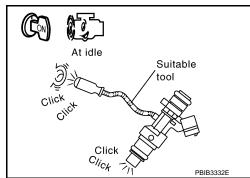
Clicking noise should be heard.

Is the inspection result normal?

YES >> GO TO 5.

NO

>> Perform trouble diagnosis for FUEL INJECTOR. Refer to EC-1203, "Diagnosis Procedure".



5. CHECK FUNCTION OF IGNITION COIL-I

CAUTION:

Do the following procedure in the place where ventilation is good without the combustible.

- 1. Turn ignition switch OFF.
- 2. Remove fuel pump fuse in IPDM E/R to release fuel pressure.

NOTE:

Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

- Start engine.
- After engine stalls, crank it two or three times to release all fuel pressure.
- Turn ignition switch OFF.
- Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils.
- 7. Remove ignition coil and spark plug of the cylinder to be checked.
- 8. Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
- Connect spark plug and harness connector to ignition coil.
- 10. Fix ignition coil using a rope etc. with gap of 13 17 mm (0.52 -0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
- 11. Crank engine for about 3 seconds, and check whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

CAUTION:

- Do not approach to the spark plug and the ignition coil within 50 cm (19.7 in). Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.
- It might cause to damage the ignition coil if the gap of more than 17 mm (0.66 in) is taken.

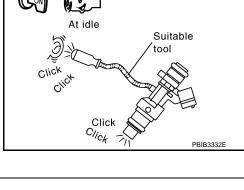
When the gap is less than 13 mm (0.52 in), the spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

YES >> GO TO 9. NO >> GO TO 6.

6.CHECK FUNCTION OF IGNITION COIL-II

- Turn ignition switch OFF.
- Disconnect spark plug and connect a known-good spark plug.
- Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded metal portion.



13 - 17 mm

(0.52-0.66 in)

(Cylinder head, cylinder block, etc.)

Grounded metal portion

[MR EXCEPT FOR NISMO RS MODELS]

Spark should be generated.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Check ignition coil, power transistor and their circuits. Refer to EC-1228, "Diagnosis Procedure".

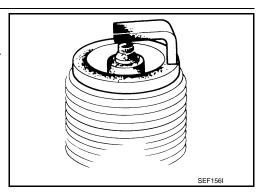
.CHECK SPARK PLUG

Check the initial spark plug for fouling, etc.

Is the inspection result normal?

YES >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to EM-189, "Inspection".

NO >> Repair or clean spark plug. Then GO TO 8.



8.CHECK FUNCTION OF IGNITION COIL-III

- Reconnect the initial spark plugs.
- Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded portion.

Spark should be generated.

Is the inspection result normal?

YES >> INSPECTION END

>> Replace spark plug(s) with standard type one(s). For spark plug type. Refer to EM-213, "Removal NO and Installation".

9. CHECK COMPRESSION PRESSURE

Check compression pressure. Refer to EM-181, "Inspection".

Is the inspection result normal?

YES >> GO TO 10.

NO >> Check pistons, piston rings, valves, valve seats and cylinder head gaskets.

10.CHECK FUEL PRESSURE

- Install all removed parts.
- Release fuel pressure to zero. Refer to EC-756, "Work Procedure".
- Install fuel pressure gauge and check fuel pressure. Refer to EC-756, "Work Procedure".

At idling: Approximately 500 kPa (5.0 bar, 5.1 kg/cm², 73 psi)

Is the inspection result normal?

YES >> GO TO 12.

NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check fuel hoses and fuel tubes for clogging.

Is the inspection result normal?

YES >> Replace "fuel filter and fuel pump assembly". Refer to FL-5, "2WD: Exploded View" (2WD) or FL-9. "AWD: Exploded View" (AWD).

>> Repair or replace.

12. CHECK IGNITION TIMING

Check the following items.

For procedure, refer to EC-750, "Work Procedure".

For specification, refer to EC-1257, "Ignition Timing".

EC-929 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

K

N

P0300, P0301, P0302, P0303, P0304 MISFIRE

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS > Is the inspection result normal?

YES >> GO TO 13.

NO >> Follow the <u>EC-750</u>, "Work Procedure".

13.check a/f sensor 1 input signal circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect A/F sensor 1 harness connector.
- 3. Disconnect ECM harness connector.
- 4. Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

+				
A/F se	ensor 1	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F72	1	F24	79	Existed

5. Check the continuity between A/F sensor 1 harness connector or ECM harness connector and ground.

Terminal		
1	Ground	Not existed
	1	

	+			
E	CM	_	Continuity	
Connector	Terminal			
F24	79	Ground	Not existed	

6. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

14.CHECK A/F SENSOR 1 HEATER

Check the A/F sensor 1 heater. Refer to EC-791, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace A/F sensor 1. Refer to EM-241, "Exploded View".

15. CHECK MASS AIR FLOW SENSOR

(P)With CONSULT

- 1. Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Connect CONSULT and select "DATA MONITOR" mode.
- 5. Select "MASS AIR FLOW SENSOR (Hz)" and check the indication.

Monitor item	Condition	Indication (Hz)
MASS AIR FLOW SENSOR (Hz)	Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz
	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz
	2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz
	Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

P0300, P0301, P0302, P0303, P0304 MISFIRE NOSIS > [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

I. Turn ignition switch OFF.

- 2. Reconnect all harness connectors disconnected.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check the frequency between ECM harness connector terminals under the following conditions.

ECM					
Connector	+ -		Condition	Frequency (Hz)	
Confidential	Terminal		<u></u>		
	37 42		Ignition switch ON (Engine stopped.)	Approx. 3,700 Hz	
F23		42	Idle (Engine is warmed-up to normal operating temperature.)	5,100 – 5,500 Hz	
F23		2,500 rpm (Engine is warmed-up to normal operating temperature.)	6,100 – 6,500 Hz		
		Idle to about 4,000 rpm	5,100 – 5,500 to Approx. 7,000 Hz*		

^{*:} Check for linear frequency rise in response to engine being increased to about 4,000 rpm.

Is the inspection result normal?

YES >> GO TO 16.

NO >> Check connectors for rusted terminals or loose connections in the mass air flow sensor circuit or ground. Refer to EC-828. "DTC Logic".

16. CHECK SYMPTOM TABLE

Check items on the rough idle symptom in EC-1241, "Symptom Table".

Is the inspection result normal?

YES >> GO TO 17.

NO >> Repair or replace error-detected parts.

17. ERASE THE 1ST TRIP DTC

Some tests may cause a 1st trip DTC to be set.

Erase the 1st trip DTC from the ECM memory after performing the tests. Refer to <u>EC-647, "Diagnosis Description".</u>

>> GO TO 18.

18. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

>> INSPECTION END

EC

Α

D

Е

F

Н

1

L

K

M

Ν

0

Р

P0327, P0328 KS

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detected condition	Possible cause
P0327	KNOCK SEN/CIRC-B1 (Knock sensor circuit low input)	An excessively low voltage from the knock sensor is sent to ECM.	Harness or connectors (Knock sensor circuit is open or short-
P0328	KNOCK SEN/CIRC-B1 (Knock sensor circuit high input)	An excessively high voltage from the knock sensor is sent to ECM.	ed.) • Knock sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and run it for at least 5 seconds at idle speed.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-932, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610995

1. CHECK KNOCK SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect knock sensor harness connector.
- Disconnect ECM harness connector.
- 4. Check the continuity between knock sensor harness connector and ECM harness connector.

+				
Knock	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F12	2	F23	20	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2. CHECK KNOCK SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between knock sensor harness connector and ECM harness connector.

P0327, P0328 KS

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

	+	-	-		
	sensor	EC	CM	Continuity	
Connector	Terminal	Connector	Terminal		
F12	1	F23	15	Existed	
		for short to g	round and t	to power.	
•	ction result n	ormal?			
	GO TO 3.	circuit or sh	ort to aroun	d or short to power in harness or connectors.	
_	KNOCK SEN		ort to groun	d of offert to power in flameste of conficcions.	
			000 0	was and have action!	
	nock sensor ction result n	· · · · · · · · · · · · · · · · · · ·	-933, "Com	ponent Inspection".	
•			nt Refer to	GI-44, "Intermittent Incident".	
				285, "Exploded View".	
Compone	nt Inspec	tion		MEO(D:000	0000011610996
	•			INFOID.0000	5000011610996
I.CHECK	KNOCK SEN	NSOR			
. Turn igr	nition switch	OFF.			
		ensor harnes			
B. Check r NOTE:	esistance be	etween knock	sensor teri	minals as per the following.	
	cessary to u	ise an ohmn	neter which	n can measure more than 10 MΩ.	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Knoo	ck sensor				
+	-		Resistanc	e	
Te	rminals				
1	2	Approx. 5	532 - 588 kΩ [a	at 20°C (68°F)]	
CAUTION:					
	any knock	sensors tha	t have beer	n dropped or physically damaged. Use only new or	nes.
s the inspec	ction result n	ormal?			
	INSPECTIO				
NO >>	Replace kno	ock sensor. R	tefer to <u>EM-</u>	-285, "Exploded View".	

P0335 CKP SENSOR (POS)

DTC Logic (INFOID:0000000011610997

DTC DETECTION LOGIC

NOTE:

If DTC P0340 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to <u>EC-1057</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0335	CKP SEN/CIRCUIT [Crankshaft position sensor (POS) circuit]	 The crankshaft position sensor (POS) signal is not detected by the ECM during the first few seconds of engine cranking. The proper pulse signal from the crankshaft position sensor (POS) is not sent to ECM while the engine is running. The crankshaft position sensor (POS) signal is not in the normal pattern during engine running. 	Harness or connectors [Crankshaft position sensor (POS) circuit is open or shorted.] Crankshaft position sensor (POS) Signal plate

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for at least 5 seconds.
 If engine does not start, crank engine for at least 2 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-934, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011610998

1. CHECK CRANKSHAFT POSITION (CKP) SENSOR (POS) POWER SUPPLY

- 1. Disconnect crankshaft position (CKP) sensor (POS) harness connector.
- 2. Turn ignition switch ON.
- 3. Check the voltage between CKP sensor (POS) harness connector and ground.

	+		\	
CKP sen	sor (POS)	_	Voltage (Approx.)	
Connector	Terminal		() [/	
F107	3	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

P0335 CKP SENSOR (POS)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2.CHECK CKP SENSOR (POS) POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF
- Disconnect ECM harness connector.
- Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

+		_		
CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F107	3	F23	27	Existed

Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK CKP SENSOR (POS) GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

+		_		
CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F107	2	F23	44	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK CKP SENSOR (POS) INPUT SIGNAL CIRCUIT

Check the continuity between CKP sensor (POS) harness connector and ECM harness connector.

+		-		
CKP sensor (POS)		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F107	1	F23	33	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

${f 5.}$ CHECK CRANKSHAFT POSITION SENSOR (POS)

Check the crankshaft position sensor (POS). Refer to EC-936, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace crankshaft position sensor (POS). Refer to EM-285, "Exploded View".

O.CHECK GEAR TOOTH

Remove crankshaft position sensor (POS). Refer to EM-285, "Exploded View".

EC

Е

N

Р

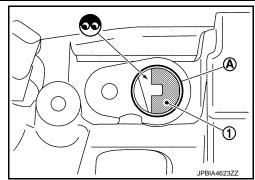
EC-935 Revision: 2014 October 2015 JUKE

P0335 CKP SENSOR (POS)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

 Look into the mounting hole (A) of the crankshaft position sensor (POS) to check that there is no missing gear tooth in the signal plate (1).



Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace the signal plate. Refer to EM-285, "Exploded View".

Component Inspection

INFOID:0000000011610999

1.CHECK CRANKSHAFT POSITION SENSOR (POS)-I

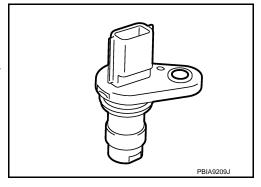
- 1. Turn ignition switch OFF.
- 2. Loosen the fixing bolt of the sensor.
- 3. Disconnect crankshaft position sensor (POS) harness connector.
- 4. Remove the sensor.
- 5. Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO

>> Replace crankshaft position sensor (POS). Refer to EM-285, "Exploded View".



$2. \hbox{CHECK CRANKSHAFT POSITION SENSOR (POS)-II}\\$

Check the resistance between crankshaft position sensor (POS) terminals as per the following.

Crankshaft posit	ion sensor (POS)		
+	_	Resistance [at 25°C (77°F)]	
Terminal (Polarity)			
1	2		
	3	Except 0 or ∞ Ω	
2	3	-	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace crankshaft position sensor (POS). Refer to EM-285, "Exploded View".

P0340 CMP SENSOR (PHASE)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0340 CMP SENSOR (PHASE)

DTC Logic

DTC DETECTION LOGIC

	EC

Α

D

Е

F

Н

Ν

INFOID:0000000011611001

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	
P0340	CMP SEN/CIRC-B1 [Camshaft position sensor (PHASE) circuit]	 The cylinder No. signal is not sent to ECM for the first few seconds during engine cranking. The cylinder No. signal is not sent to ECM during engine running. The cylinder No. signal is not in the normal pattern during engine running. 	Harness or connectors (Camshaft position sensor circuit is open or shorted) Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Sensor power supply 2 circuit	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V with ignition switch ON.

>> GO TO 2.

2.perform dtc confirmation procedure-i

- Start engine and let it idle for at least 5 seconds.
 If engine does not start, crank engine for at least 2 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-937, "Diagnosis Procedure".

NO >> GO TO 3.

3.perform dtc confirmation procedure-i

- 1. Maintaining engine speed at more than 800 rpm for at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-937, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK STARTING SYSTEM

Turn ignition switch to START position.

Does the engine turn over? Does the starter motor operate?

YES >> GO TO 2.

NO >> Check starting system (Refer to EC-728, "Work Flow".).

2.CHECK CAMSHAFT POSITION (CMP) SENSOR (PHASE) POWER SUPPLY

1. Turn ignition switch OFF.

P0340 CMP SENSOR (PHASE)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Disconnect camshaft position (CMP) sensor (PHASE) harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between CMP sensor (PHASE) harness connector and ground.

	+		Maltana
CMP sensor (PHASE)		_	Voltage (Approx.)
Connector	Terminal		, , ,
F109	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK CMP SENSOR (PHASE) GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between CMP sensor (PHASE) harness connector and ECM harness connector.

+		-		
CMP sense	or (PHASE)	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F109	2	F24	71	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK CMP SENSOR (PHASE) INPUT SIGNAL CIRCUIT

- Disconnect ECM harness connector.
- 2. Check the continuity between CMP sensor (PHASE) harness connector and ECM harness connector.

+		-		
CMP sense	or (PHASE)	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F109	3	F24	67	Existed

3. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6. CHECK CAMSHAFT POSITION SENSOR (PHASE)

Check the camshaft position sensor (PHASE). Refer to EC-939, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace camshaft position sensor (PHASE). Refer to EM-260, "Removal and Installation".

7. CHECK CAMSHAFT (INT)

Check the following.

P0340 CMP SENSOR (PHASE)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

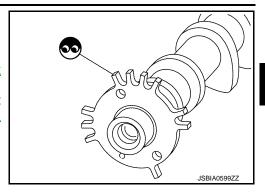
- · Accumulation of debris to the signal plate of camshaft rear end
- Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> Check intermittent incident. Refer to <u>GI-44, "Intermittent Incident".</u>

NO

>> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to <u>EM-260</u>. "Removal and Installation".



INFOID:0000000011611002

Component Inspection

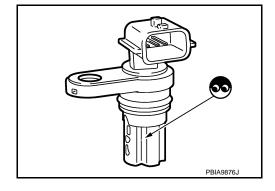
1. CHECK CAMSHAFT POSITION SENSOR (PHASE)-I

- Turn ignition switch OFF.
- 2. Loosen the fixing bolt of the sensor.
- 3. Disconnect camshaft position sensor (PHASE) harness connector.
- 4. Remove the sensor.
- 5. Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace camshaft position sensor (PHASE).



2. CHECK CAMSHAFT POSITION SENSOR (PHASE)-II

Check the resistance camshaft position sensor (PHASE) terminals as per the following.

Camshaft position sensor (PHASE) + -		
		Resistance [Ω at 25°C (77°F)]
Terminals	s (Polarity)	
1	2	
ı	3	Except 0 or ∞
2	3	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace camshaft position sensor (PHASE). Refer to EM-260, "Removal and Installation".

F

D

Α

EC

G

. .

J

K

L

D /

Ν

Р

P0365 EXHAUST VALVE TIMING CONTROL POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0365 EXHAUST VALVE TIMING CONTROL POSITION SENSOR

DTC Description

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition
P0365	CMP SEN/CIRC-B1 (Camshaft position sensor circuit bank 1)	 EVT control position sensor signal is not sent to ECM during engine cranking. EVT control position sensor signal is not sent to ECM during engine running. The pulse signal sent from the EVT control position sensor to ECM is not in the normal pattern during engine running.

Possible Cause

- Harness or connectors
- Exhaust valve timing control position sensor circuit is open or shorted.
- Sensor power supply 2 circuit is shorted.
- Exhaust valve timing control position sensor
- Exhaust camshaft
- Starter motor
- Starting circuit
- Battery deterioration
- Sensor power supply 1 circuit sensors

FAIL-SAFE

Engine operating condition in fail-safe mode				
Fail safe mode Vehicle behavior				
Device fix mode	 This mode fixes the IVT control solenoid valve and the EVT control solenoid valve in the reference position. The intake manifold runner control valve motor is turned OFF (intake manifold runner control valve opens). 			

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5 V at idling.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-1

- 1. Start engine and let it idle for at least 5 seconds.
 - If engine does not start, crank engine for at least 2 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-941, "Diagnosis Procedure".

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-2

- Keep the engine speed at more than 800 rpm for at least 5 seconds.
- 2. Check 1st trip DTC.

P0365 EXHAUST VALVE TIMING CONTROL POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is 1st trip DTC detected?

YES >> Proceed to EC-941, "Diagnosis Procedure".

NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011611004

CHECK STARTING SYSTEM

Turn ignition switch to START position.

Does the engine turn over? Does the starter motor operate?

YES >> GO TO 2.

>> Check starting system. Refer to EC-728, "Work Flow". NO

2.CHECK EXHAUST VALVE TIMING (EVT) CONTROL POSITION SENSOR POWER SUPPLY CIRCUIT-1

- Turn ignition switch OFF.
- 2. Disconnect exhaust valve timing (EVT) control position sensor harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between EVT control position sensor harness connector terminals.

EV	\/-\{-\cdot\-			
Connector	+	_	Voltage (Approx.)	
Connector	Terminals		(11 - 7	
F111	1	2	5 V	

Is the inspection result normal?

YES >> GO TO 8.

>> GO TO 3. NO

3.CHECK EXHAUST VALVE TIMING (EVT) CONTROL POSITION SENSOR POWER SUPPLY CIRCUIT-2

Check the voltage between EVT control position sensor harness connector and ground.

	+		V/ 1/	
EVT control position sensor		_	Voltage (Approx.)	
Connector	Terminal		(
F111	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 4.

f 4.CHECK EXHAUST VALVE TIMING (EVT) CONTROL POSITION SENSOR POWER SUPPLY CIRCUIT-3.

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between EVT control position sensor harness connector and ECM harness connector.

+		_		
EVT control p	osition sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F111	1	F24	73	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

$oldsymbol{5}.$ CHECK SENSOR POWER SUPPLY 1 CIRCUIT

EC-941 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

M

Ν

P0365 EXHAUST VALVE TIMING CONTROL POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Refer to EC-1058, "Diagnosis Procedure".

Is the inspection result normal?

>> INSPECTION END YES

NO >> Replace malfunctioning parts.

6.CHECK EVT CONTROL POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVT control position sensor harness connector and ECM harness connec-

	+		-	
EVT control p	osition sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F111	2	F24	63	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

>> Repair or replace error-detected parts. NO

7.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

	+			
E	CM	_	Continuity	
Connector	Terminal			
	9			
F23	10			
	50		Existed	
F24	60	Ground		
1 24	110	Giodila		
	147			
E19	149			
	152			

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace error-detected parts.

8.CHECK EVT CONTROL POSITION SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between EVT control position sensor harness connector and ECM harness connector.

	+		_	
EVT control position sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
F111	3	F24	69	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

P0365 EXHAUST VALVE TIMING CONTROL POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

9. CHECK EVT CONTROL POSITION SENSOR

Refer to EC-943, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace EVT control position sensor. Refer to EM-247, "Exploded View".

10. CHECK CAMSHAFT (EXT)

Check the following.

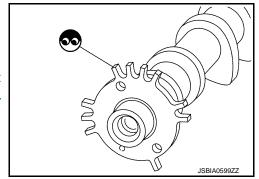
- · Accumulation of debris to the signal plate of camshaft rear end
- · Chipping signal plate of camshaft rear end

Is the inspection result normal?

YES >> INSPECTION END

NO

>> Remove debris and clean the signal plate of camshaft rear end or replace camshaft. Refer to <u>EM-260</u>, "Removal and Installation".



Component Inspection

${\bf 1.} {\tt EXHAUST} \ {\tt VALVE} \ {\tt TIMING} \ ({\tt EVT}) \ {\tt CONTROL} \ {\tt POSITION} \ {\tt SENSOR-1}$

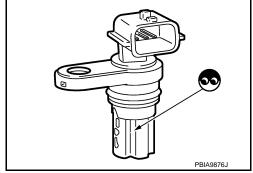
- Turn ignition switch OFF.
- 2. Loosen the sensor mounting bolt.
- 3. Disconnect the EVT control position sensor harness connector.
- 4. Remove the EVT control position sensor.
- 5. Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace

>> Replace the EVT control position sensor. Refer to <u>EM-247</u>, "<u>Exploded View</u>".



2.EXHAUST VALVE TIMING (EVT) CONTROL POSITION SENSOR-2

Check resistance between EVT control position sensor terminals as shown below.

EVT control p				
+	Resistance			
Tern	Terminals			
1	2			
ı	3	Except 0 Ω [at 25°C (77°F)]		
2	3			

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace the EVT control position sensor. Refer to EM-247, "Exploded View".

EC

D

Е

INFOID:0000000011611005

I

Н

J

1 \

Ν

0

Р

[MR EXCEPT FOR NISMO RS MODELS]

P0401, P0402 EGR SYSTEM

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0404 is displayed with DTCs of mass air flow sensor, first perform trouble diagnosis for DTCs of mass air flow sensor. Refer to <u>EC-828</u>. "<u>DTC Logic"</u>.
- If DTC P0404 is displayed with DTCs of EGR pressure sensor, first perform trouble diagnosis for DTCs of EGR pressure sensor. Refer to <u>EC-1016</u>, "<u>DTC Logic</u>".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0401	EGR A FLOW INSUFFI- CIENT (EGR A flow insufficient de- tected)	ECM detects that the difference between the differential pressure value (between before and behind the EGR volume control valve) calculated based on intake air amount and the estimated EGR pressure sensor output value is equal to or less than the specified lower limit value for 6 seconds.	EGR cooler clogging EGR pipe clogging
P0402	EGRC-BPT VALVE (EGR A flow excessive detected)	ECM detects that the difference between the differential pressure value (between before and behind the EGR volume control valve) calculated based on intake air amount and the estimated EGR sensor output value is equal to or more than the specified upper limit value for 6 seconds.	EGR pipe disconnection

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start engine and warm it up to normal operating temperature.
- 2. Drive the vehicle and accelerate from 50 km/h (32 MPH) to 80 km/h (50 MPH) within 15 seconds. CAUTION:

Always drive at safe speed.

3. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-944, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611007

1. CHECK EGR PASSAGE

Check the following for clogging and cracks.

- EGR tube
- EGR hose
- EGR cooler

Is the inspection result normal?

P0401, P0402 EGR SYSTEM

< DTC/CIRCUIT DIAGNOSIS >	[MR EXCEPT FOR NISMO RS MODELS]	
YES >> GO TO 2.		
NO >> Repair or replace error-detected parts.		Α
2.CHECK EGR VOLUME CONTROL VALVE VISUALLY		
 Remove the EGR volume control valve. Check if foreign matter is caught between the EGR volume 	e control valve and the housing	EC
Is the inspection result normal?	c control valve and the nedding.	
YES >> GO TO 3.		С
NO >> Repair or replace error-detected parts.		C
3.CHECK EGR COOLER VISUALLY		
Remove the EGR cooler. Chapter if foreign method is cought between the EGR cooler.	and the housing	D
Check if foreign matter is caught between the EGR cooler <u>Is the inspection result normal?</u>	and the housing.	
YES >> Check intermittent incident. Refer to GI-44, "Intern	nittent Incident".	Е
NO >> Repair or replace error-detected parts.		
		_
		F
		G
		Н
		J
		K
		1
		L
		M
		NI
		Ν
		0

EC-945 2015 JUKE Revision: 2014 October

P0404 EGR VOLUME CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0404 EGR VOLUME CONTROL VALVE

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P0404 is displayed with DTC P044A, or P044E, first perform trouble diagnosis for DTC P044A, or P044E. Refer to EC-984, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0404	EGR A CONTROL (EGR A control circuit range/ performance)	 ECM detects that the current sent to the EGR volume control valve motor is equal to or more than the threshold value for 2 seconds or more under the condition that the target angle of EGR volume control valve is constant. ECM detects that the difference between the target angle of EGR volume control valve and actual valve angle is equal to or more than the threshold value for 5 seconds or more. 	EGR volume control valve Foreigh objects interferes with EGR volume control valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Start the engine when the following conditions are met.

Intake air temperature	0°C (32°F) or more	
Engine coolant temperature	75°C (167°F) or more	

- Drive the vehicle at 50 km/h (32 MPH) or more for at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-946</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611009

1.CHECK EGR VOLUME CONTROL VALVE

Check the EGR volume control valve. Refer to <u>EC-946</u>, "Component Inspection (<u>EGR Volume Control Valve</u>)". Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EGR volume control valve. Refer to <u>EC-588, "ENGINE CONTROL SYSTEM : Component Parts Location".</u>

Component Inspection (EGR Volume Control Valve)

INFOID:0000000011611010

1. CHECK EGR VOLUME CONTROL VALVE-1

P0404 EGR VOLUME CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

(A) A (I) (I)		
□ With	CONSI	ШΙ

- Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "ACTIVE TEST" >> "EGR CONTROL VALVE".
- 3. Operate "Up" or "Down", set "EGR VALVE POSITION" to 0 deg, and check value "V1" of "EGR VALVE POSITION SEN".

Does "V1" become 1.2±0.15 V?

YES >> GO TO 2.

NO >> Replace EGR volume control valve. Refer to <u>EC-588</u>, <u>"ENGINE CONTROL SYSTEM"</u>.

2. CHECK EGR VOLUME CONTROL VALVE-2

(P)With CONSULT

1. Operate "Up" or "Down", set "EGR VALVE POSITION" to 70 deg, and check value "V2" of "EGR VALVE POSITION SEN".

Does "V2" become 4.0±0.15 V?

YES >> GO TO 3.

NO >> Replace EGR volume control valve. Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

3.CHECK EGR VOLUME CONTROL VALVE VISUALLY

- Turn ignition switch OFF.
- 2. Check if any foreign objects interferes with EGR volume control valve.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace the error-detected parts.

EC

D

Е

Α

F

Н

L

M

Ν

0

Ρ

P0407, P0408 EGR PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0407, P0408 EGR PRESSURE SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0407	EGR SENSOR B (EGR sensor B circuit low)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the EGR pressure sensor is 0.294 V or less.	Harness or connectors (EGR pressure sensor circuit is open
P0408	EGR SENSOR B (EGR sensor B circuit high)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the EGR pressure sensor is 4.84 V or more.	or shorted.) • EGR pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-948, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011670555

1. CHECK EGR PRESSURE SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect EGR pressure sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between EGR pressure sensor harness connector and ground.

	+		Voltage (Approx.)	
EGR press	sure sensor	_		
Connector	Terminal		, , ,	
F46	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 2. NO >> GO TO 5.

2.CHECK EGR PRESSURE SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EGR pressure sensor harness connector and ECM harness connector.

P0407, P0408 EGR PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Connector Terminal Connector Terminal F46	\ D O O I	0011 01/10	7110010 /			•	<u>-</u>
EGR pressure sensor							
Connector Terminal Connector Terminal F46 3 F23 43 Existed	4	ŀ	_				
Also check harness for short to power. In the inspection result normal? YES >> GO TO 3. NO >> Repair or replace error-detected parts. CHECK EGR PRESSURE SENSOR INPUT SIGNAL CIRCUIT Check the continuity between EGR pressure sensor harness connector and ECM harness connector. The connector Terminal Connector Terminal F46 2 F23 24 Existed Check the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. Check EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017. "Component Inspection". In the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT Turn ignition switch OFF. Disconnect ECM harness connector. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. The inspection result normal? Connector Terminal Connector Terminal EGR pressure sensor harness connector and ECM harness connector. The inspection result normal?	EGR press	sure sensor	EC	M	Continuity		
Also check harness for short to power.	Connector	Terminal	Connector	Terminal			
s the inspection result normal? YES >> GO TO 3. NO >> Repair or replace error-detected parts. 3. CHECK EGR PRESSURE SENSOR INPUT SIGNAL CIRCUIT 1. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. ### ##	F46	3	F23	43	Existed		
Section Sect	I. Also ch	eck harnes	s for short to	power.			
NO >> Repair or replace error-detected parts. 3. CHECK EGR PRESSURE SENSOR INPUT SIGNAL CIRCUIT Check the continuity between EGR pressure sensor harness connector and ECM harness connector.	s the inspe	ction result	normal?				
A. CHECK EGR PRESSURE SENSOR INPUT SIGNAL CIRCUIT Check the continuity between EGR pressure sensor harness connector and ECM harness connector. Connector Terminal Connector Terminal F46 2 F23 24 Existed			·				
Check the continuity between EGR pressure sensor harness connector and ECM harness connector.	_	•	-	•			
+ - Connector Terminal Connector Terminal F46 2 F23 24 Existed 2. Also check harness for short to ground and to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". Is the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. + Connector Terminal Connector Terminal F46 1 F23 30 Existed 4. Also check harness for short to ground and short to power. Is the inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. Component Inspection (EGR pressure sensor)							_
EGR pressure sensor Connector Terminal Connector Terminal F46 2 F23 24 Existed 2. Also check harness for short to ground and to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". Is the inspection result normal? YES >> Check intermittent incident. Refer to GI-44. "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +	 Check t 	the continui	ty between E	EGR pressi	ıre sensor haı	ess connector and ECM harness connector.	
EGR pressure sensor Connector Terminal Connector Terminal F46 2 F23 24 Existed 2. Also check harness for short to ground and to power. s the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". s the inspection result normal? YES >> Check intermittent incident. Refer to GI-44. "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +							
Connector Terminal Connector Terminal F46 2 F23 24 Existed 2. Also check harness for short to ground and to power. s the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". s the inspection result normal? YES >> Check intermittent incident. Refer to GI-44. "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. 4				_			
F46 2 F23 24 Existed 2. Also check harness for short to ground and to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". Is the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. 4	-			1	Continuity		
2. Also check harness for short to ground and to power. s the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". s the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +							
Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". Is the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +							
YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". Is the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +	Also ch	eck harnes	s for short to	ground an	d to power.		
A. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". In the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. Check EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT In turn ignition switch OFF. In tur	•		normal?				
4. CHECK EGR PRESSURE SENSOR Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". Is the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +			·				
Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection". Is the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +	4	-	=	-	aπs.		
Steel inspection result normal? YES Scheck intermittent incident. Refer to GI-44. "Intermittent Incident". NO Scheplace EGR pressure sensor. Scheck EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. Disconnect ECM harness connector. Scheck the continuity between EGR pressure sensor harness connector and ECM harness connector. Continuity between EGR pressure sensor harness connector and ECM harness connector. Continuity Connector Terminal Connector Terminal Connector Terminal Existed 4. Also check harness for short to ground and short to power. Is the inspection result normal? YES Scheck							_
PES >> Check intermittent incident. Refer to GI-44. "Intermittent Incident". NO >> Replace EGR pressure sensor. 5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +		-		efer to <u>EC-</u>	<u>1017, "Compo</u>	ent Inspection".	
5. CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +	-			5 .			
1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +					to GI-44, "Inte	<u>nittent Incident"</u> .	
1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +	_	•	•			OCLUT	
2. Disconnect ECM harness connector. 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +				30K POW	ER SUPPLI C		_
3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector. +	•			ector			
+ - Continuity EGR pressure sensor ECM Continuity					ıre sensor haı	ess connector and ECM harness connector.	
EGR pressure sensor Connector Terminal Connector Terminal F46 1 F23 30 Existed 4. Also check harness for short to ground and short to power. Is the inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. Component Inspection (EGR pressure sensor)							
Connector Terminal Connector Terminal F46 1 F23 30 Existed 4. Also check harness for short to ground and short to power. Is the inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. Component Inspection (EGR pressure sensor)		+		_			
F46 1 F23 30 Existed 4. Also check harness for short to ground and short to power. Is the inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. Component Inspection (EGR pressure sensor)	EGR press	sure sensor	E	СМ	Continuity		
4. Also check harness for short to ground and short to power. Is the inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. Component Inspection (EGR pressure sensor)	Connector	Terminal	Connector	Terminal			
Is the inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. Component Inspection (EGR pressure sensor)	F46	1	F23	30	Existed		
YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. Component Inspection (EGR pressure sensor)	4. Also ch	eck harnes	s for short to	ground an	d short to pow	r.	
NO >> Repair or replace error-detected parts. Component Inspection (EGR pressure sensor) INFOID:000000011670556	Is the inspe	ction result	normal?		-		
Component Inspection (EGR pressure sensor) NFOID:000000011670556	YES >>	Perform the	e trouble dia			cuit.	
	NO >>	Repair or r	eplace error	-detected p	arts.		
	Compone	ent Inspe	ction (EG	R pressu	ire sensor)	INFOID:0000000116705	56
	•	•	•	•	,		

I.CHECK EGR PRESSURE SENSOR

1.

- Turn ignition switch OFF. Remove EGR pressure sensor hose (intake and exhaust). 2.
- 3. Install pressure pump to EGR pressure sensor port (intake side).
- 4. Turn ignition switch ON and check output voltage between ECM connector terminals as follows.

P0407, P0408 EGR PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

EGR press	sure sensor				
+	-	Condition		Voltage	
Terr	ninal				
2	3	Applied pressure kPa	Not applied	1.0 V	
2	2 3	(kg/cm ² , PSI)	100 (1.02, 14.5)	4.5 V	

CAUTION:

Never apply pressure over 150kPa (1.53 kg/cm², 21.75 PSI)

Is inspection result normal?

YES >> INSPECTION END

NO >> Replace EGR pressure sensor. Refer to FL-26, "2WD : Exploded View".

P040B EGR TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P040B EGR TEMPERATURE SENSOR

DTC Logic INFOID:0000000011670719

DTC DETECTION LOGIC

NOTE:

If DTC P040B is displayed with DTC related to the coolant temperature sensor, first perform the trouble diagnosis for DTC related to the coolant temperature sensor. Refer to EC-694, "DTC Index".

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P040B	EGR TEMP SENSOR A (EGR temperature sensor A circuit range/performance)	 ECM detects the following status continuously for 5 seconds or more: A signal transmitted from EGR temperature sensor is 96°C (204°F) or more, even though the signal from ECT sensor is 70°C (158°F) or less. A signal transmitted from EGR temperature sensor is 20°C (68°F) or less, even though warming up of the engine is performed enough and EGR control valve operates. 	 Harness or connectors (EGR temperature sensor circuit is open or shorted.) EGR temperature sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at ignition switch ON.

>> GO TO 2.

2.perform dtc confirmation procedure -1

- Turn ignition switch ON.
- Select "DATA MONITOR" mode with CONSULT. 2.
- Check that "COOLANT TEMP/S" indicates lower than 70°C (167°C).
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-951, "Diagnosis Procedure".

NO >> GO TO 3.

3.perform dtc confirmation procedure -2

- Start the engine and warm it up to the normal operating temperature.
- Drive the vehicle and accelerate it from 50 km/h (31 MPH) to 80 km/h (50 MPH) within 15 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

Diagnosis Procedure

YES >> Proceed to EC-951, "Diagnosis Procedure".

NO >> INSPECTION END

1. CHECK EGR TEMPERATURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect EGR temperature sensor harness connector.
- Turn ignition switch ON.

EC

Α

D

Е

K

Ν

INFOID:0000000011670720

P040B EGR TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. Check the voltage between EGR temperature sensor harness connector terminal and ground.

	+		V 16
EGR tempe	rature sensor	_	Voltage (Approx.)
Connector	Connector Terminal		, , ,
F47	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK EGR TEMPERATURE SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EGR temperature sensor harness connector and ECM harness connector.

+		_		
EGR tempe	rature sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F47	2	F23	45	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

3.CHECK EGR TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EGR temperature sensor harness connector and ECM harness connector.

	+	_		
EGR tempe	EGR temperature sensor		ECM	
Connector	Terminal	Connector	Terminal	
F47	1	F24	76	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for ECM power supply circuit. Refer to <u>EC-777, "Diagnosis Procedure"</u>.

NO >> Repair or replace error-detected parts.

4. CHECK EGR TEMPERATURE SENSOR

Check EGR temperature sensor. Refer to <u>EC-952</u>, "Component Inspection (<u>EGR Temperature Sensor</u>)". Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EGR temperature sensor. Refer to EM-237, "Exploded View".

Component Inspection (EGR Temperature Sensor)

INFOID:0000000011670721

1. CHECK EGR TEMPERATURE SENSOR

- Turn ignition switch OFF.
- 2. Disconnect EGR temperature sensor harness connector.
- 3. Remove EGR temperature sensor.
- Check resistance between EGR temperature sensor terminals.

P040B EGR TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	nperature nsor			
+ -		Condition		Resistance
Term	ninals	1		
			0°C (32°F)	624 –1053 kΩ
1	2	Temperature	50°C (122°F)	64.6 –93.5 kΩ
			100°C (212°F)	11.4 –15.1 kΩ
s the insp	ection re	sult normal?		

YES >> INSPECTION END

NO >> Replace EGR temperature sensor. Refer to EM-237, "Exploded View".

EC

Α

D

Е

F

Н

J

Κ

L

M

Ν

0

Р

P040C, P040D EGR GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P040C, P040D EGR GAS TEMPERATURE SENSOR

DTC Logic (INFOID:0000000011611011

DTC DETECTION LOGIC

NOTE:

If DTC P040C, or P040D is displayed with DTC P0401, and/or P0402, first perform trouble diagnosis for DTC P0401, and/or P0402. Refer to <u>EC-944, "DTC Logic"</u>.

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P040C	EGR TEMP SENSOR A (EGR temperature sensor A circuit low)	ECM detects that a voltage signal from EGR temperature sensor is less than 0.04 V for 5 consecutive seconds.	Harness or connectors (EGR temperature sensor circuit is)
P040D	EGR TEMP SENSOR A (EGR temperature sensor A circuit high)	ECM detects that a voltage signal from EGR temperature sensor is less than 4.96 V for 5 consecutive seconds.	open or shorted.) • EGR temperature sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 10 V or more at ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-954, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

CHECK EGR TEMPERATURE SENSOR

INFOID:0000000011611012

®With CONSULT

- 1. Turn ignition switch ON.
- Select "EGR TEMP SEN" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check that "EGR TEMP SEN" indication as follows.

Monitor item	Condition	Value
EGR TEMP SEN	Warm-up condition Idle speed	1,100 - 4,500 mV

- 1. Start engine and warm it up to normal operating temperature.
- 2. Check that voltage between ECM harness connector terminals as follows.

P040C, P040D EGR GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

ECM					
Connector	+	Connector	_	Condition	Voltage
Connector	Terminal	Connector	Terminal		
F24	76	F23	45	Warm-up condition Idle speed	1.1 – 4.5 V

EC

Α

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace EGR temperature sensor. Refer to EM-237, "Exploded View".

2.CHECK EGR TEMPERATURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect EGR temperature sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between EGR temperature sensor harness connector terminal and ground.

	+		\
EGR tempe	rature sensor	_	Voltage (Approx.)
Connector	Connector Terminal		() ()
F47	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

${f 3.}$ CHECK EGR TEMPERATURE SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EGR temperature sensor harness connector and ECM harness connector.

	+			
EGR temperature sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F47	2	F23	45	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

4. CHECK EGR TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EGR temperature sensor harness connector and ECM harness connector.

	+			
EGR temperature sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F47	1	F24	76	Existed

Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for ECM power supply circuit. Refer to EC-777, "Diagnosis Procedure".

NO >> Repair or replace error-detected parts.

Revision: 2014 October 2015 JUKE

D

Е

N

Р

P040C, P040D EGR GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Component Inspection (EGR Temperature Sensor)

INFOID:0000000011611013

1. CHECK EGR TEMPERATURE SENSOR

- 1. Turn ignition switch OFF.
- 2. Disconnect EGR temperature sensor harness connector.
- 3. Remove EGR temperature sensor.
- 4. Check resistance between EGR temperature sensor terminals.

EGR temperature sensor		Condition		D		
+	_	Condition		Condition Resistance		Resistance
Terminals						
'			0°C (32°F)	624 –1053 kΩ		
1	2	Temperature	50°C (122°F)	64.6 –93.5 kΩ		
			100°C (212°F)	11.4 –15.1 kΩ		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EGR temperature sensor. Refer to EM-237, "Exploded View".

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

F

Н

K

M

N

Р

P0420 THREE WAY CATALYST FUNCTION

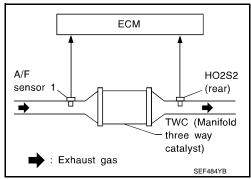
DTC Logic INFOID:0000000011611014

DTC DETECTION LOGIC

The ECM monitors the switching frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2.

A three way catalyst (manifold) with high oxygen storage capacity will indicate a low switching frequency of heated oxygen sensor 2. As oxygen storage capacity decreases, the heated oxygen sensor 2 switching frequency will increase.

When the frequency ratio of air fuel ratio (A/F) sensor 1 and heated oxygen sensor 2 approaches a specified limit value, the three way catalyst (manifold) malfunction is diagnosed.



DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0420	TW CATALYST SYS-B1 (Catalyst system efficiency below threshold)	Three way catalyst (manifold) does not operate properly. Three way catalyst (manifold) does not have enough oxygen storage capacity.	Three way catalyst (manifold) Exhaust tube Intake air leaks Fuel injector Fuel injector leaks Spark plug Improper ignition timing

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds. 1.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

Will CONSULT be used?

YES >> GO TO 2. NO >> GO TO 6.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

With CONSULT

TESTING CONDITION:

Do not hold engine speed for more than the specified minutes below.

- Start engine and warm it up to the normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds. 2.
- Turn ignition switch ON. 3.
- Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 6. Let engine idle for 1 minute.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check that "COOLAN TEMP/S" indicates more than 70°C (158°F). If not, warm up engine and go to next step when "COOLAN TEMP/S" indication reaches to 70°C (158°F).
- Open engine hood.
- 10. Select "DTC & SRT CONFIRMATION" then "SRT WORK SUPPORT" mode of "ENGINE" using CON-SULT.
- 11. Rev engine up to 2,000 to 3,000 rpm and hold it for 3 consecutive minutes then release the accelerator pedal completely.

EC-957 Revision: 2014 October 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

12. Check the indication of "CATALYST".

Which is displayed on CONSULT screen?

CMPLT>> GO TO 5.

INCMP >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

- 1. Wait 5 seconds at idle.
- Rev engine up to 2,000 to 3,000 rpm and maintain it until "INCMP" of "CATALYST" changes to "CMPLT" (It will take approximately 5 minutes).

Does the indication change to "CMPLT"?

YES >> GO TO 5.

NO >> GO TO 4.

f 4.PERFORM DTC CONFIRMATION PROCEDURE AGAIN

- 1. Stop engine and cool it down to less than 70°C (158°F).
- 2. Perform DTC confirmation procedure again.

>> GO TO 2.

5. PERFORM DTC CONFIRMATION PROCEDURE-III

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-959, "Diagnosis Procedure".

NO >> INSPECTION END

6.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-958, "Component Function Check".

NOTE:

Use component function check to check the overall function of the three way catalyst (manifold). During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-959, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011611015

1. PERFORM COMPONENT FUNCTION CHECK

- 1. Start engine and warm it up to the normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- Restart engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 5. Open engine hood.
- 6. Check the voltage between ECM harness connector terminals as per the following condition.

ECM					
Connector	+	_	Condition	Voltage (V)	
Connector	Terminal				
F24	84	78	Keeping engine speed at 2500 rpm constant under no load	The voltage fluctuation cycle takes more than 5 seconds. • 1 cycle: 0.6 - 1.0 → 0 - 0.3 → 0.6 - 1.0	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-959, "Diagnosis Procedure".

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011611016

CHECK EXHAUST SYSTEM

Visually check exhaust tubes and muffler for dent.

Is the inspection result normal?

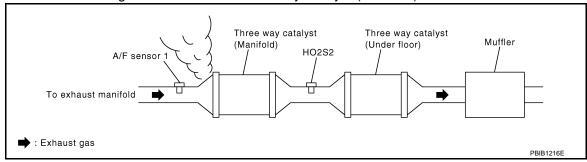
YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK EXHAUST GAS LEAK

Start engine and run it at idle.

Listen for an exhaust gas leak before the three way catalyst (manifold).



Is exhaust gas leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 3.

3.CHECK INTAKE AIR LEAK

Listen for an intake air leak after the mass air flow sensor.

Is intake air leak detected?

YES >> Repair or replace error-detected parts.

NO >> GO TO 4.

4. CHECK IGNITION TIMING AND IDLE SPEED

Check the following items. Refer to EC-750, "Work Procedure".

For specification, refer to EC-1257, "Ignition Timing"

For specification, refer to EC-1257, "Idle Speed".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Follow the EC-750, "Work Procedure".

5.CHECK FUEL INJECTOR

Check the fuel injector. Refer to EC-1203, "Component Function Check".

Is the inspection result normal?

YES >> GO TO 6.

NO >> Perform EC-1203, "Diagnosis Procedure".

$oldsymbol{6}$.CHECK FUNCTION OF IGNITION COIL-I

CAUTION:

Do the following procedure in the place where ventilation is good without the combustible.

- 1. Turn ignition switch OFF.
- Remove fuel pump fuse in IPDM E/R to release fuel pressure.

NOTE:

Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

- Start engine.
- 4. After engine stalls, crank it two or three times to release all fuel pressure.
- 5. Turn ignition switch OFF.
- Remove ignition coil and spark plug of the cylinder to be checked.

EC

Α

D

Е

Н

Ν

Р

Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils.

EC-959 Revision: 2014 October 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

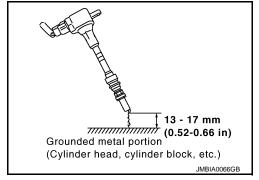
[MR EXCEPT FOR NISMO RS MODELS]

- 8. Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
- 9. Connect spark plug and harness connector to ignition coil.
- 10. Fix ignition coil using a rope etc. with gap of 13 17 mm (0.52 0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
- Crank engine for about 3 seconds, and check whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

CAUTION:

 Do not approach to the spark plug and the ignition coil within 50 cm (19.7 in). Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.



• It might cause to damage the ignition coil if the gap of more than 17 mm (0.66 in) is taken. NOTE:

When the gap is less than 13 mm (0.52 in), the spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

YES >> GO TO 10. NO >> GO TO 7.

7.CHECK FUNCTION OF IGNITION COIL-II

- 1. Turn ignition switch OFF.
- 2. Disconnect spark plug and connect a known-good spark plug.
- 3. Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded metal portion.

Spark should be generated.

Is the inspection result normal?

YES >> GO TO 8.

NO

NO >> Check ignition coil, power transistor and their circuits. Refer to EC-1228, "Diagnosis Procedure".

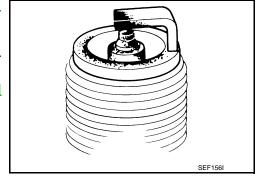
8. CHECK SPARK PLUG

Check the initial spark plug for fouling, etc. Refer to <u>EM-189</u>, <u>"Inspection"</u>.

Is the inspection result normal?

YES >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to <u>EM-189</u>, "Inspection".

>> Repair or clean spark plug. Refer to <u>EM-188</u>, "<u>Exploded View</u>". Then GO TO 9.



9. CHECK FUNCTION OF IGNITION COIL-III

- Reconnect the initial spark plugs.
- 2. Crank engine for about 3 seconds, and recheck whether spark is generated between the spark plug and the grounded portion.

Spark should be generated.

Is the inspection result normal?

YES >> INSPECTION END

Revision: 2014 October

NO >> Replace spark plug(s) with standard type one(s). For spark plug type, refer to EM-188, "Removal and Installation".

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

10. CHECK FUEL INJECTOR

- 1. Turn ignition switch OFF.
- 2. Remove fuel injector assembly. Refer to EM-207, "Exploded View". Keep fuel hose and all fuel injectors connected to fuel tube.
- 3. Disconnect all ignition coil harness connectors.
- 4. Reconnect all fuel injector harness connectors disconnected.
- Turn ignition switch ON.

Does fuel drip from fuel injector?

YES >> GO TO 11.

NO >> Replace the fuel injector(s) from which fuel is dripping. Refer to EM-207, "Exploded View".

11. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

Is the trouble fixed?

YES >> INSPECTION END

NO >> Replace three way catalyst assembly. Refer to <u>EM-231, "2WD : Exploded View"</u> (2WD), <u>EM-234, "AWD : Exploded View"</u> (AWD).

EC

Е

D

F

G

Н

K

L

Ν

0

Р

DTC Logic

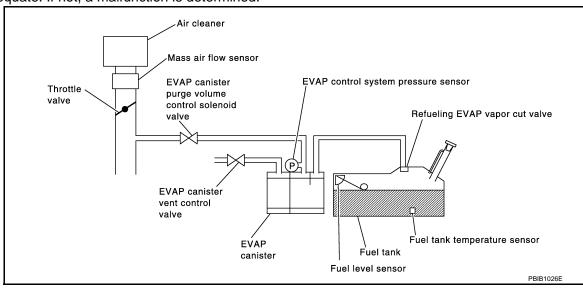
DTC DETECTION LOGIC

NOTE:

If DTC P0441 is displayed with other DTC such as P2122, P2123, P2127, P2128 or P2138, first perform trouble diagnosis for other DTC.

In this evaporative emission (EVAP) control system, purge flow occurs during non-closed throttle conditions. Purge volume is related to air intake volume. Under normal purge conditions (non-closed throttle), the EVAP canister purge volume control solenoid valve is open to admit purge flow. Purge flow exposes the EVAP control system pressure sensor to intake manifold vacuum.

Under normal conditions (non-closed throttle), sensor output voltage indicates if pressure drop and purge flow are adequate. If not, a malfunction is determined.



DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0441	EVAP PURG FLOW/MON (Evaporative emission system incorrect purge flow)	EVAP control system does not operate properly, EVAP control system has a leakage between intake manifold and EVAP control system pressure sensor.	EVAP canister purge volume control solenoid valve stuck closed EVAP control system pressure sensor and the circuit Loose, disconnected or improper connection of rubber tube Blocked rubber tube Cracked EVAP canister EVAP canister purge volume control solenoid valve circuit Accelerator pedal position sensor Blocked purge port Blocked purge line EVAP canister vent control valve EVAP control system pressure sensor removed

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Will CONSULT be used?

Will CONSULT be used?

YES >> GO TO 2.

NO >> GO TO 6.

2.PRECONDITIONING

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 3.

3.perform dtc confirmation procedure-i

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and let it idle for at least 70 seconds.
- Select "PURG FLOW P0441" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CON-SULT.
- Touch "START". 7.

Is "COMPLETED" displayed on CONSULT screen?

YES >> GO TO 5.

NO >> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE-II

When the following conditions are met, "TESTING" will be displayed on the CONSULT screen. Maintain the conditions continuously until "TESTING" changes to "COMPLETED". (It will take at least 35 seconds.)

Selector lever	Suitable position
VHCL SPEED SE	32 - 120 km/h (20 - 75 mph)
ENG SPEED	500 - 3,000 rpm
B/FUEL SCHDL	1.25 - 6.5 msec
COOLANT TEMP/S	More than 0°C (32°F)

CAUTION:

Always drive vehicle at a safe speed.

If "TESTING" does not change for a long time, retry from step 2.

Is "COMPLETED" displayed on CONSULT screen?

YES >> GO TO 5.

>> Perform DTC CONFIRMATION PROCEDURE again. GO TO 3. NO

$oldsymbol{5}$.PERFORM DTC CONFIRMATION PROCEDURE-III

Touch "SELF-DIAG RESULTS".

Which is displayed on CONSULT screen?

OK >> INSPECTION END

NG >> Proceed to EC-964, "Diagnosis Procedure".

$oldsymbol{6}$.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-964, "Component Function Check".

NOTE:

Use component function check to check the overall monitoring function of the EVAP control system purge flow monitoring. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-964, "Diagnosis Procedure".

EC-963 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

N

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Component Function Check

INFOID:0000000011667596

1. PERFORM COMPONENT FUNCTION CHECK

⋈Without CONSULT

- 1. Lift up drive wheels.
- Start engine (VDC switch OFF) and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF, wait at least 10 seconds.
- 4. Turn ignition switch ON.
- 5. Turn ignition switch OFF, wait at least 10 seconds.
- Start engine and wait at least 70 seconds.
- 7. Set voltmeter probes to ECM harness connector terminals under the following conditions.

ECM					
Connector	+	_			
Connector	Terr	minal			
E19	121	148			

- 8. Check EVAP control system pressure sensor value at idle speed and note it.
- 9. Establish and maintain the following conditions for at least 1 minute.

Air conditioner switch	ON
Head lamp switch	ON
Rear window defogger switch	ON
Engine speed	Approx. 3,000 rpm
Gear position	Any position other than P, N or R

10. Verify that EVAP control system pressure sensor value stays 0.1 V less than the value at idle speed (measured at step 6) for at least 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-964, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011667597

1. CHECK EVAP CANISTER

- 1. Turn ignition switch OFF.
- 2. Check EVAP canister for cracks.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 2.

YES-2 >> Without CONSULT: GO TO 3.

NO >> Replace EVAP canister. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD models), <u>FL-29, "AWD : Removal and Installation"</u> (AWD models).

2. CHECK PURGE FLOW

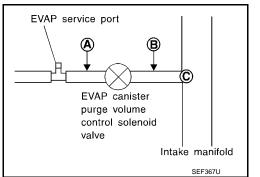
(P)With CONSULT

- Disconnect vacuum hose connected to EVAP canister purge volume control solenoid valve at EVAP service port and install vacuum gauge. For the location of EVAP service port, refer to EC-639, "EVAPORATIVE EMISSION SYSTEM: System Description".
- 2. Start engine and let it idle.
- 3. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT.
- Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL CONT/V" opening and check vacuum existence.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

PURG VOL CONT/V	Vacuum		
100%	Existed		
0%	Not existed		E
Is the inspection result normal?			
YES >> GO TO 7. NO >> GO TO 4.			
3.check purge flow			
Without CONSULT Start engine and warm it up	to normal operating temperature.		
2. Stop engine.			
3. Disconnect vacuum hose co	onnected to EVAP canister purge vo	plume control solenoid valve at EVAP serservice port, refer to <u>EC-639</u> , "EVAPORA-	
TIVE EMISSION SYSTEM:		service port, relei to <u>LC-039. EVAFORA-</u>	
4. Start engine and let it idle.			
Do not depress accelerate Description: Do not depress accelerate Description:	or pedal even slightly. ation before 60 seconds pass after s	starting engine.	
0 0	·		
Vacuum should not exi	st.		
6. Rev engine up to 2,000 rpm	after 100 seconds pass after startin	ng engine.	
Vacuum should exist.			
s the inspection result normal?			
YES >> GO TO 7.			
NO >> GO TO 4.			
4.CHECK EVAP PURGE LINE			
1. Turn ignition switch OFF.	imprenser connection or disconnection		
 Check EVAP purge line for Refer to <u>EC-1251</u>, "Inspecti 	improper connection or disconnectio on".	on.	
s the inspection result normal?	_		
YES >> GO TO 5.			
NO >> Repair EVAP purge			
5.CHECK EVAP PURGE HOS	E AND PURGE PORT		
	nnected to EVAP service port A and	EVAP service port	
EVAP canister purge volum 2. Blow air into each hose and			
	pa.go po o .	ig ig $ig ig $	



EC-965 Revision: 2014 October 2015 JUKE

Р

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

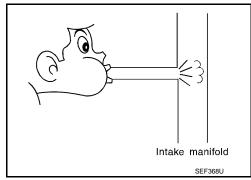
Check that air flows freely.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 6.

YES-2 >> Without CONSULT: GO TO 7.

NO >> Repair or clean hoses and/or purge port.



6. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

(P)With CONSULT

- 1. Start engine.
- Perform "PURG VOL C/V" in "ACTIVE TEST" mode with CONSULT. Check that engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

YES >> GO TO 8.

NO >> GO TO 7.

7. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Check EVAP canister purge volume control solenoid valve. Refer to EC-971, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

8. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

- Disconnect EVAP control system pressure sensor harness connector.
- Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD models), <u>FL-29, "AWD : Removal and Installation"</u> (AWD models).

9. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR FUNCTION

Check EVAP control system pressure sensor function. Refer to <u>EC-996, "DTC Logic"</u> for DTC P0452, <u>EC-999, "DTC Logic"</u> for DTC P0453.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD models), FL-29, "AWD : Removal and Installation" (AWD models).

10.CHECK RUBBER TUBE FOR CLOGGING

- 1. Disconnect rubber tube connected to EVAP canister vent control valve.
- 2. Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Clean the rubber tube using an air blower.

11. CHECK EVAP CANISTER VENT CONTROL VALVE

Check EVAP canister vent control valve. Refer to EC-977, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 12.

NO >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD models), <u>FL-29, "AWD : Removal and Installation"</u> (AWD models).

DTC/CIRCUIT DIAGNOSIS >	[MR EXCEPT FOR NISMO RS MODELS]
12.CHECK EVAP PURGE LINE	
nspect EVAP purge line (pipe and rubber tube). C	check for evidence of leakage.
efer to <u>EC-639, "EVAPORATIVE EMISSION SYS</u> the inspection result normal?	STEM: System Description".
YES >> GO TO 13.	
NO >> Repair EVAP purge line.	
3.CLEAN EVAP PURGE LINE lean EVAP purge line (pipe and rubber tube) usir	ag air blower
real LVAI purge line (pipe and rubber tube) usir	ig all blower.
>> Check intermittent incident. Refer to G	GI-44, "Intermittent Incident".

EC-967 Revision: 2014 October 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

DTC Logic INFOID:0000000011667598

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)		DTC detecting condition	Possible cause
P0443	PURG VOLUME CONT/V	ing the vehicle is stopped while the engine is running, even when EVAP canister purge volume control solenoid valve is completely closed. • EVAP canister purge volume control solenoid valve is completely closed.	 EVAP control system pressure sensor EVAP canister purge volume control solenoid valve (The valve is stuck open.) EVAP canister vent control valve 	
P0443	(Evaporative emission system purge control valve circuit)	В	The canister purge flow is detected during the specified driving conditions, even when EVAP canister purge volume control solenoid valve is completely closed.	 EVAP canister Hoses (Hoses are connected incorrectly or clogged.)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Perform "DTC CONFIRMATION PROCEDURE" when the fuel level is between 1/4 and 3/4 full, and vehicle is placed on flat level surface.
- Always perform test at a temperature of 5 to 60°C (41 to 140°F).
- Cool the vehicle so that engine coolant temperature becomes same level as ambient temperature.

Do you have CONSULT

YES >> GO TO 2. NO >> GO TO 4.

2.PERFORM DTC CONFIRMATION PROCEDURE A

(P)With CONSULT

- Turn ignition switch ON.
- Check that the following condition are met. FUEL T/TMP SE: 0 - 35°C (32 - 95°F)
- Start engine and wait at least 60 seconds.
- Check 1st trip DTC.

IS 1st trip DTC detected?

YES >> Proceed to EC-969, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE B

(P)With CONSULT

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Select "PURG VOL CN/V P1444" of "EVAPORATIVE SYSTEM" in "DTC WORK SUPPORT" mode with CONSULT.
- Touch "START".
- Start engine and let it idle until "TESTING" on CONSULT changes to "COMPLETED". (It will take approximately 10 seconds.)

If "TESTING" is not displayed after 5 minutes, retry from step 2.

Touch "SELF-DIAG RESULTS".

Which is displayed on CONSULT screen?

EC-968 Revision: 2014 October 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

>> INSPECTION END

NO >> Proceed to EC-969, "Diagnosis Procedure".

f 4 .PERFORM DTC CONFIRMATION PROCEDURE A

With GST

YES

1. Turn ignition switch ON.

Set voltmeter probes to ECM harness connector terminals.

Connector	+	_	Voltage (V)
Connector	Terr	minal	
E19	128	3.1 - 4.0	

- Start engine and wait at least 60 seconds.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-969, "Diagnosis Procedure".

NO >> GO TO 5.

${f 5}$ PERFORM DTC CONFIRMATION PROCEDURE B

■With GST

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and let it idle for at least 20 seconds.
- 6. Check 1st trip DTC.

Is 1st trip DTC displayed?

YES >> Proceed to EC-969, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1.check evap canister purge volume control solenoid valve power supply

- Turn ignition switch OFF.
- Disconnect EVAP canister purge volume control solenoid valve harness connector. 2.
- Turn ignition switch ON.
- 4. Check the voltage between EVAP canister purge volume control solenoid valve harness connector and ground.

	rge volume control id valve	Ground	Voltage	
Connector	Terminal			
F106	1	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OUTPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP canister purge volume control solenoid valve harness connector and ECM harness connector.

EC

Α

Е

D

INFOID:0000000011667599

N

< DTC/CIRCUIT DIAGNOSIS >

	urge volume con- noid valve	E	Continuity	
Connector Terminal		Connector	Terminal	
F106	2	F24	115	Existed

Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

- Disconnect EVAP control system pressure sensor harness connector.
- Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 4.

>> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD: Removal and Installation" NO (2WD models), FL-29, "AWD: Removal and Installation" (AWD models).

f 4.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check EVAP control system pressure sensor. Refer to EC-995, "Component Inspection".

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 5.

YES-2 >> Without CONSULT: GO TO 6.

>> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD : Removal and Installation" (2WD models), FL-29, "AWD: Removal and Installation" (AWD models).

${f 5}$.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

(P)With CONSULT

- Turn ignition switch OFF.
- Reconnect harness connectors disconnected.
- 3. Start engine.
- Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT. Check that engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

YES >> GO TO 7.

NO >> GO TO 6.

6.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Check EVAP canister purge volume control solenoid valve. Refer to EC-971, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

>> Replace EVAP canister purge volume control solenoid valve. Refer to EC-588, "ENGINE CON-NO TROL SYSTEM: Component Parts Location".

7.CHECK RUBBER TUBE FOR CLOGGING

- Disconnect rubber tube connected to EVAP canister vent control valve.
- Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Clean the rubber tube using an air blower.

8 .CHECK EVAP CANISTER VENT CONTROL VALVE

Check EVAP canister vent control valve. Refer to EC-977, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 9.

< DTC/CIRCUIT DIAGNOSIS >

>> Replace EVAP canister vent control valve. Refer to FL-26, "2WD: Removal and Installation" (2WD models), FL-29, "AWD: Removal and Installation" (AWD models).

9.check if evap canister is saturated with water

Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached. Refer to FL-26. "2WD: Removal and Installation" (2WD models), FL-29, "AWD: Removal and Installation" (AWD models).

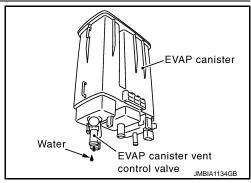
Does water drain from the EVAP canister?

YES >> GO TO 10.

NO

NO

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident".



Α

EC

D

10. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister. Refer to FL-26, "2WD: Removal and Installation" (2WD models), FL-29, "AWD: Removal and Installation" (AWD models).

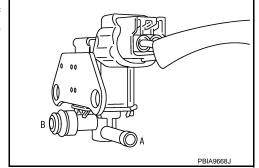
Component Inspection

1. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

(P)With CONSULT

- 1. Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.
- Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
- Start engine.
- Select "PURG VOL CONT/V" in "ACTIVE TEST" mode with CONSULT.
- Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL CONT/V" opening and check air passage continuity of EVAP canister purge volume control solenoid valve under the following conditions.

Condition (PURG VOL CONT/V value)	Air passage continuity between (A) and (B)
100%	Existed
0%	Not existed



INFOID:0000000011667600

N

Р

®Without CONSULT

- Turn ignition switch OFF.
- Disconnect EVAP canister purge volume control solenoid valve harness connector.
- Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.

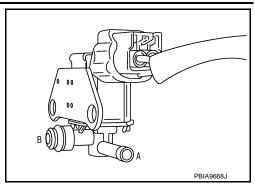
P0443 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. Check air passage continuity of EVAP canister purge volume control solenoid valve under the following conditions.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Existed
No supply	Not existed



Is the inspection result normal?

NO

YES >> INSPECTION END

>> Replace EVAP canister purge volume control solenoid valve. Refer to <u>EC-588</u>, "ENGINE CON-TROL SYSTEM: Component Parts Location".

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID **VALVE**

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID **VALVE**

DTC Logic INFOID:0000000011611017

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0444	PURG VOLUME CONT/V (EVAP canister purge volume control solenoid valve circuit open)	An excessively low voltage signal is sent to ECM through the EVAP canister purge volume control solenoid valve.	Harness or connectors (EVAP canister purge volume control solenoid valve circuit is open or shorted.) EVAP canister purge volume control solenoid valve
P0445	PURG VOLUME CONT/V (Evaporative emission system purge control valve circuit short- ed)	An excessively high voltage signal is sent to ECM through the EVAP canister purge volume control solenoid valve.	Harness or connectors (EVAP canister purge volume control solenoid valve circuit is shorted.) EVAP canister purge volume control solenoid valve

DTC CONFIRMATION PROCEDURE

1.CONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for at least 13 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-973, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1.check evap canister purge volume control solenoid valve power supply

- Turn ignition switch OFF.
- Disconnect EVAP canister purge volume control solenoid valve harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between EVAP canister purge volume control solenoid valve harness connector and ground.

-	+		
	purge volume enoid valve	_	Voltage
Connector Terminal			
F106 1		Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

EC-973 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

M

INFOID:0000000011611018

Ν

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> GO TO 2.

2.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between EVAP canister purge volume control solenoid valve harness connector and IPDM E/R harness connector.

+			_	
EVAP canister purge volume control solenoid valve		IPDM E/R		Continuity
Connector Terminal		Connector	Terminal	•
F106	1	E14	35	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 4.

YES-2 >> Without CONSULT: GO TO 5.

NO >> Repair or replace error-detected parts.

3.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between EVAP canister purge volume control solenoid valve harness connector and ECM harness connector.

+			_	
EVAP canister purge volume control solenoid valve		ECM		Continuity
Connector Terminal		Connector	Terminal	
F106	2	F24	115	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 4.

YES-2 >> Without CONSULT: GO TO 5.

NO >> Repair or replace error-detected parts.

4.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

(P)With CONSULT

- 1. Reconnect all harness connectors disconnected.
- Start engine.
- Perform "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 4. Check that engine speed varies according to the valve opening.

Does engine speed vary according to the valve opening?

YES >> Check intermittent incident. Refer to GI-44. "Intermittent Incident".

NO >> GO TO 5.

CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Check the EVAP canister purge volume control solenoid valve. Refer to <u>EC-975</u>. "Component Inspection". <u>Is the inspection result normal?</u>

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

P0444, P0445 EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Component Inspection

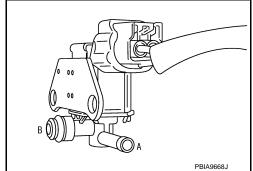
INFOID:0000000011611019

1.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

(P)With CONSULT

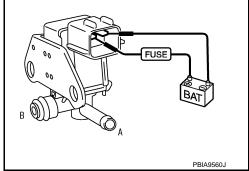
- 1. Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.
- 3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
- Start engine.
- 5. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL C/V" opening and check air passage continuity of EVAP canister purge volume control solenoid valve as per the following conditions.

Condition (PURG VOL C/V value)	Air passage continuity between (A) and (B)
100%	Existed
0%	Not existed



- 1. Turn ignition switch OFF.
- Disconnect EVAP canister purge volume control solenoid valve harness connector.
- 3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
- 4. Check air passage continuity of EVAP canister purge volume control solenoid valve as per the following conditions.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Existed
No supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END

NO

>> Replace EVAP canister purge volume control solenoid valve. Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

EC

Α

D

Е

F

Н

K

M

Ν

0

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0447 EVAP CANISTER VENT CONTROL VALVE

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0447	VENT CONTROL VALVE (Evaporative emission system vent control circuit open)	An improper voltage signal is sent to ECM through EVAP canister vent control valve.	Harness or connectors (The valve circuit is open or shorted.) EVAP canister vent control valve Hoses (Hoses are connected incorrectly or clogged.)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait at least 8 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-976, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667602

1.INSPECTION START

Will CONSULT be used?

Will CONSULT be used?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK EVAP CANISTER VENT CONTROL VALVE CIRCUIT

(P)With CONSULT

- 1. Turn ignition switch OFF and then ON.
- 2. Select "VENT CONTROL/V" in "ACTIVE TEST" mode with CONSULT.
- Touch "ON/OFF" on CONSULT screen.
- Check for operating sound of the valve.

Clicking sound should be heard.

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 3.

3. CHECK EVAP CANISTER VENT CONTROL VALVE POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect EVAP canister vent control valve harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 3. Turn ignition switch ON.
- 4. Check the voltage between EVAP canister vent control valve harness connector and ground.

EVAP canister v	rent control valve	Ground	Voltage	
Connector Terminal		Ground	voltage	
B21	1	Ground	Battery voltage	

EC

Α

Is the inspection result normal?

YES >> GO TO 4.

NO >> Perform the trouble diagnosis for power supply circuit.

f 4.CHECK EVAP CANISTER VENT CONTROL VALVE OUTPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between ECM harness connector and EVAP canister vent control valve harness connector.

Refer to Wiring Diagram.

F

EVAP canister v	vent control valve	E	CM	Continuity
Connector Terminal		Connector	Terminal	Continuity
B21	2	E19	141	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK RUBBER TUBE FOR CLOGGING

- 1. Disconnect rubber tube connected to EVAP canister vent control valve.
- Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Clean the rubber tube using an air blower.

6. CHECK EVAP CANISTER VENT CONTROL VALVE

Check EVAP canister vent control valve. Refer to EC-977, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD models), <u>FL-29, "AWD : Removal and Installation"</u> (AWD models).

Component Inspection

INFOID:0000000011667603

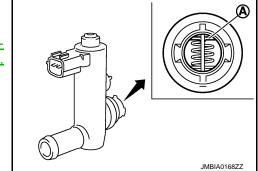
1. CHECK EVAP CANISTER VENT CONTROL VALVE-I

- Remove EVAP canister vent control valve from EVAP canister. Refer to <u>FL-26, "2WD : Removal and Installation"</u>(2WD) or <u>FL-29, "AWD : Removal and Installation"</u>(AWD).
- 2. Check portion (A) of EVAP canister vent control valve for rust.

Is it rusted?

YES >> Replace EVAP canister vent control valve. Refer to <u>FL-26</u>, "2WD : Removal and Installation" (2WD) or <u>FL-29</u>, "AWD : Removal and Installation" (AWD).

NO >> GO TO 2.



Revision: 2014 October EC-977 2015 JUKE

D

G

. .

J

K

L

N

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2.check evap canister vent control valve-ii

(F) With CONSULT

- 1. Reconnect harness connectors disconnected.
- 2. Turn ignition switch ON.
- 3. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
- 4. Check air passage continuity and operation delay time.

Check that new O-ring is installed properly.

Condition VENT CONTROL/V	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed

Operation takes less than 1 second.

♥Without CONSULT

- I. Disconnect EVAP canister vent control valve harness connector.
- Check air passage continuity and operation delay time under the following conditions.

Check that new O-ring is installed properly.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3.CHECK EVAP CANISTER VENT CONTROL VALVE-III

(II) With CONSULT

- 1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.
- 2. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
- 3. Check air passage continuity and operation delay time.

Check that new O-ring is installed properly.

Condition VENT CONTROL/V	Air passage continuity between (A) and (B)
ON	No
OFF	Yes

Operation takes less than 1 second.

♥Without CONSULT

- 1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.
- 2. Check air passage continuity and operation delay time under the following conditions.

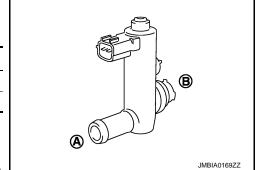
Check that new O-ring is installed properly.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals (1) and (2)	No
OFF	Yes

Operation takes less than 1 second.

Is the inspection result normal?

YES >> INSPECTION END



.IMBIA016977

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Removal and Installation"</u>(2WD) or <u>FL-29, "AWD : Removal and Installation"</u>(AWD).

EC

Α

D

Е

F

G

Н

J

K

L

M

Ν

0

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0448 EVAP CANISTER VENT CONTROL VALVE

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0448	VENT CONTROL VALVE (Evaporative emission system vent control circuit shorted)	EVAP canister vent control valve remains closed under specified driving conditions.	EVAP canister vent control valve EVAP control system pressure sensor and the circuit Blocked rubber tube to EVAP canister vent control valve EVAP canister is saturated with water

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

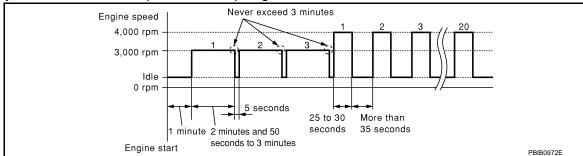
2. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON and select "DATA MONITOR" mode with CONSULT.
- 4. Start engine and let it idle for at least 1 minute.
- 5. Repeat next procedures 3 times.
- Increase the engine speed up to 3,000 to 3,500 rpm and keep it for 2 minutes and 50 seconds to 3 minutes.

Never exceed 3 minutes.

- Fully released accelerator pedal and keep engine idle for about 5 seconds.
- 6. Repeat next procedure 20 times.
- Quickly increase the engine speed up to 4,000 to 4,500 rpm or more and keep it for 25 to 30 seconds.
- Fully released accelerator pedal and keep engine idle for at least 35 seconds.



7. Repeat the step 1 to 5 three times.

NOTE:

Before starting another cycle, relief the fuel tank negative pressure with removing and refitting the fuel filler cap.

8. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-981, "Diagnosis Procedure".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011667605

Α

EC

Е

Н

M

N

1. CHECK RUBBER TUBE

- Turn ignition switch OFF.
- 2. Disconnect rubber tube connected to EVAP canister vent control valve.
- Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Clean rubber tube using an air blower.

2 .CHECK EVAP CANISTER VENT CONTROL VALVE

Check EVAP canister vent control valve. Refer to EC-982, "Component Inspection".

Is he inspection result normal?

YES >> GO TO 3.

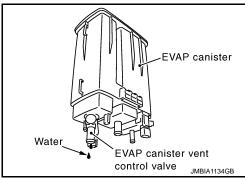
NO >> Replace EVAP canister vent control valve. Refer to FL-26, "2WD: Removal and Installation"(2WD) or FL-29, "AWD: Removal and Installation"(AWD).

3.CHECK IF EVAP CANISTER SATURATED WITH WATER

- Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached. Refer to FL-26, "2WD: Removal and Installation" (2WD) or FL-29, "AWD: Removal and Installation"(AWD).
- Check if water will drain from the EVAP canister.

Does water drain from the EVAP canister?

YES >> GO TO 4. NO >> GO TO 6.



4. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

${f 5}$.DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection
 - >> Repair hose or replace EVAP canister. Refer to FL-26, "2WD : Removal and Installation" (2WD) or FL-29, "AWD: Removal and Installation" (AWD).

6.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR

- Disconnect EVAP control system pressure sensor harness connector.
- Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD: Removal and Installation"(2WD) or FL-29, "AWD: Removal and Installation"(AWD).

EC-981 Revision: 2014 October 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

7.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check EVAP control system pressure sensor. Refer to EC-995, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace EVAP control system pressure sensor. Refer to <u>FL-26</u>, "2WD : Removal and Installation" (2WD) or <u>FL-29</u>, "AWD : Removal and Installation" (AWD).

Component Inspection

INFOID:0000000011667606

1. CHECK EVAP CANISTER VENT CONTROL VALVE-I

1. Remove EVAP canister vent control valve from EVAP canister. Refer to <u>FL-26, "2WD : Removal and Installation"</u>(2WD) or <u>FL-29, "AWD : Removal and Installation"</u>(AWD).

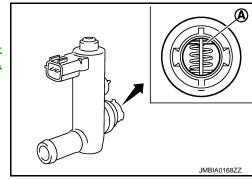
2. Check portion (A) of EVAP canister vent control valve for rust.

Is it rusted?

NO

YES >> Replace EVAP canister vent control valve. Refer to <u>FL-26</u>, "2WD : Removal and Installation" (2WD) or <u>FL-29</u>, "AWD : Removal and Installation" (AWD).

NO >> GO TO 2.



2.CHECK EVAP CANISTER VENT CONTROL VALVE-II

(I) With CONSULT

- 1. Reconnect harness connectors disconnected.
- 2. Turn ignition switch ON.
- 3. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
- 4. Check air passage continuity and operation delay time.

Check that new O-ring is installed properly.

Condition VENT CONTROL/V	Air passage continuity between (A) and (B)
ON	Not existed
OFF	Existed

Operation takes less than 1 second.

®Without CONSULT

- Disconnect EVAP canister vent control valve harness connector.
- Check air passage continuity and operation delay time under the following conditions.

Check that new O-ring is installed properly.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Not existed
OFF	Existed

Operation takes less than 1 second.

Is the inspection result normal?

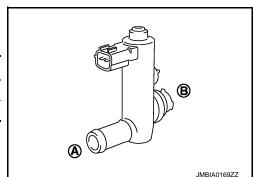
YES >> INSPECTION END

NO >> GO TO 3.

3.check evap canister vent control valve-iii

(P)With CONSULT

1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.



< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 2. Perform "VENT CONTROL/V" in "ACTIVE TEST" mode.
- 3. Check air passage continuity and operation delay time. Check that new O-ring is installed properly.

Condition VENT CONTROL/V	Air passage continuity between (A) and (B)
ON	No
OFF	Yes

Operation takes less than 1 second.

⋈Without CONSULT

1. Clean the air passage [portion (A) to (B)] of EVAP canister vent control valve using an air blower.

2. Check air passage continuity and operation delay time under the following conditions. Check that new O-ring is installed properly.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals (1) and (2)	No
OFF	Yes

Operation takes less than 1 second.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister vent control valve. Refer to <u>FL-26, "2WD : Removal and Installation"</u>(2WD) or <u>FL-29, "AWD : Removal and Installation"</u>(AWD).

t JMBIA0169ZZ

Α

EC

С

D

Е

F

L

K

N /I

Ν

0

P044A, P044E EGR VOLUME CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

P044A, P044E EGR VOLUME CONTROL VALVE POSITION SENSOR

DTC Logic INFOID:0000000011611020

DTC DETECTION LOGIC

NOTE:

If DTC P044A, or P044E is displayed with DTC P0643, first perform trouble diagnosis for DTC P0643. Refer to EC-1057, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P044A	EGR SENSOR C (EGR sensor C circuit low)	ECM detects that a voltage signal from EGR volume control valve position sensor is less than 4.81 V for 5 consecutive seconds.	Harness or connectors (EGR volume control valve position
P044E	EGR SENSOR C (EGR sensor C circuit high)	ECM detects that a voltage signal from EGR volume control valve position sensor is less than 0.275 V for 5 consecutive seconds.	sensor circuit is open or shorted.) • EGR volume control valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-984, "Diagnosis Procedure". YES

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611021

1.check egr volume control valve position sensor power supply circuit

- Turn ignition switch OFF.
- Disconnect EGR volume control valve harness connector.
- Turn ignition switch ON.
- Check voltage between EGR volume control valve harness connector and ground.

	+		V. Itaa
EGR volume	control valve	_	Voltage (Approx.)
Connector	Terminal		, , ,
F74 3		Ground	5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK EGR VOLUME CONTROL VALVE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check harness continuity between EGR volume control valve harness connector and ECM harness connector.

EC-984 Revision: 2014 October 2015 JUKE

P044A, P044E EGR VOLUME CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

	-				
	control valve	EC		Continuity	
Connector	Terminal	Connector	Terminal		
F74	5	F23	43	Existed	
		•	round and s	short to power.	
•	ction result n GO TO 3.	<u>ormai?</u>			
		place error-d	etected par	ts.	
^	•	•	•		SOR INPUT SIGNAL CIRCUIT
1. Check h	narness cont	inuity betwee	en EGR volu	ume control va	lve harness connector and ECM harness cor
nector.		, ,			
505		F.(NA 4		
	control valve	Connector		Continuity	
Connector F74	Terminal 4	Connector F24	Terminal 68	Existed	
	·				
	eck namess ction result n	•	TOUTIU ATIU S	short to power.	
	GO TO 4.	<u>uiiiai!</u>			
		place error-d	etected part	ts.	
4	•	IE CONTRO	•		
				2.040. 0.000	up and learn action (ECD Values a Control Value)
			. Reiei to 🚉	<u>5-946. Compo</u>	nent Inspection (EGR Volume Control Valve)
	ction result n		nt Doforto	CI 44 "Interm	ittent Incident".
					EC-588, "ENGINE CONTROL SYSTEM
		Parts Locat			
Compone	nt Inspec	tion (EGR	Volume	Control Val	/e)
	•	•			,
I .CHECK	EGR VOLUN	IE CONTRO	L VALVE-1		
With CON	ISULT				
		ON and engi			CCT" "ECD CONTROL MAINE"
					EST" >> "EGR CONTROL VALVE". 0 deg, and check value "V1" of "EGR VALVI
	ON SEN".	JWII, JOC LC)	COITION to	o deg, and oneon value vi or EGN VALV
Does "V1" b	ecome 1.2±0	0.15 V?			
	GO TO 2.				
				lve. Refer to	EC-588, "ENGINE CONTROL SYSTEM
_	•	Parts Locat			
∠.CHECK I	EGR VOLUN	IE CONTRO	L VALVE-2		
With CON					
		wn", set "EG	R VALVE F	POSITION" to	70 deg, and check value "V2" of "EGR VALVI
	ON SEN".	2.45.1/0			
	<u>ecome 4.0±0</u> GO TO 3.	J.15 V?			

>> Replace EGR volume control valve. Refer to EC-588, "ENGINE CONTROL SYSTEM : NO Component Parts Location".

3.CHECK EGR VOLUME CONTROL VALVE VISUALLY

- Turn ignition switch OFF.
- 2. Check if any foreign objects interferes with EGR volume control valve.

Is the inspection result normal?

EC-985 Revision: 2014 October **2015 JUKE**

P044A, P044E EGR VOLUME CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

YES >> INSPECTION END NO >> Repair or replace the error-detected parts.

P044B EXHAUST GAS RECIRCULATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P044B EXHAUST GAS RECIRCULATION SYSTEM

DTC Logic INFOID:0000000011670892

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P044B	EGR SENSOR C (EGR sensor C circuit range/ performance)	 ECM detects the following status continuously for 0.5 seconds or more: A voltage signal transmitted from the EGR volume control valve position sensor is between 0.32 V and 1.08 V under the following conditions: After the ignition switch is turned OFF and the engine is stopped by "Self Shut-OFF". This diagnosis works only when the ignition switch is turned OFF and the engine is stopped by "Self Shut-OFF". Engine coolant temperature: 65°C (149°F) or more Intake air temperature: 5°C (41°F) or more 	EGR volume control valve is stuck EGR volume control valve is jammed with foreign objects Improper specification of EGR volume control valve position sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at ignition switch ON.

>> GO TO 2.

2.perform dtc confirmation procedure

- Turn ignition switch ON.
- 2. Select "DATA MONITOR" mode with CONSULT.
- 3. Check that "COOLANT TEMP/S" indicates 65°C (149°F) or more.
- 4. Check that "INT/A TEMP SE" indicates 5°C (41°F) or more.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-987, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

 ${f 1}$.CHECK EGR VOLUME CONTROL VALVE POSITION SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect EGR volume control valve harness connector.
- 3. Turn ignition switch ON.
- 4. Check voltage between EGR volume control valve harness connector and ground.

EGR volume	control valve	_	Voltage (Approx.)	
Connector	Terminal		(11 /	
F74	3	Ground	5 V	

EC-987 Revision: 2014 October 2015 JUKE

Α

D

Е

K

M

Ν

INFOID:0000000011670893

P044B EXHAUST GAS RECIRCULATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 2. NO >> GO TO 5.

2.check egr volume control valve position sensor ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check harness continuity between EGR volume control valve harness connector and ECM harness connector.

+			_	
EGR volume	control valve	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F74	5	F23	43	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK EGR VOLUME CONTROL VALVE POSITION SENSOR INPUT SIGNAL CIRCUIT

 Check harness continuity between EGR volume control valve harness connector and ECM harness connector.

+		_		
EGR volume	control valve	ECM		Continuity
Connector	Terminal	Connector Terminal		
F74	4	F24	68	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK EGR VOLUME CONTROL VALVE

Check the EGR volume control valve. Refer to <u>EC-946, "Component Inspection (EGR Volume Control Valve)"</u>. <u>Is the inspection result normal?</u>

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EGR volume control valve. Refer to <u>EC-588, "ENGINE CONTROL SYSTEM : Component Parts Location".</u>

5. CHECK EGR VOLUME CONTROL VALVE POSITION SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between EGR volume control valve harness connector and ECM harness connector.

	+		_	
EGR volume	control valve	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F74	3	F23	30	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for ECM power supply circuit. Refer to <u>EC-777, "Diagnosis Procedure"</u>.

NO >> Repair or replace error-detected parts.

P044B EXHAUST GAS RECIRCULATION SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Component Inspection (EGR Volume Control Valve)

INFOID:0000000011670894

1. CHECK EGR VOLUME CONTROL VALVE-1

(P)With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "ACTIVE TEST" >> "EGR CONTROL VALVE".
- Operate "Up" or "Down", set "EGR VALVE POSITION" to 0 deg, and check value of "EGR VALVE POSI-TION SEN".

Does value become 1.2±0.15 V?

YES >> GO TO 2.

NO >> Replace EGR volume control valve. Refer to EM-238, "Removal and Installation".

2.CHECK EGR VOLUME CONTROL VALVE-2

(P)With CONSULT

Operate "Up" or "Down", set "EGR VALVE POSITION" to 70 deg, and check value of "EGR VALVE POSI-TION SEN".

Does value become 4.0±0.15 V?

YES >> INSPECTION END

NO >> Replace EGR volume control valve. Refer to EM-238, "Removal and Installation". EC

Α

D

C

Е

F

Н

K

L

M

Ν

P044C, P044D EGR VOLUME CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

P044C, P044D EGR VOLUME CONTROL VALVE POSITION SENSOR

DTC Logic INFOID:0000000011672588

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P044C	EGR SENSOR C (EGR sensor C circuit low)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the EGR volume control valve position sensor is 0.32 V or less.	Harness or connectors (EGR volume control valve position)
P044D	EGR SENSOR C (EGR sensor C circuit high)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the EGR volume control valve position sensor is 4.67 V or more.	sensor circuit is open or shorted.) • EGR volume control valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-990, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011672589

${f 1}$.CHECK EGR VOLUME CONTROL VALVE POSITION SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect EGR volume control valve harness connector.
- Turn ignition switch ON.
- 4. Check voltage between EGR volume control valve harness connector and ground.

+) / I
EGR volume control valve		_	Voltage (Approx.)
Connector	Terminal		() 1 - /
F74	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 2. NO >> GO TO 5.

2.CHECK EGR VOLUME CONTROL VALVE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.

P044C, P044D EGR VOLUME CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

Α

EC

D

Е

F

Check harness continuity between EGR volume control valve harness connector and ECM harness connector.

EGR volume	EGR volume control valve		ECM	
Connector	Terminal	Connector	Terminal	Continuity
F74	5	F23	43	Existed

Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK EGR VOLUME CONTROL VALVE POSITION SENSOR INPUT SIGNAL CIRCUIT

Check harness continuity between EGR volume control valve harness connector and ECM harness connector.

EGR volume control valve		ECM		Continuity
Connector	Terminal	Connector Terminal		Continuity
F74	4	F24	68	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

f 4.CHECK EGR VOLUME CONTROL VALVE

Check the EGR volume control valve. Refer to EC-946, "Component Inspection (EGR Volume Control Valve)". Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace EGR volume control valve. Refer to EC-588, "ENGINE CONTROL SYSTEM : NO Component Parts Location".

${f 5.}$ CHECK EGR VOLUME CONTROL VALVE POSITION SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EGR volume control valve harness connector and ECM harness connector.

EGR volume control valve		ECM		Continuity
Connector	Terminal	Connector Terminal		Continuity
F74	3	F23	30	Existed

Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for ECM power supply circuit. Refer to EC-777, "Diagnosis Procedure".

NO >> Repair or replace error-detected parts.

Component Inspection (EGR Volume Control Valve)

CHECK EGR VOLUME CONTROL VALVE-1

(P)With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "ACTIVE TEST" >> "EGR CONTROL VALVE".
- Operate "Up" or "Down", set "EGR VALVE POSITION" to 0 deg, and check value of "EGR VALVE POSI-TION SEN".

Does value become 1.2±0.15 V?

Ν

INFOID:0000000011733343

EC-991 Revision: 2014 October 2015 JUKE

P044C, P044D EGR VOLUME CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

YES >> GO TO 2.

NO >> Replace EGR volume control valve. Refer to EM-238, "Removal and Installation".

 $2.\mathsf{CHECK}$ EGR VOLUME CONTROL VALVE-2

(P)With CONSULT

1. Operate "Up" or "Down", set "EGR VALVE POSITION" to 70 deg, and check value of "EGR VALVE POSI-TION SEN".

Does value become 4.0±0.15 V?

YES >> INSPECTION END

>> Replace EGR volume control valve. Refer to EM-238, "Removal and Installation". NO

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0451 EVAP CONTROL SYSTEM PRESSURE SENSOR

DTC Logic INFOID:0000000011667607

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0451	EVAP SYS PRES SEN (Evaporative emission sys- tem pressure sensor/switch range/performance)	ECM detects a sloshing signal from the EVAP control system pressure sensor	Harness or connectors (EVAP control system pressure sensor circuit is shorted.) EVAP control system pressure sensor

DTC CONFIRMATION PROCEDURE

Never remove fuel filler cap during DTC confirmation procedure.

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- (P)With CONSULT>>GO TO 2.
- Without CONSULT>>GO TO 5.

2 PERFORM DTC CONFIRMATION PROCEDURE-1

- (P)With CONSULT
- Start engine and let it idle for least 40 seconds.

Do not depress accelerator pedal even slightly.

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-994, "Diagnosis Procedure".

NO >> GO TO 3.

3.PERFORM DTC CONFIRMATION PROCEDURE-2

With CONSULT

- Select "EVAP DIAG READY" in "DATA MONITOR" mode of "ENGINE".
- 2. Let it idle until "OFF" of "EVAP DIAG READY" changes to "ON".

It will take at most 2 hours until "OFF" of "EVAP DIAG READY" changes to "ON".

3. Turn ignition switch OFF and wait at least 90 minutes.

NOTE:

Never turn ignition switch ON during 90 minutes.

- Turn ignition switch ON.
- 5. Select "EVAP LEAK DIAG" in "DATA MONITOR" mode of "ENGINE".
- 6. Check that "EVAP LEAK DIAG" indication.

Which is displayed on CONSULT?

CMPLT>> GO TO 4.

>> 1. Perform DTC CONFIRMATION PROCEDURE again.

2. GO TO 1.

4.PERFORM DTC CONFIRMATION PROCEDURE-3

(P)With CONSULT

Check 1st trip DTC.

Is 1st trip DTC detected?

EC-993 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

N

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> Proceed to EC-994, "Diagnosis Procedure".

NO >> INSPECTION END

5. PERFORM DTC CONFIRMATION PROCEDURE-4

With GST

1. Start engine and let it idle for least 40 seconds.

NOTE:

Do not depress accelerator pedal even slightly.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-994, "Diagnosis Procedure".

NO >> GO TO 6.

6.PERFORM DTC CONFIRMATION PROCEDURE-5

- 1. Let it idle for at least 2 hours.
- 2. Turn ignition switch OFF and wait at least 90 minutes.

NOTE:

Never turn ignition switch ON during 90 minutes.

- Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-994</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667608

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR CONNECTOR FOR WATER

- 1. Disconnect EVAP control system pressure sensor harness connector.
- 2. Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY

- 1. Turn ignition switch ON.
- 2. Check the voltage between EVAP control system pressure sensor harness connector and ground.

	+		
EVAP control syste	em pressure sensor	_	Voltage (V)
Connector Terminal			
B22	3	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B22	3	E19	125	Existed

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

f 4.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control syste	VAP control system pressure sensor ECM		Continuity	
Connector	Terminal	Connector Terminal		Continuity
B22	1	E19	148	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check EVAP control system pressure sensor. Refer to <a>EC-995, <a>"Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD), <u>FL-29, "AWD : Removal and Installation"</u> (AWD).

Component Inspection

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

- Turn ignition switch OFF.
- 2. Remove EVAP control system pressure sensor with its harness connector. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD), <u>FL-29, "AWD : Removal and Installation"</u> (AWD).

Always replace O-ring with a new one.

- 3. Install a vacuum pump to EVAP control system pressure sensor.
- 4. Turn ignition switch ON and check output voltage between ECM terminals under the following conditions.

ECM			Applied vacuum kPa		
Connector	+	_	Applied vacuum kPa (kg/cm ² , psi)	Voltage	
Connector	Terminal	Terminal	(Ng/6111 , pol)		
			Not applied	1.8 - 4.8 V	
E19	121	148	-26.7 (-0.272, -3.87)	2.1 to 2.5 V lower than above value	

CAUTION:

- . Always calibrate the vacuum pump gauge when using it.
- Never apply below -93.3 kPa (-0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD), FL-29, "AWD : Removal and Installation" (AWD).

0

Α

EC

Е

D

_

G

INFOID:0000000011667609

L

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0452 EVAP CONTROL SYSTEM PRESSURE SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0452	EVAP SYS PRES SEN (Evaporative emission system pressure sensor/switch low)	An excessively low voltage from the sensor is sent to ECM.	Harness or connectors (EVAP control system pressure sensor circuit is open or shorted.) EVAP control system pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

(A) With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON.
- 6. Select "DATA MONITOR" mode with CONSULT.
- 7. Check that "FUEL T/TMP SE" is more than 0°C (32°F).
- 8. Start engine and wait at least 20 seconds.
- 9. Check 1st trip DTC.

With GST

- 1. Start engine and warm it up to normal operating temperature.
- 2. Set voltmeter probes to ECM harness connector terminals under the following conditions.

ECM					
Connector	+	_			
Connector	Terr	minal			
E19	128	148			

- 3. Check that the voltage is less than 4.2 V.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON.
- 6. Turn ignition switch OFF and wait at least 10 seconds.
- 7. Start engine and wait at least 20 seconds.
- 8. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-997</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011667611

1. CHECK CONNECTOR

- 1. Disconnect EVAP control system pressure sensor harness connector.
- 2. Check that water is not inside connector.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness connector.

С

2.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY

- Turn ignition switch ON.
- Check the voltage between EVAP control system pressure sensor harness connector and ground.

	+			
EVAP control syste	em pressure sensor	_	Voltage (V)	
Connector Terminal				
B22	3	Ground	Approx. 5	

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY CIRCUIT

. Turn ignition switch OFF.

- 2. Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control system pressure sensor		E	CM	Continuity
Connector	Terminal	Terminal Connector		Continuity
B22	3	E19	125	Existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace harness connector.

4.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control syste	em pressure sensor	E	CM	Continuity
Connector	Terminal	Connector Terminal		Continuity
B22	1	E19	148	Existed

Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

${f 5.}$ CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EC-997

EC

Α

D

Е

C

Н

J

K

L

Ν

M

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

EVAP control system pressure sensor		E	СМ	Continuity
Connector	Terminal	l Connector Terminal		Continuity
B22	2	E19	121	Existed

2. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check EVAP control system pressure sensor. Refer to EC-998, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD : Removal and Installation" (2WD), FL-29, "AWD : Removal and Installation" (AWD).

Component Inspection

INFOID:0000000011667612

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

- 1. Turn ignition switch OFF.
- Remove EVAP control system pressure sensor with its harness connector. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD), <u>FL-29, "AWD : Removal and Installation"</u> (AWD).

Always replace O-ring with a new one.

- 3. Install a vacuum pump to EVAP control system pressure sensor.
- 4. Turn ignition switch ON and check output voltage between ECM terminals under the following conditions.

ECM			Applied veguum kDe		
Connector	+	_	Applied vacuum kPa (kg/cm ² , psi)	Voltage	
Connector	Terminal	Terminal	(Ng/om , pol)		
			Not applied	1.8 - 4.8 V	
E19	121	148	-26.7 (-0.272, -3.87)	2.1 to 2.5 V lower than above value	

CAUTION:

- Always calibrate the vacuum pump gauge when using it.
- Never apply below -93.3 kPa (-0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD), <u>FL-29, "AWD : Removal and Installation"</u> (AWD).

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0453 EVAP CONTROL SYSTEM PRESSURE SENSOR

DTC Logic

DTC DETECTION LOGIC

		EC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause	С
P0453	EVAP SYS PRES SEN (Evaporative emission system pressure sensor/switch high)	An excessively high voltage from the sensor is sent to ECM.	Harness or connectors (EVAP control system pressure sensor circuit is open or shorted.) EVAP control system pressure sensor EVAP canister vent control valve EVAP canister Rubber hose from EVAP canister vent control valve to vehicle frame	D

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Always perform test at a temperature of 5°C (41°F) or more.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON.
- 6. Select "DATA MONITOR" mode with CONSULT.
- 7. Check that "FUEL T/TMP SE" is more than 0°C (32°F).
- 8. Start engine and wait at least 20 seconds.
- 9. Check 1st trip DTC.

■With GST

- 1. Start engine and warm it up to normal operating temperature.
- 2. Set voltmeter probes to ECM harness connector terminals.

ECM					
Connector	+	_			
Connector	Terr	ninal			
E19	128	148			

- Check that the voltage is less than 4.2 V.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON.
- 6. Turn ignition switch OFF and wait at least 10 seconds.
- Start engine and wait at least 20 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1000, "Diagnosis Procedure".

Revision: 2014 October EC-999 2015 JUKE

Ν

F

Н

0

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667614

1. CHECK CONNECTOR

- 1. Disconnect EVAP control system pressure sensor harness connector.
- 2. Check that water is not inside connectors.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace harness connector.

2.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY

- 1. Turn ignition switch ON.
- 2. Check the voltage between EVAP control system pressure sensor harness connector and ground.

	+		
EVAP control syste	em pressure sensor	_	Voltage (V)
Connector Terminal			
B22	3	Ground	Approx. 5

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

3.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		Continuity
B22	3	E19	125	Existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair open circuit.

f 4.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B22	1	E19	148	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

5. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between EVAP control system pressure sensor harness connector and ECM harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

EVAP control system pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
B22	2	E19	121	Existed

Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

6.CHECK RUBBER TUBE

- Disconnect rubber tube connected to EVAP canister vent control valve.
- Check the rubber tube for clogging.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Clean the rubber tube using an air blower, repair or replace rubber tube.

.CHECK EVAP CANISTER VENT CONTROL VALVE

Check EVAP canister vent control valve. Refer to EC-1002, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace EVAP canister vent control valve. Refer to FL-26, "2WD: Removal and Installation" (2WD), FL-29, "AWD: Removal and Installation" (AWD).

8. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check EVAP control system pressure sensor. Refer to EC-1002, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 9.

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD: Removal and Installation" (2WD), FL-29, "AWD: Removal and Installation" (AWD).

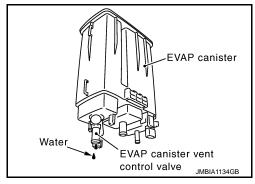
9.CHECK IF EVAP CANISTER IS SATURATED WITH WATER

- Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached. Refer to FL-26, "2WD: Removal and Installation" (2WD), FL-29, "AWD: Removal and Installation" (AWD).
- Check if water will drain from the EVAP canister.

Does water drain from the EVAP canister?

YES >> GO TO 10.

NO >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".



10. CHECK EVAP CANISTER

Weigh the EVAP canister with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 11.

11. DETECT MALFUNCTIONING PART

Check the following.

EVAP canister for damage

EC-1001 Revision: 2014 October 2015 JUKE

Α

EC

Е

Н

M

Ν

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection
 - >> Repair hose or replace EVAP canister. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD), <u>FL-29, "AWD : Removal and Installation"</u> (AWD).

Component Inspection

INFOID:0000000011667615

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

- 1. Turn ignition switch OFF.
- Remove EVAP control system pressure sensor with its harness connector. Refer to <u>FL-26</u>, "2WD : <u>Removal and Installation"</u> (2WD), <u>FL-29</u>, "AWD : <u>Removal and Installation"</u> (AWD).
 Always replace O-ring with a new one.
- 3. Install a vacuum pump to EVAP control system pressure sensor.
- 4. Turn ignition switch ON and check output voltage between ECM terminals under the following conditions.

ECM			Applied ve evum kDe	
Connector	+	_	Applied vacuum kPa (kg/cm ² , psi)	Voltage
	Terminal	Terminal		
	121	148	Not applied	1.8 - 4.8 V
E19			-26.7 (-0.272, -3.87)	2.1 to 2.5 V lower than above value

CAUTION:

- Always calibrate the vacuum pump gauge when using it.
- Never apply below -93.3 kPa (-0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Removal and Installation"</u> (2WD), <u>FL-29, "AWD : Removal and Installation"</u> (AWD).

Α

EC

D

Е

F

Н

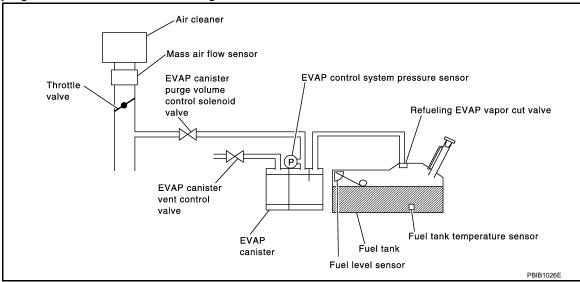
P0456 EVAP CONTROL SYSTEM

DTC Logic

DTC DETECTION LOGIC

This diagnosis detects leaks in the EVAP line between fuel tank and EVAP canister purge volume control solenoid valve, using the negative pressure caused by decrease of fuel temperature in the fuel tank after turning ignition switch OFF.

If ECM judges there are no leaks, the diagnosis will be OK.



P0456 EVAP VERY SML LEAK [Evaporative emission system leak detected (very small leak)] • EVAP system has a leak. • EVAP system does not operate properly. • EVAP canister vent control valve and the circuit • Fuel tank temperature sensor • O-ring of EVAP canister vent control valve is missing or damaged • EVAP canister vent control valve is missing or damaged • EVAP canister vent control valve is missing or damaged • EVAP canister vent control valve is missing or damaged • EVAP canister vent control valve is missing or damaged • EVAP canister vent control valve is missing or damaged • EVAP canister is saturated with water • EVAP canister is saturated with water • EVAP control system pressure sensor • Refueling EVAP vapor cut valve	DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
ORVR system leaks Fuel level sensor and the circuit Foreign matter caught in EVAP canister purge volume control solenoid valve	P0456	[Evaporative emission system leak detected (very	EVAP system does not	 Incorrect fuel filler cap used Fuel filler cap remains open or fails to close. Foreign matter caught in fuel filler cap. Leak is in line between intake manifold and EVAP canister purge volume control solenoid valve. Foreign matter caught in EVAP canister vent control valve. EVAP canister or fuel tank leaks EVAP purge line (pipe and rubber tube) leaks EVAP purge line rubber tube bent Loose or disconnected rubber tube EVAP canister vent control valve and the circuit EVAP canister purge volume control solenoid valve and the circuit Fuel tank temperature sensor O-ring of EVAP canister vent control valve is missing or damaged EVAP canister is saturated with water EVAP control system pressure sensor Refueling EVAP vapor cut valve ORVR system leaks Fuel level sensor and the circuit Foreign matter caught in EVAP canister purge volume con-

CAUTION:

- Use only a genuine NISSAN fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may come on.
- If the fuel filler cap is not tightened properly, the MIL may come on.
- Use only a genuine NISSAN rubber tube as a replacement.

DTC CONFIRMATION PROCEDURE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 4.

2.perform dtc confirmation procedure-i

With CONSULT

- 1. Turn ignition switch ON and select "EVAP DIAG READY" in "DATA MONITOR" mode with CONSULT.
- 2. Start engine and wait at idle until "OFF" of "EVAP DIAG READY" changes to "ON".

NOTE:

It will take at most 2 hours until "OFF" of "EVAP DIAG READY" changes to "ON".

3. Turn ignition switch OFF and wait at least 90 minutes.

NOTE:

Never turn ignition switch ON during 90 minutes.

- 4. Turn ignition switch ON and select "EVAP LEAK DIAG" in "DATA MONITOR" mode with CONSULT.
- 5. Check that "EVAP LEAK DIAG" indication.

Which is displayed on CONSULT?

CMPLT>> GO TO 3.

YET >> Perform DTC CONFIRMATION PROCEDURE again. GO TO 1.

3.perform dtc confirmation procedure-ii $\,$

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Go to EC-1004, "Diagnosis Procedure".

NO >> INSPECTION END.

4. PERFORM DTC CONFIRMATION PROCEDURE

With GST

- 1. Start engine and wait engine idle for at least 2 hours.
- 2. Turn ignition switch OFF and wait at least 90 minutes.

NOTE:

Never turn ignition switch ON during 90 minutes.

- Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Go to EC-1004, "Diagnosis Procedure".

NO >> INSPECTION END.

Diagnosis Procedure

INFOID:0000000011667617

1. CHECK FUEL FILLER CAP DESIGN

1. Turn ignition switch OFF.

< DTC/CIRCUIT DIAGNOSIS >

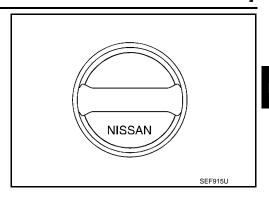
[MR EXCEPT FOR NISMO RS MODELS]

Check for genuine NISSAN fuel filler cap design.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace with genuine NISSAN fuel filler cap.



2.CHECK FUEL FILLER CAP INSTALLATION

Check that the cap is tightened properly by rotating the cap clockwise.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Open fuel filler cap, then clean cap and fuel filler neck threads using air blower. Then retighten until ratcheting sound is heard.

3.CHECK FUEL FILLER CAP FUNCTION

Check for air releasing sound while opening the fuel filler cap.

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

f 4.CHECK FUEL TANK VACUUM RELIEF VALVE

Refer to EC-1008, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace fuel filler cap with a genuine one.

CHECK FOR EVAP LEAK

Refer to EC-1252, "Inspection".

Is there any leak in EVAP line?

YES >> Repair or replace.

NO >> GO TO 6.

6.CHECK EVAP CANISTER VENT CONTROL VALVE

Check the following.

EVAP canister vent control valve is installed properly.

Refer to FL-26, "2WD: Removal and Installation" (2WD) or FL-29, "AWD: Removal and Installation" (AWD).

EVAP canister vent control valve.

Refer to EC-977, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace EVAP canister vent control valve and O-ring.

7.CHECK IF EVAP CANISTER SATURATED WITH WATER

EC

Α

D

Е

F

Н

Ν

< DTC/CIRCUIT DIAGNOSIS >

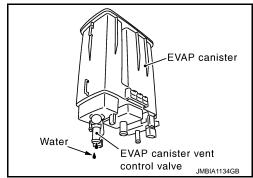
[MR EXCEPT FOR NISMO RS MODELS]

- Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
- 2. Check if water will drain from the EVAP canister.

Does water drain from EVAP canister?

YES >> GO TO 8.

NO-1 >> With CONSULT: GO TO 10. NO-2 >> Without CONSULT: GO TO 11.



8. CHECK EVAP CANISTER

Weigh the EVAP canister assembly with the EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

YES-1 >> With CONSULT: GO TO 10.

YES-2 >> Without CONSULT: GO TO 11.

NO >> GO TO 9.

9. DETECT MALFUNCTIONING PART

Check the following.

- EVAP canister for damage
- EVAP hose between EVAP canister and vehicle frame for clogging or poor connection

>> Repair hose or replace EVAP canister.

10.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

(P)With CONSULT

- 1. Disconnect vacuum hose to EVAP canister purge volume control solenoid valve at EVAP service port.
- 2. Start engine and let it idle.
- 3. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode.
- 4. Touch "Qu" on CONSULT screen to increase "PURG VOL CONT/V" opening to 100%.
- 5. Check vacuum hose for vacuum.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 12.

11. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE OPERATION

♥Without CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Stop engine.
- 3. Disconnect vacuum hose to EVAP canister purge volume control solenoid valve at EVAP service port.
- 4. Start engine and let it idle for at least 80 seconds.
- 5. Check vacuum hose for vacuum when revving engine up to 2,000 rpm.

Vacuum should exist.

Is the inspection result normal?

YES >> GO TO 13.

NO >> GO TO 12.

12. CHECK VACUUM HOSE

Check vacuum hoses for clogging or disconnection. Refer to <u>FL-26, "2WD : Exploded View"</u>(2WD) or <u>FL-29, "AWD : Exploded View"</u>(AWD).

< DTC/CIRCUIT DIAGNOSIS >	MR EXCEPT FOR NISMO RS MODELS]
Is the inspection result normal?	
YES >> GO TO 13.	
NO >> Repair or reconnect the hose.	I ENGIB VALVE
13. CHECK EVAP CANISTER PURGE VOLUME CONTROL SO	LENOID VALVE
Refer to EC-971, "Component Inspection".	
Is the inspection result normal?	
YES >> GO TO 14. NO >> Replace EVAP canister purge volume control solenoid	Lyalve
14. CHECK FUEL TANK TEMPERATURE SENSOR	, valvo.
Refer to <u>EC-901</u> , "Component Inspection". <u>Is the inspection result normal?</u>	
YES >> GO TO 15.	
NO >> Replace fuel level sensor unit.	
15. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR	
Refer to EC-995, "Component Inspection".	
Is the inspection result normal?	
YES >> GO TO 16.	
NO >> Replace EVAP control system pressure sensor.	(
16.check evap purge line	
Check EVAP purge line (pipe, rubber tube, fuel tank and EVAP car Refer to FL-25, "2WD: Hydraulic Layout"(2WD) or FL-27, "AWD: I	
Is the inspection result normal?	
YES >> GO TO 17.	
NO >> Repair or reconnect the hose.	
17.CLEAN EVAP PURGE LINE	
Clean EVAP purge line (pipe and rubber tube) using air blower.	
>> GO TO 18.	
18. CHECK EVAP/ORVR LINE	
Check EVAP/ORVR line between EVAP canister and fuel tank for conection. For location, refer to FL-25, "2WD: Hydraulic Layout"	
out"(AWD).	
Is the inspection result normal?	
YES >> GO TO 19.	1
NO >> Repair or replace hoses and tubes.	
19.check recirculation line	for clonging kink cracks looseness and
Check recirculation line between fuel filler tube and fuel tank improper connection.	for clogging, kink, cracks, looseness and
Is the inspection result normal?	
YES >> GO TO 20.	
NO >> Repair or replace hose, tube or fuel filler tube.	
20. CHECK REFUELING EVAP VAPOR CUT VALVE	
Refer to FL-27, "2WD: Inspection" (2WD) or FL-30, "AWD: Inspec	tion"(AWD).
Is the inspection result normal?	•

Refer to EC-1008, "Component Inspection".

21. CHECK FUEL LEVEL SENSOR

YES >> GO TO 21.
NO >> Replace refueling EVAP vapor cut valve with fuel tank.

Revision: 2014 October EC-1007 2015 JUKE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 22.

NO >> Replace fuel level sensor unit.

22. CHECK INTERMITTENT INCIDENT

Refer to GI-44, "Intermittent Incident".

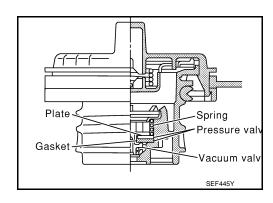
>> INSPECTION END

Component Inspection

INFOID:0000000011667618

1. CHECK FUEL FILLER CAP

- 1. Turn ignition switch OFF.
- 2. Remove fuel filler cap.
- 3. Wipe clean valve housing.



- 4. Install fuel filler cap adapter (commercial service tool) to fuel filler cap.
- 5. Check valve opening pressure and vacuum.

Pressure: 15.3 - 20.0 kPa (0.156 - 0.204 kg/cm², 2.22 -

2.90 psi)

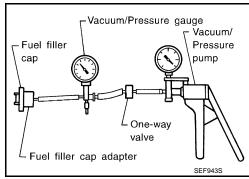
Vacuum: −6.0 to −3.3 kPa (−0.061 to −0.034 kg/cm²,

-0.87 to -0.48 psi)

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.



2. REPLACE FUEL FILLER CAP

Replace fuel filler cap.

CAUTION:

Use only a genuine fuel filler cap as a replacement. If an incorrect fuel filler cap is used, the MIL may illuminate.

>> INSPECTION END

P0460 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0460 FUEL LEVEL SENSOR

DTC Logic INFOID:0000000011667619

DTC DETECTION LOGIC

NOTE:

- If DTC P0460 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0460 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to EC-1051, "DTC Logic".

When the vehicle is parked, the fuel level in the fuel tank is naturally stable. It means that output signal of the fuel level sensor does not change. If ECM senses sloshing signal from the sensor, fuel level sensor malfunction is detected.

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0460	FUEL LEV SEN SLOSH (Fuel level sensor "A" circuit)	Even though the vehicle is parked, a signal being varied is sent from the fuel level sensor to ECM.	Harness or connectors (The CAN communication line is open or shorted) Harness or connectors (The sensor circuit is open or shorted) Combination meter Fuel level sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and wait maximum of 2 consecutive minutes.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1009, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1 -CHECK COMBINATION METER FUNCTION

Check combination meter function. Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YFS >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to MWI-51, "Diagnosis Procedure". EC

Α

Е

D

F

Н

INFOID:0000000011667620

Р

Ν

P0461 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0461 FUEL LEVEL SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0461 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0461 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-1051</u>, "DTC Logic".

Driving long distances naturally affect fuel gauge level.

This diagnosis detects the fuel gauge malfunction of the gauge not moving even after a long distance has been driven.

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0461	FUEL LEVEL SENSOR (Fuel level sensor "A" circuit range/performance)	The output signal of the fuel level sensor does not change within the specified range even though the vehicle has been driven a long distance.	Harness or connectors (The CAN communication line is open or shorted) Harness or connectors (The sensor circuit is open or shorted) Combination meter Fuel level sensor

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-1010, "Component Function Check".

Use component function check to check the overall function of the fuel level sensor. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1011, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011667622

1.PRECONDITIONING

WARNING:

When performing the following procedure, always observe the handling of the fuel. Refer to <u>FL-2</u>, <u>"General Precautions"</u>.

TESTING CONDITION:

Before starting component function check, preparation of draining fuel and refilling fuel is required.

Will CONSULT be used?

YES >> GO TO 2. NO >> GO TO 3.

100 // 00 10 3.

2.PERFORM COMPONENT FUNCTION CHECK

(P)With CONSULT

NOTE:

Start from step 10, if it is possible to confirm that the fuel cannot be drained by 30 $\,\ell$ (7-7/8 US gal, 6-5/8 Imp gal) in advance.

- 1. Prepare a fuel container and a spare hose.
- Release fuel pressure from fuel line, refer to EC-756, "Work Procedure".
- 3. Remove the fuel feed hose on the fuel level sensor unit.
- 4. Connect a spare fuel hose where the fuel feed hose was removed.
- Turn ignition switch OFF and wait at least 10 seconds then turn ON.
- 6. Select "FUEL LEVEL SE" in "DATA MONITOR" mode with CONSULT.
- 7. Check "FUEL LEVEL SE" output voltage and note it.
- Select "FUEL PUMP RELAY" in "ACTIVE TEST" mode with CONSULT.

P0461 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >	[MK EXCEPT FOR MISMO KS MODELS]	
 Touch "ON" and drain fuel approximately 30 ℓ (7-7/8 US grants). Check "FUEL LEVEL SE" output voltage and note it. Fill fuel into the fuel tank for 30 ℓ (7-7/8 US gal, 6-5/8 Imp. Check "FUEL LEVEL SE" output voltage and note it. Confirm whether the voltage changes more than 0.03 V du 	gal).	А
Is the inspection result normal? YES >> INSPECTION END NO >> Proceed to EC-1011, "Diagnosis Procedure".		EC C
3.PERFORM COMPONENT FUNCTION CHECK		
Without CONSULT NOTE: Start from step 8, if it is possible to confirm that the fuel ca Imp gal) in advance. 1. Prepare a fuel container and a spare hose. 2. Release fuel pressure from fuel line. Refer to EC-756, "Wo		D E
 Remove the fuel feed hose on the fuel level sensor unit. Ref. Connect a spare fuel hose where the fuel feed hose was ref. Turn ignition switch ON. Drain fuel by 30 ℓ (7-7/8 US gal, 6-5/8 Imp gal) from the fuel 	efer to FL-6, "2WD: Removal and Installation". emoved.	F
 Confirm that the fuel gauge indication varies. Fill fuel into the fuel tank for 30 \(\ell\) (7-7/8 US gal, 6-5/8 Imp Confirm that the fuel gauge indication varies. 		G
Is the inspection result normal? YES >> INSPECTION END NO >> Proceed to EC-1011, "Diagnosis Procedure".		Н
Diagnosis Procedure	INFOID:000000011667623	
1. CHECK COMBINATION METER FUNCTION		
Check combination meter function. Refer to MWI-21, "CONSUL	_T Function".	J
Is the inspection result normal? YES >> Check intermittent incident. Refer to GI-44, "Interm NO >> Proceed to MWI-50, "Component Function Check"		K
		L
		M
		Ν
		0
		Р

P0462, P0463 FUEL LEVEL SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0462, P0463 FUEL LEVEL SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0462 or P0463 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0462 or P0463 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607.Refer to EC-1051, "DTC Logic".

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0462	FUEL LEVL SEN/CIRC (Fuel level sensor "A" circuit low)	An excessively low voltage from the sensor is sent to ECM.	Harness or connectors (The CAN communication line is open or
P0463	FUEL LEVL SEN/CIRC (Fuel level sensor "A" circuit high)	An excessively high voltage from the sensor is sent to ECM.	shorted) Harness or connectors (The sensor circuit is open or shorted) Combination meter Fuel level sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1012, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667625

1.CHECK COMBINATION METER FUNCTION

Check combination meter function. Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Proceed to <u>MWI-51</u>, "<u>Diagnosis Procedure</u>".

P046E EGR PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P046E EGR PRESSURE SENSOR

DTC Logic INFOID:0000000011672945

DTC DETECTION LOGIC

NOTE:

If DTC P046E is displayed with DTC related to the EGR volume control valve, first perform the trouble diagnosis for DTC related to the EGR volume control valve. Refer to EC-694, "DTC Index".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P046E	EGR SENSOR B (EGR sensor B circuit range/ performance)	ECM detects the following status continuously for 5 seconds or more: A difference between the output level of EGR pressure sensor and the differential pressure before and after EGR volume control valve calculated by ECM based on "target working factor of EGR" is bigger than specified value.	Harness or connectors (EGR pressure sensor circuit is open or shorted.) EGR pressure sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at ignition switch ON.

>> GO TO 2.

2.perform dtc confirmation procedure-1 $\,$

- Turn ignition switch ON.
- Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-1013, "Diagnosis Procedure". YES

NO >> GO TO 3.

$oldsymbol{3}$.PERFORM DTC CONFIRMATION PROCEDURE-2

- Start the engine and warm it up to the normal operating temperature.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1013, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK EGR PRESSURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect EGR pressure sensor harness connector.
- Turn ignition switch ON. 3.
- Check the voltage between EGR pressure sensor harness connector and ground.

EC-1013

EC

Α

D

Е

F

Н

K

M

N

INFOID:0000000011688011

Р

2015 JUKE

P046E EGR PRESSURE SENSOR

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

	+		V/-II	
EGR press	sure sensor	_	Voltage (Approx.)	
Connector Terminal			, , ,	
F46	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 2. NO >> GO TO 5.

2.check egr pressure sensor ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector.

+		_		
EGR pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F46	3	F23	43	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK EGR PRESSURE SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between EGR pressure sensor harness connector and ECM harness connector.

+			_	
EGR pressure sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
F46	2	F23	24	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK EGR PRESSURE SENSOR

Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace EGR pressure sensor.

5.CHECK EGR PRESSURE SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between EGR pressure sensor harness connector and ECM harness connector.

+			_	
EGR pressure sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F46	1	F23	30	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

P046E EGR PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

Component Inspection (EGR pressure sensor)

INFOID:0000000011688012

1. CHECK EGR PRESSURE SENSOR

- 1. Turn ignition switch OFF.
- Remove EGR pressure sensor hose (intake and exhaust).
- 3. Install pressure pump to EGR pressure sensor port (intake side).
- 4. Turn ignition switch ON and check output voltage between ECM connector terminals as follows.

EGR pressure sensor						
+	-	Condition		Condition Voltage		Voltage
Terminal						
2	3	Applied pressure kPa	Not applied	1.0 V		
	3	(kg/cm ² , PSI)	100 (1.02, 14.5)	4.5 V		

CAUTION:

Never apply pressure over 150kPa (1.53 kg/cm², 21.75 PSI)

Is inspection result normal?

YES >> INSPECTION END

NO >> Replace EGR pressure sensor. Refer to <u>FL-26</u>, "2WD : Exploded View".

EC

Α

С

D

F

Е

I

Н

K

L

Ν

0

Р

P046F, P0486 EGR PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P046F, P0486 EGR PRESSURE SENSOR

DTC Logic INFOID:0000000011611023

DTC DETECTION LOGIC

NOTE:

If DTC P046F, or P0486 is displayed with DTC P0643, first perform trouble diagnosis for DTC P0643. Refer to <u>EC-1057</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	
P046F	EGR SENSOR B (EGR sensor B circuit intermit- tent/erratic)	ECM detects that a voltage signal from EGR pressure sensor is less than 4.8 V for 5 consecutive seconds.	Harness or connectors (EGR pressure sensor circuit is open.)	
P0486	EGR SENSOR B (EGR sensor B circuit)	ECM detects that a voltage signal from EGR pressure sensor is less than 0.5 V for 5 consecutive seconds.	shorted.) • EGR pressure sensor	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 10 V or more at ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1016. "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611024

1.check egr pressure sensor power supply

- Turn ignition switch OFF.
- 2. Disconnect EGR pressure sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between EGR pressure sensor harness connector and ground.

	+		\	
EGR press	sure sensor	_	Voltage (Approx.)	
Connector Terminal			()	
F46	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK EGR PRESSURE SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.

P046F, P0486 EGR PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Check the continuity between EGR pressure sensor harness connector and ECM harness connector.

	+		_	
EGR press	sure sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F46	3	F23	43	Existed

EC

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

 ${f 3.}$ CHECK EGR PRESSURE SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between EGR pressure sensor harness connector and ECM harness connector.

+		_		
EGR press	sure sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F46	2	F23	24	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

>> GO TO 4. YES

NO >> Repair or replace error-detected parts.

f 4.CHECK EGR PRESSURE SENSOR

Check the EGR pressure sensor. Refer to EC-1017, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace EGR pressure sensor. Refer to EC-1255, "Removal and Installation". NO

Component Inspection

INFOID:0000000011611025

1. CHECK EGR PRESSURE SENSOR

- Turn ignition switch OFF.
- Remove EGR pressure sensor tube (intake and exhaust).
- Install pressure pump to EGR pressure sensor hose connector (intake side)
- Turn ignition switch ON and check output voltage between ECM connector terminals as follows.

EGR pressure sensor					
+	_	Condition		Voltage	
Terminal					
2	3	Applied pressure kPa	Not applied	1.0 V	
2	3	(mbar, mmHg, inHg)	100 (1,000, 750, 29.53)	4.5 V	
_	•		·	•	

Never apply pressure over 150kPa (1,500 mbar, 1,125 mmHg, 44.29 inHg)

Is inspection result normal?

YES >> INSPECTION END

NO >> Replace EGR pressure sensor. Refer to EM-237, "Exploded View".

EC-1017 Revision: 2014 October 2015 JUKE

Α

D

Е

F

N

Р

P0500 VSS

EXCEPT FOR M/T MODELS

EXCEPT FOR M/T MODELS: Description

INFOID:0000000011611026

ECM receives vehicle speed signals from two different paths via CAN communication line: One is from the ABS actuator and electric unit (control unit) via the combination unit and the other is from TCM.

EXCEPT FOR M/T MODELS: DTC Logic

INFOID:0000000011611027

DTC DETECTION LOGIC

NOTE:

- If DTC P0500 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0500 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-1051</u>, "DTC Logic".

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0500	VEH SPEED SEN/CIRC (Vehicle speed sensor)	At 20 km/h (13 MPH), ECM detects the following status continuously for 5 seconds or more: The difference between a vehicle speed calculated by a output speed sensor transmitted from TCM to ECM via CAN communication and the vehicle speed indicated on the combination meter exceeds 15km/h (10 MPH).	Harness or connector (CAN communication line is open or shorted.) Combination meter ABS actuator and electric unit (control unit) Wheel sensor TCM Output speed sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start engine.
- 2. Shift the selector lever to D range and wait at least for 2 seconds.
- 3. Drive the vehicle at least 5 seconds at 20 km/h (13 MPH) or more.

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1018, "EXCEPT FOR M/T MODELS: Diagnosis Procedure"

NO >> INSPECTION END

EXCEPT FOR M/T MODELS: Diagnosis Procedure

INFOID:0000000011611028

1. CHECK DTC WITH TCM

Check DTC with TCM. Refer to TM-411, "DTC Index".

Is the inspection result normal?

YES >> GO TO 2.

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Perform trouble shooting relevant to DTC indicated.

2.check dtc with abs actuator and electric unit (control unit)

Check DTC with ABS actuator and electric unit (control unit). Refer to BRC-50, "DTC Index".

Is the inspection result normal?

YES >> GO TO 3.

>> Perform trouble shooting relevant to DTC indicated. NO

$oldsymbol{3}$. CHECK DTC WITH COMBINATION METER

Check DTC with combination meter. Refer to MWI-32, "DTC Index".

Is the inspection result normal?

>> GO TO 4. YES

NO >> Perform trouble shooting relevant to DTC indicated.

4. CHECK OUTPUT SPEED SENSOR

Check output speed sensor. Refer to TM-516, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace or replace error-detected parts.

${f 5.}$ CHECK WHEEL SENSOR

Check wheel sensor. Refer to BRC-81, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace or replace error-detected parts.

M/T MODELS

M/T MODELS: Description

The vehicle speed signal is sent to the combination meter from the "ABS actuator and electric unit (control unit)" via the CAN communication line. The combination meter then sends a signal to the ECM via the CAN communication line.

M/T MODELS: DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P0500 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P0500 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to EC-1051, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	_
P0500	VEH SPEED SEN/CIRC (Vehicle speed sensor)	The vehicle speed signal sent to ECM is almost 0 km/h (0 MPH) even when vehicle is being driven.	Harness or connectors (CAN communication line is open or shorted) Harness or connectors (Vehicle speed signal circuit is open or shorted) Wheel sensor Combination meter ABS actuator and electric unit (control unit)	(

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 5.

EC-1019 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

INFOID:0000000011611030

INFOID:0000000011611029

K

L

M

INFOID:0000000011611031

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 3.

3. CHECK VEHICLE SPEED SIGNAL

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

(P)With CONSULT

- Start engine.
- Read "VHCL SPEED SE" in "DATA MONITOR" mode of "ENGINE" using CONSULT. The vehicle speed on CONSULT should exceed 10 km/h (6 mph) when rotating wheels with suitable gear position.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Proceed to EC-1021, "M/T MODELS : Diagnosis Procedure".

4. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Warm engine up to normal operating temperature.
- 3. Maintain the following conditions for at least 50 consecutive seconds.

CAUTION:

Always drive vehicle at a safe speed.

ENG SPEED	1,800 - 6,000 rpm
COOLAN TEMP/S	More than 65°C (149°F)
B/FUEL SCHDL	4.7 - 31.8 msec
Selector lever	Except Neutral position
PW/ST SIGNAL	OFF

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1021, "M/T MODELS: Diagnosis Procedure".

NO >> INSPECTION END

${f 5}$.PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-1020, "M/T MODELS: Component Function Check".

Use component function check to check the overall function of the vehicle speed signal circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-1021</u>, "M/T MODELS : <u>Diagnosis Procedure</u>".

M/T MODELS: Component Function Check

1. PERFORM COMPONENT FUNCTION CHECK

With GST

- 1. Lift up drive wheels.
- 2. Start engine.
- 3. Read vehicle speed signal in Service \$01 with GST.

The vehicle speed signal on GST should be able to exceed 10 km/h (6 MPH) when rotating wheels with suitable gear position.

P0500 VSS < DTC/CIRCUIT DIAGNOSIS > [MR EXCEPT FOR NISMO	RS MODEL SI
, D. G. G. M. C.	- NO WODELOJ
Is the inspection result normal? YES >> INSPECTION END	А
NO >> Proceed to EC-1021, "M/T MODELS : Diagnosis Procedure".	
M/T MODELS : Diagnosis Procedure	INFOID:0000000011611032
1. CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)	
Check DTC with ABS actuator and electric unit (control unit). Refer to <u>BRC-50, "DTC Index"</u> .	С
Is the inspection result normal? YES >> GO TO 2.	
NO >> Perform trouble shooting relevant to DTC indicated.	D
2. CHECK DTC WITH COMBINATION METER	_
Check DTC with combination meter. Refer to MWI-32, "DTC Index".	
Is the inspection result normal?	Е
YES >> INSPECTION END NO >> Perform trouble shooting relevant to DTC indicated.	
72 Tenomi trouble shooting relevant to bits indicated.	F
	G
	Н
	I
	J
	K
	L
	_
	M
	N
	0
	Р
	1

P0501, P2159 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0501, P2159 VEHICLE SPEED SENSOR

Description INFOID:0000000011611033

ECM receives a rear wheel sensor signal from ABS actuator and electric unit (control unit) via CAN communication to switch combustion for the direct injection gasoline system. For the direct injection gasoline system, refer to EC-619, "DIRECT INJECTION GASOLINE SYSTEM: System Description".

DTC Logic INFOID:0000000011611034

DTC DETECTION LOGIC

NOTE:

If DTC P0501 or P2159 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX. Refer to EC-694, "DTC Index".

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0501	VEHICLE SPEED SEN A (Vehicle speed sensor A range/ performance)	ECM detects a rear LH wheel sensor mal- function signal transmitted from the ABS ac- tuator and electric unit (control unit) via CAN communication at least for 5 seconds in a row.	Harness or connectors (The CAN communication line is open or shorted) Rear LH wheel sensor ABS actuator and electric unit (control unit)
P2159	Vehicle speed sensor B (Vehicle speed sensor B range/ performance)	ECM detects a rear RH wheel sensor mal- function signal transmitted from the ABS ac- tuator and electric unit (control unit) via CAN communication at least for 5 seconds in a row.	Harness or connectors (The CAN communication line is open or shorted) Rear RH wheel sensor ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 9 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1022, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611035

${f 1.}$ CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

(I) With CONSULT

Check DTC with ABS actuator and electric unit (control unit). Refer to BRC-50, "DTC Index".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Perform Diagnosis Procedure corresponding to DTC indicated.

[MR EXCEPT FOR NISMO RS MODELS]

P0506 ISC SYSTEM

Description INFOID:0000000011667626

The ECM controls the engine idle speed to a specified level through the fine adjustment of the air, which is let into the intake manifold, by operating the electric throttle control actuator. The operating of the throttle valve is varied to allow for optimum control of the engine idling speed. The crankshaft position sensor (POS) detects the actual engine speed and sends a signal to the ECM.

The ECM controls the electric throttle control actuator so that the engine speed coincides with the target value memorized in the ECM. The target engine speed is the lowest speed at which the engine can operate steadily. The optimum value stored in the ECM is determined by taking into consideration various engine conditions, such as during warming up, deceleration and engine load (air conditioner, power steering and cooling fan operation, etc.).

DTC Logic INFOID:0000000011667627

DTC DETECTION LOGIC

NOTE:

If DTC P0506 is displayed with other DTC, first perform the trouble diagnosis for the other DTC.

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0506	ISC SYSTEM (Idle air control system RPM lower than expected)	The idle speed is less than the target idle speed by 100 rpm or more.	Electric throttle control actuator Intake air leakage

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

If the target idle speed is out of the specified value, perform EC-743, "Work Procedure", before conducting DTC CONFIRMATION PROCEDURE.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Always perform the test at a temperature above –10°C(14°F).

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Restart engine and run it for at least 1 minute at idle speed.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1023, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1.CHECK INTAKE AIR LEAKAGE

- Start engine and let it idle.
- Listen for an intake air leakage after the mass air flow sensor.

Is intake air leakage detected?

>> Discover air leakage location and repair.

EC-1023 Revision: 2014 October 2015 JUKE

EC

Α

Е

N

INFOID:0000000011667628

P0506 ISC SYSTEM

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Replace ECM. Refer to EC-1255, "Removal and Installation".

P0507 ISC SYSTEM

Description INFOID:0000000011667629

The ECM controls the engine idle speed to a specified level through the fine adjustment of the air, which is let into the intake manifold, by operating the electric throttle control actuator. The operating of the throttle valve is varied to allow for optimum control of the engine idling speed. The crankshaft position sensor (POS) detects the actual engine speed and sends a signal to the ECM.

The ECM controls the electric throttle control actuator so that the engine speed coincides with the target value memorized in the ECM. The target engine speed is the lowest speed at which the engine can operate steadily. The optimum value stored in the ECM is determined by taking into consideration various engine conditions, such as during warming up, deceleration and engine load (air conditioner, power steering and cooling fan operation, etc.).

DTC Logic INFOID:0000000011667630

DTC DETECTION LOGIC

NOTE:

If DTC P0507 is displayed with other DTC, first perform the trouble diagnosis for the other DTC.

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0507	ISC SYSTEM (Idle air control system RPM higher than expected)	The idle speed is more than the target idle speed by 200 rpm or more.	Electric throttle control actuator Intake air leakage PCV system

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

If the target idle speed is out of the specified value, perform EC-743, "Work Procedure", before conducting DTC Confirmation Procedure.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Always perform the test at a temperature above –10°C(14°F).

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- Restart engine and run it for at least 1 minute at idle speed.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1025, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

 CHECK PCV HOSE CONNECTION Confirm that PCV hose is connected correctly.

Is the inspection result normal?

>> GO TO 2. YES

NO >> Repair or replace malfunctioning part.

EC-1025 Revision: 2014 October 2015 JUKE

EC

Α

 \Box

Е

M

N

INFOID:0000000011667631

P0507 ISC SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

$\overline{2}$.CHECK INTAKE AIR LEAKAGE

- 1. Start engine and let it idle.
- 2. Listen for an intake air leakage after the mass air flow sensor.

Is intake air leakage detected?

YES >> Discover air leakage location and repair.

NO >> Replace ECM. Refer to EC-1255, "Removal and Installation".

P050A, P050B, P050E COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P050A, P050B, P050E COLD START CONTROL

Description INFOID:0000000011667776

ECM controls ignition timing and engine idle speed when engine is started with pre-warming up condition. This control promotes the activation of three way catalyst by heating the catalyst and reduces emissions.

INFOID:0000000011667777

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P050A, P050B or P050E is displayed with other DTC, first perform the trouble diagnosis for other DTC.

DTC No.	Trouble diagnosis name	DTC detecting condition	Possible cause
P050A	Cold start idle air control system performance	ECM does not control engine idle speed properly when engine is started with pre-warming up condition.	
P050B	Cold start ignition timing performance	ECM does not control engine timing properly when engine is started with pre-warming up condition.	Lack of intake air volumeFuel injection systemECM
P050E	Cold start engine exhaust temperature too low	The temperature of the catalyst inlet does not rise to the proper temperature when the engine is started with pre-warming up condition.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

(P)WITH CONSULT

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Select "DATA MONITOR" mode with CONSULT.
- Check the indication of "COOLAN TEMP/S".

■WITH GST

Follow the procedure "With CONSULT" above.

Is the value of "COOLAN TEMP/S" between 5°C (41°F) and 36°C (97°F)?

>> GO TO 3.

NO-1 [If it is below 5°C (41°F)]>>Warm up the engine until the value of "COOLAN TEMP/S" reaches 5°C (41°F) or more. Retry from step 1.

NO-2 [If it is above 36°C (97°F)]>>Cool engine down to less than 36°C (97°F). Retry from step 1.

3.PERFORM DTC CONFIRMATION PROCEDURE-II

(P)WITH CONSULT

- Set the select lever in N range.
- Start the engine and warm up in idle with the value of "COOLAN TEMP/S" between 5°C (41°F) and 40°C (104°F) for more than 15 seconds.
- Check 1st trip DTC.

Α

EC

Е

Н

L

N

Р

EC-1027 Revision: 2014 October 2015 JUKE

P050A, P050B, P050E COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-1028, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667778

1.PERFORM IDLE AIR VOLUME LEARNING

Perform EC-743, "Work Procedure".

Is Idle Air Volume Learning carried out successfully?

YES >> GO TO 2.

NO >> Follow the instruction of Idle Air Volume Learning.

2.CHECK INTAKE SYSTEM

Check for the cause of intake air volume lacking. Refer to the following.

- Crushed intake air passage
- Intake air passage clogging
- Clogging of throttle body

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning part

3.check fuel injection system function

Perform DTC Confirmation Procedure for DTC P0171. Refer to EC-890, "DTC Logic".

Is the inspection result normal?

YES >> GO TO 4.

>> Proceed to EC-891, "Diagnosis Procedure" for DTC P0171. NO

f 4.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- Erase DTC.
- Perform DTC Confirmation Procedure.

See EC-1027, "DTC Logic".

Is the 1st trip DTC P050A, P050B or P050E displayed again?

YES >> GO TO 5.

NO >> INSPECTION END

5.REPLACE ECM

Replace ECM. Refer to EC-1255, "Removal and Installation"

>> INSPECTION END

P0520 EOP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

F

Н

Ν

INFOID:0000000011611037

P0520 EOP SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis (Trouble diagnosis content)	Detecting condition	Possible cause	
P0520	EOP SENSOR/SWITCH [Engine oil pressure (EOP) sensor circuit]	 ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the engine oil pressure sensor is lower than 0.3 V. A voltage signal transmitted from the engine oil pressure sensor is higher than 5.02 V. 	Harness or connectors (EOP sensor circuit is open or shorted.) Engine oil level abnormality EOP sensor Sensor power supply 2 circuit	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1029, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK EOP SENSOR POWER SUPPLY-I

- Turn ignition switch OFF.
- 2. Disconnect EOP sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between EOP sensor harness connector terminals.

	EOP sensor		
Connector	+	-	Voltage (Approx.)
Connector	tern	ninal	,
F43	3	1	5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2. CHECK EOP SENSOR SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connectors.
- 3. Check the continuity between EOP sensor harness connector and ECM harness connector.

< DTC/CIRCUIT DIAGNOSIS >

	+		_	
EOP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F43	2	F23	23	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK EOP SENSOR

Check EOP sensor. Refer to EC-1031, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

4. CHECK EOP SENSOR POWER SUPPLY-II

Check the voltage between EOP sensor harness connector terminal and ground.

+			V 16
EOP sensor		_	Voltage (Approx.)
Connector	Terminal		, , ,
F43	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 6. NO >> GO TO 5.

5. CHECK EOP SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connectors.
- 3. Check the continuity between EOP sensor harness connector and ECM harness connector.

+		_		
EOP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F43	3	F23	29	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Check sensor power supply 2 circuit. Refer to EC-1239, "Diagnosis Procedure".

NO >> Repair or replace error-detected parts.

6.CHECK EOP SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between EOP sensor harness connector and ECM harness connector.

+		ı		
EOP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F43	1	F23	13	Existed

Is the inspection result normal?

YES >> GO TO 7.

P0520 EOP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Repair or replace error-detected parts.

7. CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

ECM		Ground	Continuity	
Connector	Terminal	Giodila	Continuity	
	9			
F23	10		Existed	
	50			
F24	60	Cround		
F24	110	Ground		
	147			
E19	149			
	152			

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

Component Inspection

1. CHECK EOP SENSOR

Turn ignition switch OFF.

Disconnect EOP sensor harness connector.

Check resistance between EOP sensor connector terminals.

EOP sensor				
+	_	Condition	Resistance ($k\Omega$)	
Terr	minal			
1	2	None	4 kΩ – 10 kΩ	
,	3		2 kΩ – 8 kΩ	
2	1		4 kΩ – 10 kΩ	
2	3		1 kΩ – 3 kΩ	
3	1		2 kΩ – 8 kΩ	
	2		1 kΩ – 3 kΩ	

EC-1031

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Replace EOP sensor. Refer to EM-285, "Exploded View".

2015 JUKE

Revision: 2014 October

Α

EC

C

D

Е

F

Н

INFOID:0000000011611038

J

K

L

N

Р

P0524 ENGINE OIL PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0524 ENGINE OIL PRESSURE

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0524	ENGINE OIL PRESSURE (Engine oil pressure too low)	An EOP sensor signal voltage applied to ECM remains lower than the specified value continuously for 10 seconds or more when the engine speed is 1,000 rpm or more.	 Decrease in engine oil pressure Decrease in engine oil level Engine oil condition EOP sensor Engine body

DTC CONFIRMATION PROCEDURE

CAUTION:

If "EC-1033, "Diagnosis Procedure" is unfinished, be sure to perform Step 3 and 4.

1.PRECONDITIONING-1

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2.PRECONDITIONING-2

Is "Diagnosis Procedure" of DTC P0524 finished?

YES >> GO TO 3.

NO >> GO TO 4.

3. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and warm it up to normal operating temperature.
- 2. Maintain the following conditions for about 10 consecutive seconds.

Selector lever	P or N position (CVT) N position (M/T)
Engine coolant temperature	70°C (158°F) or more
Engine speed	1,000 rpm or more

NOTE:

With engine speed set around 4,000 rpm, the phenomenon can be reproduced more easily.

3. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1033, "Diagnosis Procedure".

NO >> INSPECTION END

4. CHECK ENGINE OIL LEVEL

Check engine oil level. Refer to LU-28, "Inspection".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Proceed to EC-1033, "Diagnosis Procedure".

CHECK ENGINE OIL PRESSURE

P0524 ENGINE OIL PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

(P)With CONSULT

- Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start the engine and check that "EOP SENSOR" changes, according to engine speeds.

Monitor item	Condition		Value (Approx.)
500 0511000	Engine oil temperature: 80°C (176°F) Selector lever: P or N position (CVT)	Engine speed: Idle	1,250 - 1,400 mV
EOP SENSOR	Selector lever: N position (M/T)Air conditioner switch: OFFNo load	Engine speed: 2,000 rpm	1,400 - 2,200 mV

Check engine oil pressure. Refer to <u>LU-28, "Inspection"</u>.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Proceed to EC-1033, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK ENGINE OIL LEVEL

- Turn ignition switch OFF.
- Check engine oil level. Refer to <u>LU-28</u>, "Inspection".

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2.CHECK ENGINE OIL PRESSURE

(P)With CONSULT

- Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start the engine and check that "EOP SENSOR" changes, according to engine speeds.

Monitor item	Condition		Value (Approx.)
500 0511000	Engine oil temperature: 80°C (176°F) Selector lever: P or N position (CVT)	Engine speed: Idle	1,250 - 1,400 mV
EOP SENSOR	Selector lever: N position (M/T)Air conditioner switch: OFFNo load	Engine speed: 2,000 rpm	1,400 - 2,200 mV

Check engine oil pressure. Refer to LU-28, "Inspection".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check oil pump. Refer to <u>LU-36</u>, "Inspection".

3.CHECK EOP SENSOR

Check EOP sensor. Refer to EC-1031, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

4. CHECK ENGINE OIL LEAKAGE

Check engine oil leakage. Refer to LU-25, "Engine Lubrication System".

Is the inspection result normal?

YES >> GO TO 5.

EC

Α

D

Е

INFOID:0000000011611040

Н

Ν

Р

2015 JUKE

P0524 ENGINE OIL PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Repair or replace error-detected parts.

${\bf 5.} {\tt CHECK} \; {\tt CAUSE} \; {\tt OF} \; {\tt ENGINE} \; {\tt OIL} \; {\tt CONSUMPTION} \\$

Check the following item.

Step	Inspection item	Equipment	Standard	Reference
1	PCV valve	EC-1254, "Inspection"		
2	Turbocharger	EM-243, "Inspection"		
3	Exhaust front tube	Visual	No blocking No abnormal sounds	_
4	Oil pump	Visual	No blockingNo abnormal sounds	_
4	Oil pump	LU-36, "Inspection"		
5	PistonPiston pinPiston ring	Piston to piston pin oil clearancePiston ring side clearancePiston ring end gap		<u>EM-303</u>
6	Cylinder block	Cylinder block top surface distortion Piston to cylinder bore clearance		<u>EM-293</u>

>> Repair or replace error-detected parts.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P052A, P052B INTAKE VALVE TIMING CONTROL

DTC Logic INFOID:0000000011611041

DTC DETECTION LOGIC

NOTE:

If DTC P052A or P052B is displayed with DTC P0075, perform the trouble diagnosis for DTC P0075. Refer to EC-798, "DTC Logic".

DTC No.	Trouble diagnosis (Trouble diagnosis content)	Detecting condition	Possible cause
P052A	CAMSHAFT POSITION TIM- ING B1 (Cold start "A" camshaft posi- tion timing over-advanced bank 1)	There is a gap between angle of target	Crankshaft position sensor Camshaft position sensor Intake valve timing control solenoid valve Intake valve timing intermediate lock control solenoid valve
P052B	CAMSHAFT POSITION TIM- ING B1 (Cold start "A" camshaft posi- tion timing over-retarded bank 1)	the engine is in a cold condition.	 Accumulation of debris to the signal pick-up portion of the camshaft Timing chain installation Foreign matter caught in the oil groove for intake valve timing control

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 10 V or more at idle.

(P)With CONSULT

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- On the CONSULT screen, select "ENGINE" >> "DATA MONITOR" >> "COOLAN TEMP/S".
- Check "COOLAN TEMP/S" indication value.

Follow the procedure "With CONSULT" above.

Is the value of "COOLAN TEMP/S"-5°C (23°F) and 45°C (113°F)?

YES >> GO TO 2.

NO-1 [if it is below – 5°C (23°F)]>>Warm up the engine until the value of "COOLAN TEMP/S" indicates –5°C (23°F) and 45°C (113°F). And then GO TO 2.

NO-2 [if it is above 45°C (113°F)]>>Cool the engine down to the value of "COOLAN TEMP/S" indicates -5°C (23°F) and 45°C (113°F). And then GO TO 2.

2.perform dtc confirmation procedure

- Turn ignition switch OFF and wait at 10 seconds.
- Turn ignition switch ON. 2.
- Set the selector lever in N range.
- Start the engine and let it idle for 20 seconds or more.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1035, "Diagnosis Procedure"

>> INSPECTION END NO

Diagnosis Procedure

1.INSPECTION START

Α

EC

D

Е

Ν

INFOID:0000000011611042

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

With CONSULT>>GO TO 2. Without CONSULT>>GO TO 3.

2.CHECK VTC POSITION

(I) With CONSULT

- 1. Turn ignition switch ON.
- On the CONSULT screen, select "ENGINE" >> "DATA MONITOR" >> "COOLAN TEMP/S".
- Check that the "COOLAN TEMP/S" indication value is between –5°C (23°F) and 45°C (113°F).
- 4. Start engine and wait at least 5 seconds.
- 5. On the CONSULT screen, select "ENGINE" >> "DATA MONITOR" >> "INT/V TIM(B1)".
- 6. Check that the data monitor item indicates as follows:

Item	Value (°CA)	
INT/V TIM(B1)	10 ± 2	

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 3.

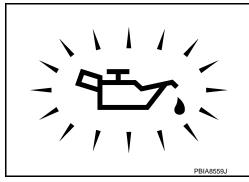
3.CHECK OIL PRESSURE WARNING LAMP

- 1. Start engine.
- 2. Check that oil pressure warning lamp is not illuminated.

Is oil pressure warning lamp illuminated?

YES >> Refer to LU-28, "Inspection".

NO >> GO TO 4.



4. CHECK INTAKE VALVE TIMING INTERMEDIATE LOCK CONTROL SOLENOID VALVE

Perform Component Inspection of the intake valve timing intermediate lock control solenoid valve. Refer to EC-1038, "Component Inspection (Intake Valve Timing Intermediate Lock Control Solenoid Valve)".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE

Perform Component Inspection of the intake valve timing control solenoid valve. Refer to <u>EC-1037, "Component Inspection (Intake Valve Timing Control Solenoid Valve)"</u>.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

$\mathsf{6}.$ CHECK CRANKSHAFT POSITION SENSOR

Perform Component Inspection of the crankshaft position sensor. Refer to <u>EC-1038</u>, "Component Inspection (Crankshaft Position sensor)".

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7. CHECK CAMSHAFT POSITION SENSOR

Perform Component Inspection of the camshaft position sensor. Refer to <u>EC-1039</u>, "Component Inspection (Camshaft position sensor)".

Is the inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

8.CHECK CAMSHAFT (INTAKE)

Check the following.

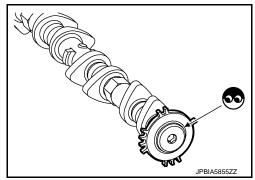
- 1. Accumulation of debris on the signal plate of camshaft front end
- Chipping signal plate of camshaft front end

Is the inspection result normal?

YES >> GO TO 9.

NO >> Remove

>> Remove debris and clean the signal plate of camshaft front end or replace camshaft. Refer to <u>EM-260</u>, "Removal and Installation".



9. CHECK TIMING CHAIN INSTALLATION

Check service records for any recent repairs that may cause timing chain misalignment.

Are there any service records that may cause timing chain misalignment?

YES >> Check timing chain installation. Refer to EM-248, "Removal and Installation".

NO >> GO TO 10.

10. CHECK LUBRICATION CIRCUIT

Perform "Inspection of Camshaft Sprocket (INT) Oil Groove". Refer to EM-263, "Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Clean lubrication line.

Component Inspection (Intake Valve Timing Control Solenoid Valve)

INFOID:0000000011611043

1. CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-I

- Turn ignition switch OFF.
- 2. Disconnect intake valve timing control solenoid valve harness connector.
- 3. Check resistance between intake valve timing control solenoid valve terminals as per the following.

Terminals	Resistance	
1 and 2	7.0 - 7.7 Ω [at 20°C (68°F)]	
1 or 2 and ground	$\stackrel{\sim}{\sim} \Omega$ (Continuity should not exist)	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace malfunctioning intake valve timing control solenoid valve. Refer to EM-247, "Exploded View".

2.CHECK INTAKE VALVE TIMING CONTROL SOLENOID VALVE-II

1. Remove intake valve timing control solenoid valve. Refer to EM-247, "Exploded View".

EC

Α

С

D

Р

M

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Provide 12 V DC between intake valve timing control solenoid valve terminals 1 and 2, and then interrupt it. Check that the plunger moves as shown in the figure.

CAUTION:

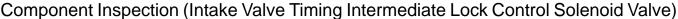
Never apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in intake valve timing control solenoid valve.

NOTE:
Always replace O-ring when intake valve timing control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning intake valve timing control solenoid valve. Refer to EM-247, "Exploded View".



INFOID:0000000011611044

1.CHECK INTAKE VALVE TIMING INTERMEDIATE LOCK CONTROL SOLENOID VALVE-I

- Turn ignition switch OFF.
- 2. Disconnect intake valve timing intermediate lock control solenoid valve harness connector.
- Check resistance between intake valve timing intermediate lock control solenoid valve terminals as per the following.

Terminals	Resistance	
1 and 2	7.0 - 7.7 Ω [at 20°C (68°F)]	
1 or 2 and ground	$\stackrel{\scriptstyle \sim \; \Omega}{\text{(Continuity should not exist)}}$	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace malfunctioning intake valve timing intermediate lock control solenoid valve. Refer to EM-247. "Exploded View".

2.check intake valve timing intermediate lock control solenoid valve-ii

1. Remove intake valve timing intermediate lock control solenoid valve. Refer to EM-247, "Exploded View"

 Provide 12 V DC between intake valve timing intermediate lock control solenoid valve terminals 1 and 2, and then interrupt it. Check that the plunger moves as shown in the figure.

CAUTION:

Never apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in intake valve timing intermediate lock control solenoid valve.

NOTE: Always replace O-ring when intake valve timing intermediate lock control solenoid valve is removed.

Is the inspection result normal?

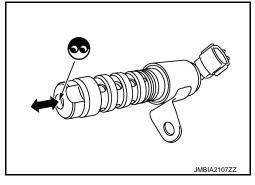
YES >> INSPECTION END

NO >> Replace malfunctioning intake valve timing intermediate lock control solenoid valve. Refer to EM-247, "Exploded View".

Component Inspection (Crankshaft Position sensor)

1. CHECK CRANKSHAFT POSITION SENSOR (POS)-1

- Turn ignition switch OFF.
- 2. Loosen the fixing bolt of the sensor.
- Disconnect crankshaft position sensor (POS) harness connector.
- Remove the sensor.



INFOID:0000000011611045

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

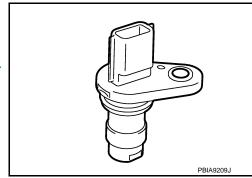
Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO

>> Replace crankshaft position sensor (POS). Refer to EM-281, "Exploded View".



2.CHECK CRANKSHAFT POSITION SENSOR (POS)-2

Check the resistance between crankshaft position sensor (POS) terminals as per the following.

Crankshaft posit	ion sensor (POS)	
+	_	Resistance [at 25°C (77°F)]
Terminal	(Polarity)	
1	2	
ı	3	Except 0 or $\infty \Omega$
2 3		

Is the inspection result normal?

YES >> INSPECTION END

>> Replace crankshaft position sensor (POS). Refer to EM-281, "Exploded View". NO

Component Inspection (Camshaft position sensor)

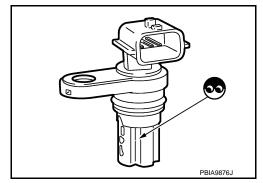
${f 1}$.CHECK CAMSHAFT POSITION SENSOR (PHASE)-1

- Turn ignition switch OFF.
- 2. Loosen the fixing bolt of the sensor.
- 3. Disconnect camshaft position sensor (PHASE) harness connector.
- Remove the sensor.
- 5. Visually check the sensor for chipping.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace camshaft position sensor (PHASE).



2.CHECK CAMSHAFT POSITION SENSOR (PHASE)-2.

Check the resistance camshaft position sensor (PHASE) terminals as per the following.

Camshaft position	n sensor (PHASE)		
+ -		Resistance [Ω at 25°C (77°F)]	
Terminals	s (Polarity)		
1	2		
ı	3	Except 0 or ∞	
2	3		

Is the inspection result normal?

EC

Α

D

Е

INFOID:0000000011611046

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> INSPECTION END

NO >> Replace camshaft position sensor (PHASE). Refer to EM-259, "Exploded View".

P0544, P0545 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0544, P0545 EXHAUST GAS TEMPERATURE SENSOR

DTC Logic INFOID:0000000011611047

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0544	EXHAUST GAS TEMP SEN- SOR 1 B1 (Exhaust gas temperature sen- sor 1 circuit)	ECM detects that a voltage signal from exhaust gas temperature sensor is less than 0.025 V for 5 consecutive seconds.	Harness or connectors (Exhaust gas temperature sensor cir-
P0545	EXHAUST GAS TEMP SEN- SOR 1 B1 (Exhaust gas temperature sen- sor 1 circuit low)	ECM detects that a voltage signal from exhaust gas temperature sensor is less than 0.209 V for 5 consecutive seconds.	cuit is shorted.) • Exhaust gas temperature sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2 .PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 5 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1041, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK EXHAUST GAS TEMPERATURE SENSOR

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "EXHAUST GAS TEMP SEN 1 B1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Start engine and warm it up to normal operating temperature.
- Check that "EXHAUST GAS TEMP SEN 1 B1" indication as follows.

Monitor item	Condition	Value
EXHAUST GAS TEMP SEN 1 B1	Warm-up conditionIdle speed	1,290 - 2,940 mV

- 1. Start engine and warm it up to normal operating temperature.
- Check that voltage between ECM harness connector terminals as follows.

EC-1041 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

M

Ν

Р

INFOID:0000000011611048

P0544, P0545 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	ECM			
Connector	+	_	Condition	Voltage
Connector	Terminal			
F23	19	45	Warm-up conditionIdle speed	1.29 – 2.94 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace exhaust gas temperature sensor.

2.CHECK EXHAUST GAS TEMPERATURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect exhaust gas temperature sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between exhaust gas temperature sensor harness connector terminal and ground.

	+		Voltage (Approx.)	
Exhaust gas ten	nperature sensor	_		
Connector Terminal			,	
F58	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.check exhaust gas temperature sensor ground circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between exhaust gas temperature sensor harness connector and ECM harness connector.

+			_	
Exhaust gas temperature sensor		ECM		Continuity
Connector Terminal		Connector	Terminal	
F58	2	F23	45	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

4. CHECK EXHAUST GAS TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between exhaust gas temperature sensor harness connector and ECM harness connector.

+			_	
Exhaust gas temperature sensor		ECM		Continuity
Connector Terminal		Connector	Terminal	
F58	1	F23	19	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

P0544, P0545 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> Perform the trouble diagnosis for ECM power supply circuit. Refer to <u>EC-777</u>, "<u>Diagnosis Procedure</u>".

NO >> Repair or replace error-detected parts.

EC

Α

D

C

Е

F

G

Н

J

Κ

L

M

Ν

0

Р

P0546 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0546 EXHAUST GAS TEMPERATURE SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0546	EXHAUST GAS TEMP SEN- SOR 1 B1 (Exhaust gas temperature sen- sor 1 circuit high)	ECM detects that a voltage signal from exhaust gas temperature sensor is more than 4.84 V for 5 consecutive seconds.	Harness or connectors (Exhaust gas temperature sensor circuit is open.) Exhaust gas temperature sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING-1

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PRECONDITIONING-2

®With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "COOLANT TEMP/S" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check the following conditions:

COOLANT TEMP/S	More than –30°C (–22°F)
----------------	-------------------------

With GST

Follow the procedure "With CONSULT" above.

Is the condition satisfied?

YES >> GO TO 4. NO >> GO TO 3.

3. PRECONDITIONING-3

(P)With CONSULT

1. Start the engine until the following condition is satisfied.

COOLANT TEMP/S	More than -30°C (-22°F)
----------------	-------------------------

- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Turn ignition switch OFF and wait at least 10 seconds.

With GST

Follow the procedure "With CONSULT" above.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Shift the selector lever to P range.
- 2. Start engine and let it idle for at least 20 seconds.
- 3. Depress the accelerator pedal for 5 seconds or more.

NOTE:

P0546 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Do not release the accelerator pedal during DTC confirmation procedure.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1045, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611050

1. CHECK EXHAUST GAS TEMPERATURE SENSOR

(P)With CONSULT

- Turn ignition switch ON.
- Select "EXHAUST GAS TEMP SEN 1 B1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check that "EXHAUST GAS TEMP SEN 1 B1" indication as follows.

Monitor item	Condition	Value
EXHAUST GAS TEMP SEN 1 B1	Warm-up condition Idle speed	1,290 - 2,940 mV

- 1. Start engine and warm it up to normal operating temperature.
- Check that voltage between ECM harness connector terminals as follows.

ECM				
Connector	+	-	Condition	Voltage
Connector	Terminal			
F23	19	45	Warm-up conditionIdle speed	1.29 – 2.94 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace exhaust gas temperature sensor.

2.check exhaust gas temperature sensor power supply

- Turn ignition switch OFF.
- 2. Disconnect exhaust gas temperature sensor harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between exhaust gas temperature sensor harness connector terminal and ground.

+			Voltage
Exhaust gas ten	Exhaust gas temperature sensor		(Approx.)
Connector	Terminal		
F58	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

3.check exhaust gas temperature sensor ground circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between exhaust gas temperature sensor harness connector and ECM harness connector.

EC-1045 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

N

Р

P0546 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+	ı		
ŭ	emperature sen- or	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F58	2	F23	45	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

4. CHECK EXHAUST GAS TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between exhaust gas temperature sensor harness connector and ECM harness connector.

	+	-		
•	emperature sen- or	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F58	1	F23	19	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for ECM power supply circuit. Refer to <u>EC-777, "Diagnosis Procedure"</u>.

NO >> Repair or replace error-detected parts.

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

F

Н

L

Ν

Р

INFOID:0000000011611055

P0603 ECM

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0603	ECM BACK UP CIRCUIT [Internal control module keep alive memory (KAM) error]	 Malfunction in the internal back up RAM of ECM. Malfunction in the internal EEP-ROM system of ECM. 	ECM power supply ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 1 second.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Repeat step 1 and 2 for 10 times.
- Turn ignition switch ON.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1047, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

${f 1}$.CHECK ECM POWER SUPPLY AND GROUND CIRCUIT

Perform trouble diagnosis for ECM power supply and ground circuit. Refer to <u>EC-777, "Diagnosis Procedure"</u>. <u>Is the inspection result normal?</u>

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK INTERMITTENT INCIDENT

Check intermittent incident. Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- 2. Erase DTC.
- Perform DTC confirmation procedure. Refer to <u>EC-1047</u>, "DTC Logic".

Is the 1st trip DTC P0603 displayed again?

YES >> Replace ECM. Refer to EC-1255, "Removal and Installation".

NO >> INSPECTION END

Revision: 2014 October EC-1047 2015 JUKE

[MR EXCEPT FOR NISMO RS MODELS]

P0604 ECM

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0604	ECM [Internal control module random access memory (RAM) error]	Malfunction in the internal RAM of ECM.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

1. Turn ignition switch ON (engine stopped) and wait least 20 minutes.

CAUTION:

Never start engine during this procedure.

- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1048, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611057

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- 2. Erase DTC.
- Perform DTC confirmation procedure. Refer to <u>EC-1048</u>, "<u>DTC Logic</u>".

Is the 1st trip DTC P0604 displayed again?

YES >> Replace ECM. Refer to EC-1255, "Removal and Installation".

NO >> INSPECTION END

P0605 ECM

[MR EXCEPT FOR NISMO RS MODELS]

P0605 ECM

DTC Logic INFOID:0000000011611058

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0605	ECM [Internal control module read only memory (ROM) error]	Malfunction in the internal ROM of ECM.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

Turn ignition switch ON (engine stopped) and wait least 20 minutes.

CAUTION:

Never start engine during this procedure.

- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1049, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- Erase DTC.
- Perform DTC confirmation procedure. Refer to EC-1049, "DTC Logic".

Is the 1st trip DTC P0605 displayed again?

YES >> Replace ECM. Refer to EC-1255, "Removal and Installation".

NO >> INSPECTION END

EC-1049 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

INFOID:0000000011611059

L

M

Ν

Р

[MR EXCEPT FOR NISMO RS MODELS]

P0606 ECM

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0606	CONTROL MODULE (Control module processor)	Malfunction in ECM processor.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

1. Turn ignition switch ON (engine stopped) and wait at least 10 seconds.

CAUTION:

Never start engine during this procedure.

- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1050. "Diagnosis Procedure".

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-II

- 1. Start engine.
- Rev up the engine quickly to approximately 3,000 rpm under unloaded condition and completely release the accelerator pedal.
- 3. Let the engine idle and wait at least 10 seconds.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON.
- 6. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1050, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611061

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- Erase DTC.
- Perform DTC confirmation procedure for 3 times. Refer to EC-1050, "DTC Logic".

Is the 1st trip DTC P0606 displayed again?

YES >> Replace ECM. Refer to EC-1255, "Removal and Installation".

NO >> INSPECTION END

P0607 ECM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0607 ECM

DTC Logic INFOID:0000000011611062

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0607	ECM (Control module performance)	ECM internal communication system is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON (engine stopped) and wait least 10 seconds.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1051, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- 2. Erase DTC.
- Perform DTC confirmation procedure. Refer to EC-1051, "DTC Logic".

Is the 1st trip DTC P0607 displayed again?

>> Replace ECM. Refer to EC-1255, "Removal and Installation". YES

>> INSPECTION END NO

EC-1051 2015 JUKE

Е

D

Α

EC

F

Н

INFOID:0000000011611063

Ν

Р

[MR EXCEPT FOR NISMO RS MODELS]

P060A ECM

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P060A	CONTROL MODULE (Internal control module monitoring processor per- formance)	ECM internal monitoring processor is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait at least 10 seconds.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Repeat step 1 and 2 for 5 times.
- 4. Turn ignition switch ON.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-1052</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611065

1. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- Erase DTC.
- Perform DTC confirmation procedure. Refer to <u>EC-1052, "DTC Logic"</u>.

Is the 1st trip DTC P060A displayed again?

YES >> Replace ECM. Refer to EC-1255, "Removal and Installation".

NO >> INSPECTION END

P060B ECM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P060B ECM

DTC Logic INFOID:0000000011611066

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P060B	CONTROL MODULE (Internal control module A/ D processing performance)	ECM internal analog/digital conversion processing system is malfunctioning.	ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more with ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON (engine stopped) and wait least 10 seconds.
- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1053, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- 2. Erase DTC.
- Perform DTC confirmation procedure. Refer to EC-1053, "DTC Logic".

Is the 1st trip DTC P060B displayed again?

>> Replace ECM. Refer to EC-1255, "Removal and Installation". YES

>> INSPECTION END NO

EC-1053 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

INFOID:0000000011611067

Ν

Р

P0611 ECM PROTECTION

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0611 ECM PROTECTION

Description INFOID:0000000011611068

This DTC is detected when the ECM protective function is activated due to an extreme temperature increase in ECM, resulting from severe conditions such as heavy load driving.

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0611	FIC MODULE (ECM protection)	ECM overheat protection control is activated.	ECM overheated

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

This DTC is displayed as protection function history. If no malfunction is detected after the diagnosis, the customer must be informed of the activation of the protection function.

>> Proceed to EC-1054, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611070

1. INSPECTION START

- 1. Perform DTC confirmation procedure. Refer to EC-1049, "DTC Logic".
- 2. Check 1st trip DTC.

Is DTC P0605 detected?

YES >> Proceed to EC-1049, "Diagnosis Procedure".

NO >> Explain the customer about the activation of the protection function.

[MR EXCEPT FOR NISMO RS MODELS]

P062B ECM

Description INFOID:0000000011611071

This DTC is detected when the ECM-integrated injector driver unit has a malfunction. For injector driver unit, refer to EC-594, "ECM".

INFOID:0000000011611072

Α

EC

D

Е

F

Н

K

INFOID:0000000011611073

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P062B	ECM (Internal control module fuel injector control performance)	Injector driver unit is malfunctioning.	Harness and connectors (Injector circuit is open or shorted) Battery power supply ECM (injector driver unit)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine and keep the engine speed at idle for 30 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1055, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK FUEL INJECTOR

Check fuel injector. Refer to EC-1203, "Component Function Check".

Is inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- Erase DTC.
- Perform DTC confirmation procedure again. Refer to <u>EC-1055, "DTC Logic"</u>.
- Check 1st trip DTC.

Is the DTC P062B displayed again?

YES >> Replace ECM. Refer to EC-1255, "Removal and Installation".

NO >> INSPECTION END

parts. DURE O in. Refer to EC-1055, "DTC Logic". P "Removal and Installation".

P062F CONTROL MODULE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P062F CONTROL MODULE

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P062F	CONTROL MODULE (Internal control module EEPROM error)	ECM calculation is function malfunctioning.	• ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure is previously conducted, always turn ignition switch OFF and wait at least 30 seconds before conducting the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 second.
- 2. Check the DTC.

Is the DTC detected?

YES >> INSPECTION END

NO >> Proceed to EC-1056, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611075

1. INSPECTION START

- Perform DTC Confirmation Procedure. Refer to <u>EC-1055, "DTC Logic"</u>.
- 2. Erase DTC.

Is DTC erased?

YES >> INSPECTION END

NO >> GO TO 2.

2.REPLACE ECM

- Replace ECM. Refer to <u>EC-1255</u>, "Removal and Installation".
- 2. Perform EC-734, "Work Procedure".

>> INSPECTION END

P0643 SENSOR POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P0643 SENSOR POWER SUPPLY

Description INFOID:0000000011611076

ECM supplies a voltage of 5 V to some of the sensors systematically divided into 2 groups, respectively. Accordingly, when a short circuit develops in a sensor power source, a malfunction may occur simultaneously in the sensors belonging to the same group as the short-circuited sensor.

EC

D

Е

M

N

Р

Α

Sensor power supply 1

- Crankshaft position sensor
- · Battery current sensor
- EGR pressure sensor
- · Intake manifold runner control valve position sensor
- · Manifold absolute pressure sensor
- EGR volume control valve
- Electric wastegate position sensor
- Multi-way control valve position sensor
- · Exhaust valve timing control position sensor
- Throttle position sensor
- Accelerator pedal position sensor 1

NOTE:

If sensor power supply 1 circuit is malfunctioning, DTC P0643 is displayed.

Sensor power supply 2

- Mass air flow sensor
- G sensor
- · Refrigerant pressure sensor
- Fuel rail pressure sensor
- Engine oil pressure sensor
- Turbocharger boost sensor
- Camshaft position sensor
- Accelerator pedal position sensor 2

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P0643	SENSOR POWER/ CIRC (Sensor power supply 1 circuit short)	ECM detects a voltage of power source for sensor is excessively low or high.	Sensor power supply 1 circuit

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 1 second.
- Check DTC.

P0643 SENSOR POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is DTC detected?

YES >> Proceed to EC-1058, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611078

1. CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT-1

- 1. Turn ignition switch OFF.
- 2. Disconnect accelerator pedal position (APP) sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between APP sensor harness connector and ground.

	+	_	Voltage (Approx.)	
APP	sensor			
Connector Terminal			(11 - 7	
E101	4	Ground	5 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT-2

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between APP sensor harness connector and ECM harness connector.

+		-		
APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E101	4	E19	146	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit.

3. CHECK SENSOR POWER SUPPLY 1 CIRCUIT

- 1. Disconnect following sensors harness connector.
- 2. Check harness for short to power and short to ground, between the following terminals.

ECM		Sensor			
Connector	Terminal	Name	Connector	Terminal	
E19	146	APP sensor 1 E10		4	
	30	Battery current sensor	F52	1	
	27	Crankshaft position sensor	F107	3	
	30	EGR pressure sensor	F46	1	
F23	30	Intake manifold runner control valve position sensor	F73	1	
	30	Manifold absolute pressure sensor	F76	1	
		EGR volume control valve	F74	3	
	61	Electric wastegate position sensor	F61	3	
	01	Multi-way control valve position sensor	F60	5	
F24	73	Exhaust valve timing control position sensor	F111	1	
	83	Throttle position sensor	F29	5	

P0643 SENSOR POWER SUPPLY

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >	[MR EXCEPT FOR NISMO RS MODELS]	
Is the inspection result normal? YES >> GO TO 4. NO >> Repair short to ground or short to power in harness	or connectors.	Α
4.CHECK COMPONENTS		- 0
Check the following.		EC
 APP sensor 1 (Refer to <u>EC-1155</u>, "Component Inspection".) Battery current sensor (Refer to <u>EC-1017</u>, "Component Inspection". EGR pressure sensor (Refer to <u>EC-1017</u>, "Component Inspection". Crankshaft position sensor (Refer to <u>EC-936</u>, "Component Inspection"). 	<u>ction"</u> .) spection".)	С
 Intake manifold runner control valve position sensor (Refer Manifold Runner Control Valve)".) Manifold absolute pressure sensor (Refer to EC-830, "Compose EGR volume control valve (Refer to EC-985, "Component Ins 	nent Inspection".) pection (EGR Volume Control Valve)".)	D
 Electric wastegate position sensor (Refer to <u>EC-1168, "Compactuator)".</u>) Multi-way control valve position sensor (Refer to <u>EC-1182</u>) 		Е
 Valve)".) Exhaust valve timing control position sensor (Refer to <u>EC-943</u>) Throttle position sensor (Refer to <u>EC-1151</u>, "Component Insperse the inequality result pages? 		F
Is the inspection result normal? YES >> Perform GI-44, "Intermittent Incident". NO >> Replace malfunctioning component.		G
		Н
		I
		J
		K
		L
		M
		Ν
		0

Revision: 2014 October EC-1059 2015 JUKE

P06DA, P06DB ENGINE OIL PRESSURE CONTROL SOLENOID VALVE [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

P06DA, P06DB ENGINE OIL PRESSURE CONTROL SOLENOID VALVE

DTC Logic INFOID:0000000011611079

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P06DA	ENGINE OIL PRESSURE CONTROL (Engine oil pressure control cir- cuit/open)	ECM detects the following status continuously for 5 seconds or more: A voltage signal from engine oil pressure control solenoid valve is around 0V or more and less than normal operating voltage	Harness or connectors (Engine oil pressure control solenoid valve circuit is open or shorted.)
P06DB	ENGINE OIL PRESSURE CONTROL (Engine oil pressure control cir- cuit low)	ECM detects the following status continuously for 5 seconds or more: A voltage signal from engine oil pressure control solenoid valve is around 0V	Engine oil pressure control solenoid valve

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine.
- Maintain engine speed at 4,500 rpm or more for at least 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-1060, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611080

1.CHECK ENGINE OIL PRESSURE CONTROL SOLENOID VALVE POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect engine oil pressure control solenoid valve harness connector.
- Turn ignition switch ON.
- Check the voltage between engine oil pressure control solenoid valve harness connector and ground.

	+		
	sure control sole- valve	_	Voltage
Connector	Terminal		
F45	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK ENGINE OIL PRESSURE CONTROL SOLENOID VALVE INPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.

EC-1060 Revision: 2014 October 2015 JUKE

P06DA, P06DB ENGINE OIL PRESSURE CONTROL SOLENOID VALVE [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

Check the continuity between engine oil pressure control solenoid valve harness connector and ECM harness connector.

+		-		
Engine oil pressure control solenoid valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F45	2	F24	98	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK ENGINE OIL PRESSURE CONTROL SOLENOID VALVE

Check the engine oil pressure control solenoid valve. Refer to EC-1061, "Component Inspection (Engine Oil Pressure Control Solenoid Valve)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace engine oil pressure control solenoid valve. Refer to EM-199, "Exploded View".

Component Inspection (Engine Oil Pressure Control Solenoid Valve)

INFOID:0000000011611081

Α

EC

D

Е

F

Ν

Р

${f 1}$.CHECK ENGINE OIL PRESSURE CONTROL SOLENOID VALVE-1

- Turn ignition switch OFF.
- 2. Disconnect engine oil pressure control solenoid valve harness connector.
- Check resistance between engine oil pressure control solenoid valve terminals as follows.

	essure control id valve	0		Desire
+ -		Condition		Resistance
Terminal				
1	2			19.8 - 24.2 Ω
1		Temperature	20°C (68°F)	∞ Ω
2	Ground			(Continuity should not exist)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace engine oil pressure control solenoid valve. Refer to EM-199, "Exploded View".

2.CHECK ENGINE OIL PRESSURE CONTROL SOLENOID VALVE-2

- Remove engine oil pressure control solenoid valve. Refer to EM-199, "Exploded View".
- Provide 12 V DC between engine oil pressure control solenoid valve terminals 1 and 2, and then interrupt it. Make sure that the plunger moves as shown in the figure.

CAUTION:

Do not apply 12 V DC continuously for 5 seconds or more. Doing so may result in damage to the coil in engine oil pressure control solenoid valve. NOTE:

Always replace O-ring when engine oil pressure control solenoid valve is removed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine oil pressure control solenoid valve. Refer to EM-199, "Exploded View".

EC-1061 Revision: 2014 October 2015 JUKE

Description INFOID:000000011611094

For CVT models, transmission range switch is turn ON when the selector lever is P or N.

For M/T models, park/neutral position (PNP) range switch is ON when the selector lever is Neutral position. ECM detects the position because the continuity of the line (the ON) exists.

DTC Logic (INFOID:0000000011611095

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P0850	P-N POS SW/CIRCUIT (Park/neutral position switch)	 For CVT models, the signal of transmission range switch is not changed in the process of engine starting and driving. For M/T models, the signal of the park/neutral position (PNP) switch is not changed in the process of engine starting and driving. 	Harness or connectors [The transmission range switch circuit is open or shorted.(CVT models)] [The park/neutral position (PNP) switch circuit is open or shorted.(M/T models)] Transmission range switch (CVT models) Park/neutral position (PNP) switch (M/T models)

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 5.

2.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 3.

3.CHECK PNP SIGNAL FUNCTION

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "P/N POSI SW" in "DATA MONITOR" mode of "ENGINE" using CONSULT. Then check the "P/N POSI SW" signal as per the following conditions.

Selector lever position	Known-good signal
N or P position (CVT) Neutral position (M/T)	ON
Except above position	OFF

Is the inspection result normal?

YES >> GO TO 4.

NO >> Proceed to EC-1063, "Diagnosis Procedure".

4. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Start engine and warm it up to normal operating temperature.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Maintain the following conditions for at least 60 consecutive seconds. **CAUTION:**

Always drive vehicle at a safe speed.

ENG SPEED	1,125 - 6,375 rpm (CVT) 1,820 - 6,375 rpm (M/T)
COOLAN TEMP/S	More than 70°C (158°F)
B/FUEL SCHDL	3.3 - 31.8 msec (CVT) 1.2 - 31.8 msec (M/T)
VHCL SPEED SE	More than 64 km/h (40 mph)
Selector lever	Suitable position

Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-1063, "Diagnosis Procedure".

NO >> INSPECTION END

${f 5.}$ PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-1063, "Component Function Check".

NOTE:

Use component function check the overall function of the transmission range switch circuit (CVT models) or the park/neutral position (PNP) switch circuit (M/T models). During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-1063</u>, "<u>Diagnosis Procedure</u>".

Component Function Check

1. PERFORM COMPONENT FUNCTION CHECK

Turn ignition switch ON.

Check the voltage between ECM harness connector and ground as per the following conditions.

ECM						V 16
Connector	+	Connector	-	Condition		Voltage (Approx.)
Connector	Terminal	Connector	Terminal			(, 44, 2, 11)
F24	103	E19	152	Selector lever	P or N (CVT) Neutral (M/T)	0 V
				Except above	Battery voltage	

Is the inspection result normal?

YES >> INSPECTION END

>> Proceed to EC-1063, "Diagnosis Procedure". NO

Diagnosis Procedure

1. INSPECTION START

Check which type of transmission the vehicle is equipped with.

Which type of transmission?

CVT >> GO TO 2.

M/T >> GO TO 6.

2.CHECK TRANSMISSION RANGE SWITCH POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect transmission range switch harness connector.
- Turn ignition switch ON.

EC

Α

D

Е

F

Н

INFOID:0000000011611096

N

Р

INFOID:0000000011611097

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Check the voltage between transmission range switch harness connector and ground.

	+		
Transmission	range switch	_	Voltage
Connector	Terminal		
F30	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 3.

${f 3.}$ CHECK TRANSMISSION RANGE SWITCH POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between transmission range switch harness connector and IPDM E/R harness connector.

+				
Transmission	range switch	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F30	1	E15	58	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4.CHECK TRANSMISSION RANGE SWITCH SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between transmission range switch harness connector and ECM harness connector.

+				
Transmission range switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F30	2	F24	103	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK TRANSMISSION RANGE SWITCH

Check the transmission range switch. Refer to TM-454, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace transmission range switch. Refer to TM-570, "Removal and Installation".

6. CHECK PARK/NEUTRAL POSITION (PNP) SWITCH POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect PNP switch harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between PNP switch harness connector and ground.

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

		100.07			<u> </u>
	+				
PNP	switch		-	Voltage	
Connector	Termi	nal			
F49	2	(Ground	Battery voltage	
the inspection	n result n	ormal?			
	O TO 7.				
		_		ower supply ci	rcuit.
.CHECK PN			GNAL CIR	CUIT	
Turn ignition Disconnec		OFF. rness conne	ootor		
				narness conne	ector and ECM harness connector.
+			-		
PNP swi	tch	E	:CM	Continuity	
Connector	Terminal	Connector	Terminal		
F49	3	F24	103	Existed	
Also check	c harness	for short to	ground and	to power.	
the inspection	<u>n result n</u>	ormal?			
	O TO 8.				
	•	place error-	detected pa	irts.	
.CHECK PN					
neck the PNF <u>n"</u> .	P switch.	Refer to TM	1-20, "PARI	<u>(/NEUTRAL P</u>	OSITION (PNP) SWITCH: Component Inspec-
the inspection	n result n	ormal?			
			ent. Refer t	o GI-44, "Inter	mittent Incident".
					and Installation".

Revision: 2014 October EC-1065 2015 JUKE

P100C VALVE TIMING OFFSET DATA

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P100C VALVE TIMING OFFSET DATA

Description INFOID:0000000011611098

Valve timing offset data is measured per engine and written in ECM at the factory. ECM controls VTC according to the information written in ECM to correct the variation in valve timing which depends on engine. After ECM or engine assembly is replaced, the 2D code affixed to the VTC cover must be written in ECM. If valve timing offset data writing is not completed, ECM detects DTC.

DTC Logic (INFOID:000000011611099

DTC DETECTION LOGIC

DTC	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P100C	V/T OFFSET DATA NOT WRITTEN (Valve timing offset data not written)	ECM detects the initial value of valve timing offset data.	Valve timing offset data writing is not yet implemented.

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-1066, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611100

1. PERFORM VALVE TIMING OFFSET DATA WRITING

Perform "VALVE TIMING OFFSET DATA WRITING". Refer to EC-742, "Work Procedure".

>> INSPECTION END

P1148 CLOSED LOOP CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1148 CLOSED LOOP CONTROL

DTC Logic

DTC DETECTION LOGIC

NOTE:

DTC P1148 is displayed with another DTC for A/F sensor 1. Perform the trouble diagnosis for the corresponding DTC.

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1148	CLOSED LOOP-B1 (Closed loop bank 1)	The closed loop control function for bank 1 does not operate even when vehicle is being driven in the specified condition.	 Harness or connectors (The A/F sensor 1 circuit is open or shorted.) A/F sensor 1 A/F sensor 1 heater

EC

Α

D

Е

F

G

Н

Κ

L

M

Ν

0

Р

INFOID:0000000011611103

P1197 OUT OF GAS

Description

This diagnosis result is detected when the fuel level of the fuel tank is extremely low and the engine does not run normally.

DTC Logic INFOID:0000000011611102

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1197	FUEL RUN OUT (Out of gas)	 Fuel rail pressure remains at 1.1 MPa (11 bar, 11.2 kg/cm², 159.5 psi) or less for 5 seconds or more with the fuel level too low. Fuel rail pressure remains 2.7 MPa (27 bar, 27.5 kg/cm², 392 psi) lower than a target fuel pressure for 5 seconds or more with the fuel level too low. 	Out of gas Harness or connectors (Low pressure fuel pump circuit is open or shorted.) Low pressure fuel pump Fuel pressure regulator Low pressure fuel system Harness or connectors (High pressure fuel pump circuit is shorted.) High pressure fuel pump High pressure fuel system Fuel rail pressure sensor Disconnection of the fuel hose

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-I

Start the engine.

Does the engine start?

YES >> GO TO 3.

NO >> Proceed to <u>EC-1068</u>, "Diagnosis Procedure".

3.PERFORM DTC CONFIRMATION PROCEDURE-II

1. Warm up the engine to the normal operating temperature.

NOTE:

For best results, warm up the engine until "COOLAN TEMP/S" on "DATA MONITOR" mode of "ENGINE" using CONSULT reaches at least 70°C (158°F).

- 2. Keep the engine speed at 3,500 rpm for 5 seconds and let it idle at least 60 seconds.
- 3. Check the 1st trip DTC.

NOTE:

If the fuel tank has sufficient fuel, this diagnosis result may not be detected.

Is 1st trip DTC detected?

YES >> Proceed to EC-1068, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. REFUEL THE VEHICLE

P1197 OUT OF GAS

OTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >	[MR EXCEPT FOR NISMO RS MODELS]	
1. Refuel 10 liter (10 US qt, 8 imp qt). CAUTION:	A	
Never refuel more than 10 liter.	Α.	i.
2. Start the engine and keep the engine speed at 3,000 rpm f	or 30 seconds.	
NOTE:	D/S" on "DATA MONITOR" mode of "ENCINE" EC	
For best results, warm up the engine until "COOLAN TEM using CONSULT reaches at least 70°C (158°F).	P/S on DATA MONITOR mode of ENGINE	
3. Turn ignition switch OFF and wait at least 10 seconds.		
4. Turn ignition switch ON.	C	,
5. Turn ignition switch OFF and wait at least 10 seconds.		
6. Turn ignition switch ON.		
7. Erase the DTC.	D)
8. Start the engine and let it idle at least 60 seconds.9. Perform DTC confirmation procedure again. Refer to EC-1	068 "DTC Logic"	
Is 1st trip DTC detected?	ood, bro Logic.	
YES >> GO TO 2.	E	
NO >> INSPECTION END		
_		
2.CHECK LOW PRESSURE FUEL PUMP	F	
Refer to EC-1233. "Component Function Check".		
Is inspection result normal?		
YES >> GO TO 3.	G	j
NO >> Repair or replace error-detected parts.		
3.CHECK HIGH PRESSURE FUEL PUMP		
Refer to EC-1211, "Component Function Check".	———— Н	l
Is inspection result normal?		
YES >> Check the fuel hose for disconnection and loosene	ess .	
NO >> Repair or replace error-detected parts.	· ·	
·		
	J	
	K	,
	L	
	M	
	N	
	0)
	P	1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P119A, P119B FUEL RAIL PRESSURE SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P119A	FUEL PRESSURE SENSOR (Fuel pressure sensor)	 All of the following conditions are satisfied: Battery voltage: 8 V or more Under engine start condition Engine coolant temperature at previous ignition switch OFF: 65°C (149°F) or more Engine coolant temperature: 35°C (65°F) or less Temperature difference between engine coolant and intake air: Less than 6°C (42°F) Fuel rail pressure: Less than 1.0 MPa (10.2 kg/cm², 145 psi) (calculated by ECM) Fuel system monitor: Excessively RICH 	Harness or connectors (Fuel rail pressure sensor circuit is open or shorted.)
P119B	FUEL PRESSURE SENSOR (Fuel pressure sensor)	 All of the following conditions are satisfied: Battery voltage: 8 V or more Ignition switch: ON (engine stopped) Engine coolant temperature at previous ignition switch OFF: 65°C (149°F) or more Engine coolant temperature: 35°C (65°F) or less Temperature difference between engine coolant and intake air: Less than 6°C (42°F) Fuel rail pressure: More than 1.5 MPa (15.3 kg/cm², 217 psi) (calculated by ECM) Fuel system monitor: Excessively LEAN 	Fuel rail pressure sensor Sensor power supply 2

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING-1

If DTC Confirmation Procedure is previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, check that battery voltage is 9 V or more with ignition switch ON.

>> GO TO 2.

2.PRECONDITIONING-2

NOTE:

- When it is certain that the previous driving is performed with the engine warmed up, the next steps can be performed.
- When it is difficult to satisfy the conditions, performing Component Function Check can identify the presence
 or absence of malfunction in the part/system that may result in a possible cause of this DTC. (Perform DTC
 Confirmation Procedure as much as possible.)
- 1. Start the engine and warm it up until engine coolant temperature reaches 70°C (158°F) or more.
- Stop the engine and leave the vehicle in a cool place (soak the engine) until the engine coolant temperature reaches 35°C (95°F) or less.

CAUTION:

- The difference between air temperature and engine coolant temperature must be 5°C (9°F) or less.
- Never turn ignition switch ON during soak the engine.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Are the conditions satisfied?

YES >> GO TO 4.

NO >> GO TO 3.

3. COMPONENT FUNCTION CHECK

With CONSULT

- 1. Turn ignition switch OFF.
- Start the engine.
- On CONSULT screen, select "DATA MONITOR" mode of "ENGINE".
- 4. Check the value of "FUEL PRES SEN V" under the following conditions.

Monitor Item	Condition	Values/Status
	Engine speed: Idle	1,140 – 1,460 mV
FUEL PRES SEN V	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

⋈Without CONSULT

- Turn ignition switch OFF.
- Start the engine. 2.
- Check fuel rail pressure sensor signal voltage.

ECM					
Connector	+ - Terminal		Condition	Value (Approx.)	
Connector					
F7	2	3	[Engine is running]Warm-up conditionIdle speed	1.14 – 1.46 V	
1 7	2	3	[Engine is running]Warm-up conditionRevving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V	

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Proceed to EC-1071, "Diagnosis Procedure".

4.PERFORM DTC CONFIRMATION PROCEDURE-1

(P)With CONSULT

- Turn ignition switch ON (engine stopped).
- On CONSULT screen, select "ENGINE" >> "DATA MONITOR" >> "COOLAN TEMP/S" and "INT/A TEMP SE".
- Check that the indicated value of "COOLAN TEMP/S" is less than 35°C (95°F).
- Check that the difference between "INT/A TEMP SE" and "COOLAN TEMP/S" is 5°C (41°F) or less.
- 5. Check "Self-diagnostic result" of "ENGINE".

Is the DTC detected?

>> Proceed to EC-1071, "Diagnosis Procedure".

NO-1 (Conditions satisfied)>>GO TO 5.

NO-2 (Conditions not satisfied)>>GO TO 2.

5 .PERFORM DTC CONFIRMATION PROCEDURE-2.

- Start the engine (or cranking) at least 1 second.
- Check "Self-diagnostic result" of "ENGINE".

Is the DTC detected?

- >> Proceed to EC-1071, "Diagnosis Procedure". YES
- >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

Revision: 2014 October

NOTE:

EC-1071 2015 JUKE EC

Α

D

Е

Н

K

M

Ν

INFOID:0000000011771598

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Turning the ignition switch ON with FRP sensor harness connector disconnected causes ECM to detect DTC P0190. Be sure to erase the DTC when the diagnosis procedure.

${f 1}$.CHECK FUEL RAIL PRESSURE (FRP) SENSOR POWER SUPPLY-1

- 1. Turn ignition switch OFF.
- 2. Disconnect FRP sensor connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between FRP sensor harness connector terminals.

	Vi. Ita.			
Connector	+	-	Voltage (Approx.)	
Connector	tern	ninal	(11 /	
F7	1	3	5 V	

Inspection result normal?

YES >> GO TO 7.

NO >> GO TO 2.

2.CHECK FRP SENSOR POWER SUPPLY-2

Check the voltage between FRP sensor harness connector and the ground.

	+		Maltana
FRP	sensor	_	Voltage (Approx.)
Connector Terminal			, , ,
F7	1	Ground	5 V

Is inspection result normal?

YES >> GO TO 5.

NO >> GO TO 3.

3.check sensor power supply circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

+			_	
FRP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	1	F23	29	Existed

4. Also check harness for short to power and short to ground.

Is inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected part.

CHECK FRP SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+		-		
FRP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	3	F23	13	Existed

4. Also check harness for short to power.

Is inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and the ground.

Е	СМ	Ground	Continuity
Connector	Terminal	Giouna	Continuity
	9		Existed
F23	10		
	50		
F24	60	Ground	
Γ2 4	110		
	147		
E19	149		
	152		

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

7.CHECK FRP SENSOR SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

+			_	
FRP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	2	F23	25	Existed

4. Also check harness for short to ground and to power.

Is inspection result normal?

YES >> Replace fuel rail pressure sensor. Refer to EM-207, "Exploded View".

NO >> Repair or replace error-detected parts.

EC

Α

D

Е

0

K

Ν

Р

P119C FUEL RAIL PRESSURE SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P119C	FUEL PRESSURE SENSOR (Fuel pressure sensor)	 All of the following conditions are satisfied: Battery voltage: 8 V or more Engine speed: 50 rpm or more Engine coolant temperature: With a background of 65°C (149°F) or more during the trip Remaining fuel amount: 15% or more Fuel cut: No 	Harness or connectors (Fuel rail pressure sensor circuit is open or shorted.) Fuel rail pressure sensor Sensor power supply 2

DTC CONFIRMATION PROCEDURE

1. CHECK DTC PRIORITY

If DTC P119C is displayed with DTC P0190, first perform the confirmation procedure (trouble diagnosis) for DTC P0190.

Is applicable DTC detected?

YES >> Perform diagnosis of applicable. Refer to <u>EC-904, "DTC Logic"</u>.

NO >> GO TO 2.

2.PRECONDITIONING-1

If DTC Confirmation Procedure is previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, check that battery voltage is 9 V or more with ignition switch ON.
- Remaining fuel amount must be 15% or more.

>> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start the engine and warm it up until the engine coolant temperature reaches 70°C (158°F) or more.
- 2. Drive the vehicle and accelerate 3 consecutive seconds or more with the engine speed 1,500 rpm or more.
- Check "Self-diagnostic result" of "ENGINE".

Is the DTC detected?

YES >> Proceed to <u>EC-1074</u>, "<u>Diagnosis Procedure</u>".

NO-1 >> To check malfunction symptom before repair: Refer to GI-44, "Intermittent Incident".

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011771601

NOTE:

Turning the ignition switch ON with FRP sensor harness connector disconnected causes ECM to detect DTC P119C. Be sure to erase the DTC when the diagnosis procedure.

1. CHECK DTC PRIORITY

If DTC P119C is displayed with DTC P0190, first perform the confirmation procedure (trouble diagnosis) for DTC P0190.

Is applicable DTC detected?

P119C FUEL RAIL PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> Perform diagnosis of applicable. Refer to <u>EC-1074</u>, "DTC Logic".

NO >> GO TO 2.

2.CHECK FUEL RAIL PRESSURE (FRP) SENSOR POWER SUPPLY-1

1. Turn ignition switch OFF.

2. Disconnect FRP sensor connector.

3. Turn ignition switch ON.

4. Check the voltage between FRP sensor harness connector terminals.

	V 16			
Connector	+	_	Voltage (Approx.)	
Connector	terminal		, , ,	
F7	1	3	5 V	

Inspection result normal?

YES >> GO TO 8.

NO >> GO TO 3.

3.CHECK FRP SENSOR POWER SUPPLY-2

Check the voltage between FRP sensor harness connector and the ground.

	+		V/ I/
FRP	sensor	_	Voltage (Approx.)
Connector Terminal			, , ,
F7	1	Ground	5 V

Is inspection result normal?

YES >> GO TO 6.

NO >> GO TO 4.

4. CHECK SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check harness connector for short to power and short to ground, between the following terminals.

+		_		
FRP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	1	F23	29	Existed

4. Also check harness for short to power and short to ground.

Is inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected part.

6. CHECK FRP SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between FRP sensor harness connector and ECM harness connector.

EC

Α

Е

D

F

G

Н

.

L

K

M

N

14

0

Р

2015 JUKE

P119C FUEL RAIL PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+		_		
FRP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	3	F23	13	Existed

4. Also check harness for short to power.

Is inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and the ground.

ECM		Ground	Continuity	
Connector	Terminal	Giodila	Continuity	
	9			
F23	10			
	50		Existed	
F24	60	Ground		
	110	Ground		
	147			
E19	149			
	152			

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

8. CHECK FRP SENSOR SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between FRP sensor harness connector and ECM harness connector.

+		-		
FRP	sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F7	2	F23	25	Existed

4. Also check harness for short to ground and to power.

Is inspection result normal?

YES >> Replace fuel rail pressure sensor. Refer to EM-207, "Exploded View".

NO >> Repair or replace error-detected parts.

P1212 TCS COMMUNICATION LINE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1212 TCS COMMUNICATION LINE

Description INFOID:0000000011611104

This CAN communication line is used to control the smooth engine operation during the TCS operation. Pulse signals are exchanged between ECM and "ABS actuator and electric unit (control unit)".

Be sure to erase the malfunction information such as DTC not only for "ABS actuator and electric unit (control unit)" but also for ECM after TCS related repair.

DTC Logic INFOID:0000000011611105

DTC DETECTION LOGIC

NOTE:

- If DTC P1212 is displayed with DTC U1001, first perform the trouble diagnosis for DTC U1001. Refer to EC-783, "DTC Logic".
- If DTC P1212 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to EC-1051, "DTC Logic".

Freeze frame data is not stored in the ECM for this self-diagnosis.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P1212	TCS/CIRC (TCS communication line)	ECM can not receive the information from "ABS actuator and electric unit (control unit)" continuously.	Harness or connectors (CAN communication line is open or shorted.) ABS actuator and electric unit (control unit) Dead (Weak) battery

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON. 2.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10.5V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for at least 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1077, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

Perform the trouble diagnosis for TCS. Refer to BRC-58, "Work Flow".

NOTE:

If DTC P1212 is displayed with DTC UXXXX and/or P0607, perform the following trouble diagnosis.

- Trouble diagnosis for DTC UXXXX Refer to EC-694. "DTC Index".
- Trouble diagnosis for DTC P0607 Refer to <u>EC-1051</u>, "DTC Logic".

EC

Α

D

F

Н

N

INFOID:0000000011611106

Р

P1217 ENGINE OVER TEMPERATURE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1217 ENGINE OVER TEMPERATURE

DTC Logic

DTC DETECTION LOGIC

NOTE

- If DTC P1217 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX.
- If DTC P1217 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-1051</u>, "DTC Logic".

If the cooling fan or another component in the cooling system malfunctions, engine coolant temperature will rise.

When the engine coolant temperature reaches an abnormally high temperature condition, a malfunction is indicated.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1217	ENG OVER TEMP [Engine over tempera- ture (Overheat)]	 Cooling fan does not operate properly (Overheat). Cooling fan system does not operate properly (Overheat). Engine coolant was not added to the system using the proper filling method. Engine coolant is not within the specified range. 	Harness or connectors (Cooling fan circuit is open or shorted.) IPDM E/R Cooling fan control module Cooling fan motor Radiator hose Radiator Radiator cap Reservoir tank Water pump Thermostat Water control valve

CAUTION:

When a malfunction is indicated, be sure to replace the coolant. Refer to <u>CO-39</u>, "<u>Draining and Filling</u>". Also, replace the engine oil. Refer to <u>CO-39</u>, "<u>Draining and Filling</u>".

- 1. Fill radiator with coolant up to specified level with a filling speed of 2 liters per minute. Be sure to use coolant with the proper mixture ratio. Refer to MA-13, "Anti-Freeze Coolant Mixture Ratio".
- 2. After refilling coolant, run engine to ensure that no water-flow noise is emitted.

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-1078, "Component Function Check".

NOTE:

Use component function check to check the overall function of the cooling fan. During this check, a DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-1079</u>, "<u>Diagnosis Procedure</u>".

Component Function Check

1. PERFORM COMPONENT FUNCTION CHECK-I

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator.

Wrap a thick cloth around cap. Carefully remove the cap by turning it a quarter turn to allow built-up pressure to escape. Then turn the cap all the way off.

P1217 ENGINE OVER TEMPERATURE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

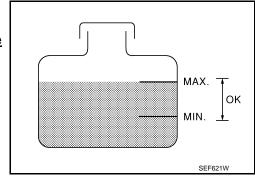
Check the coolant level in the reservoir tank and radiator.

Allow engine to cool before checking coolant level.

Is the coolant level in the reservoir tank and/or radiator below the proper range?

YES >> Proceed to EC-1079, "Diagnosis Procedure".

NO >> GO TO 2.



2 PERFORM COMPONENT FUNCTION CHECK-II

Confirm whether customer filled the coolant or not.

Did customer fill the coolant?

YES >> Proceed to EC-1079, "Diagnosis Procedure".

NO >> GO TO 3.

3.perform component function check-iii

(P)With CONSULT

- 1. Turn ignition switch ON.
- Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- Check that cooling fan speed varies according to the percentage.

®Without CONSULT

- Activate IPDM E/R auto active test and check cooling fan motors operation. Refer to PCS-11, "Diagnosis Description".
- 2. Check that cooling fan operates.

Is the inspection result normal?

YES >> INSPECTION END

>> Proceed to EC-1079, "Diagnosis Procedure". NO

Diagnosis Procedure

1. CHECK COOLING FAN OPERATION

(P)With CONSULT

- Turn ignition switch ON.
- Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- Check that cooling fan speed varies according to the percentage.

Activate IPDM E/R auto active test and check cooling fan motors operation. Refer to PCS-11, "Diagnosis Description".

EC-1079

Check that cooling fan operates.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to EC-1195, "Diagnosis Procedure".

2.check cooling system for Leak-I

Check cooling system for leak. Refer to <a>CO-39, "Inspection".

Is leakage detected?

YES >> GO TO 3.

NO >> GO TO 4.

3.CHECK COOLING SYSTEM FOR LEAK-II

Check the following for leak.

- Hose (Refer to CO-39, "Inspection".)
- Radiator (Refer to <u>CO-48, "Inspection"</u>.)
- Water pump (Refer to CO-52, "Inspection".)

Α

EC

D

F

INFOID:0000000011611109

M

N

2015 JUKE

P1217 ENGINE OVER TEMPERATURE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

>> Repair or replace malfunctioning part.

4. CHECK RADIATOR CAP

Check radiator cap. Refer to CO-44, "Radiator Cap Inspection".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace radiator cap. Refer to CO-45, "Exploded View".

5. CHECK THERMOSTAT

Check thermostat.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Replace thermostat.

6. CHECK WATER CONTROL VALVE

Check water control valve.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Replace water control valve.

7.check engine coolant temperature sensor

Refer to EC-846, "Component Inspection (Engine Coolant Temperature Sensor 1)".

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace engine coolant temperature sensor.

8. OVERHEATING CAUSE ANALYSIS

If the cause cannot be isolated, check the CO-37, "Diagnosis Chart by Symptom".

>> INSPECTION END

P1225 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1225 TP SENSOR

DTC Logic

DTC DETECTION LOGIC

•	DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause	
	P1225	CTP LEARNING-B1 [Closed throttle position learning performance]	Closed throttle position learning value is excessively low.	Electric throttle control actuator (TP sensor 1 and 2)	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-1081, "Diagnosis Procedure"</u>.

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

- 1. Turn ignition switch OFF.
- 2. Remove the intake air duct. Refer to EM-191, "Exploded View".
- Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

YES >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

NO >> Remove the foreign matter and clean the electric throttle control actuator inside, then perform throttle valve closed position learning. Refer to EC-739, "Work Procedure".

Α

EC

Е

F

Н

D

M

INFOID:0000000011611114

P1226 TP SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1226	CTP LEARNING-B1 (Closed throttle position learning performance)	Closed throttle position learning is not performed successfully, repeatedly.	Electric throttle control actuator (TP sensor 1 and 2)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON.
- Turn ignition switch OFF, wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Repeat steps 2 and 3 for 32 times.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1082, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611116

1. CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

- 1. Turn ignition switch OFF.
- 2. Remove the intake air duct. Refer to EM-191, "Exploded View".
- 3. Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

YES >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

NO >> Remove the foreign matter and clean the electric throttle control actuator inside, then perform throttle valve closed position learning. Refer to <u>EC-739</u>, "Work Procedure".

P1423, P1424 COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1423, P1424 COLD START CONTROL

Description INFOID:0000000011667894

ECM controls fuel injection timing and fuel injection quantity when engine is started with the engine cold. This control promotes the activation of three way catalyst by heating the catalyst and reduces emissions.

INFOID:0000000011667895

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P1423 or P1424 is displayed with other DTC, first perform the trouble diagnosis for other DTC.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1423	COLD START CONTROL (Cold start emission reduction strategy monitoring)	ECM does not control fuel injection timing properly when engine is started with the engine cold.	ECM
P1424	COLD START CONTROL (Cold start emission reduction strategy monitoring)	ECM does not control fuel injection quantity properly when engine is started with the engine cold.	LOW

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

(P)WITH CONSULT

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check that "COOLAN TEMP/S".
- If it is between 5°C (41°F) and 40°C (104°F) go to the following steps.
- If it is below 5°C (41°F) warm engine up to more than 5°C (41°F) and retry from step 1.
- If it is above 40°C (104°F) cool engine down to less than 40°C (104°F) and retry from step 1.
- Start engine and let it idle for 5 minutes.
- Check 1st trip DTC.

@WITH GST

Follow the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-1083, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1.INSPECTION START

- Turn ignition switch ON.
- 2. Erase DTC.
- Perform DTC confirmation procedure. Refer to EC-1083, "DTC Logic". 3.
- Check 1st trip DTC.

Е

F

Α

EC

N

INFOID:0000000011667896

P1423, P1424 COLD START CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the 1st trip DTC P1423 or P1424 displayed again?

YES >> Replace ECM. Refer to EC-1255, "Removal and Installation".

NO >> INSPECTION END

P1451 PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1451 PRESSURE SENSOR

DTC Logic INFOID:0000000011667897

DTC DETECTION LOGIC

NOTE:

If DTC P1451 is displayed with DTC P0452 or P0453, first perform the trouble diagnosis for DTC P0452 or P0453. Refer to EC-996, "DTC Logic" or EC-999, "DTC Logic".

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1451	TC/SC PRES-EVAP PRES (EVAP control system pressure sensor/turbocharger boost sensor correlation)	ECM detects a state that the pressure difference remains –13.0 kPa (–98 mmHg, –3.83 inHg) or less/13.5 kPa (102 mmHg, 3.99 inHg) or more for continuously for 5 seconds or more under the condition that the pressure of the EVAP control system pressure sensor and that of the turbocharger boost sensor are equal.	 EVAP control system pressure sensor Turbocharger boost sensor Clogging, crushing, or damage in hose or piping

DTC CONFIRMATION PROCEDURE

NOTE:

Never refuel before and during the following procedure.

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

- Start engine and warm it up to normal operating temperature
- Turn ignition switch OFF and wait at least 10 seconds. 2.
- Start the engine. Wait at least for 15 seconds after the start of idle running.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1085, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK HOSE AND PIPING

- Turn ignition switch OFF.
- Check the following.
- Blockage, crush, or damage in the hose and the piping of EVAP purge line between fuel tank and intake
- Blockage, crush, or damage in the hose and the piping of intake air passage between inlet air duct and intake manifold.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts

2.CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

Check EVAP control system pressure sensor. Refer to EC-1086, "Component Inspection (EVAP Control System Pressure Sensor)".

Is the inspection result normal?

EC-1085 Revision: 2014 October 2015 JUKE

EC

Α

Е

D

M

INFOID:0000000011667898

P1451 PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> GO TO 3.

NO >> Replace EVAP control system pressure sensor. Refer to <u>FL-26, "2WD : Exploded View"</u>.

3.CHECK TURBOCHARGER BOOST SENSOR

Check turbocharger boost sensor. Refer to <u>EC-1086</u>, "Component Inspection (<u>Turbocharger Boost Sensor</u>)". <u>Is the inspection result normal?</u>

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace turbocharger boost sensor. Refer to EM-193, "Exploded View".

Component Inspection (EVAP Control System Pressure Sensor)

INFOID:0000000011667899

1. CHECK EVAP CONTROL SYSTEM PRESSURE SENSOR

- 1. Turn ignition switch OFF.
- Remove EVAP control system pressure sensor with its harness connector connected from EVAP canister. Always replace O-ring with a new one.
- 3. Install a vacuum pump to EVAP control system pressure sensor.
- 4. Turn ignition switch ON and check output voltage between ECM harness connector and ground under the following conditions.

ECM			Condition	
Connector	+	_	[Applied vacuum kPa (kg/cm², psi)]	Voltage
Connector	Terminal		[, tppiled vacadin it a (itg/oin , pol)]	
E19	121	148	Not applied	0.5 - 4.6 V
LIS	121 140		-26.7 (-0.272, -3.87)	2.1 to 2.5 V lower than above value

CAUTION:

- Always calibrate the vacuum pump gauge when using it.
- Do not apply below -93.3 kPa (-0.952 kg/cm², -13.53 psi) or pressure over 101.3 kPa (1.033 kg/cm², 14.69 psi).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP control system pressure sensor. Refer to FL-26, "2WD : Exploded View".

Component Inspection (Turbocharger Boost Sensor)

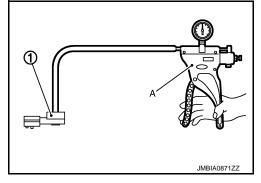
INFOID:0000000011667900

1. CHECK TURBOCHARGER BOOST SENSOR

- Turn ignition switch OFF.
- 2. Remove turbocharger boost sensor with its harness connector.
- Install pressure pump (A) to turbocharger boost sensor (1).
 CAUTION:

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminals as per the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

P1451 PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

ECM			O Title ID and ID let at a fe	M. H	
Connector	+	_	Condition [Pressure (Relative to atmospheric pressure)]	Voltage (Approx.)	
Connector	Tern	ninal		(11 - 7	
F23	11 13	13	0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V	
	11	13	40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	2.67 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to EM-241, "Exploded View".

Α

EC

D

Е

F

G

Н

J

Κ

L

M

Ν

0

P1550 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1550 BATTERY CURRENT SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1550	BAT CURRENT SENSOR (Battery current sensor circuit range/performance)	The output voltage of the battery current sensor remains within the specified range while engine is running.	Harness or connectors (Battery current sensor circuit is open or shorted.) Battery current sensor Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait at least 10 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1088, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611124

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect battery current sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between battery current sensor harness connector and ground.

-	+		
Battery current sensor		-	Voltage (Approx.)
Connector	Connector Terminal		, , ,
F52	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

P1550 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between battery current sensor harness connector and ECM harness connector.

+ Battery current sensor		-			
		ECM		Continuity	
Connector	Terminal	Connector	Terminal		
F52	3	F23	43	Existed	

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4.CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

+ Battery current sensor			_	
		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	4	F23	38	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5. CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-1089, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

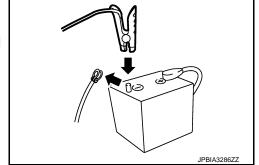
NO >> Replace battery negative cable assembly.

Component Inspection

1. CHECK BATTERY CURRENT SENSOR

- Turn ignition switch OFF.
- 2. Reconnect harness connectors disconnected.
- 3. Disconnect battery negative cable.
- Install jumper cable between battery negative terminal and body ground.
- Turn ignition switch ON.
- 6. Check the voltage between ECM harness connector and ground.

	ECM	V 16	
Connector	+	-	Voltage (Approx.)
Connector	Tei	rminal	(11 -)
F23	38	43	2.5 V*



^{*:} Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

EC

Α

Е

D

K

INFOID:0000000011611125

Ν

M

0

D

P1550 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly.

P1551, P1552 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1551, P1552 BATTERY CURRENT SENSOR

DTC Logic INFOID:0000000011611126

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause	
P1551	BAT CURRENT SENSOR (Battery current sensor circuit low input)	An excessively low voltage from the sensor is sent to ECM.	Harness or connectors (Battery current sensor circuit is open or shorted.)	
P1552	BAT CURRENT SENSOR (Battery current sensor circuit high input)	An excessively high voltage from the sensor is sent to ECM.	 Battery current sensor Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Sensor power supply 2 circuit 	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V with ignition switch ON

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1091, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect battery current sensor harness connector.
- Turn ignition switch ON.
- Check the voltage between battery current sensor harness connector and ground.

+ Battery current sensor		<u>-</u>	Voltage (Approx.)	
Connector	Terminal		(дрргох.)	
F52	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

EC-1091 Revision: 2014 October 2015 JUKE

EC

Α

Е

Н

K

INFOID:0000000011611127

M

Ν

P1551, P1552 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Perform EC-1239, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3. CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between battery current sensor harness connector and ECM harness connector.

	+		-	
Battery cur	rent sensor	E	СМ	Continuity
Connector	Terminal	Connector	Terminal	
F52	3	F23	43	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between battery current sensor harness connector and ECM harness connector.

	+		_	
Battery cur	rent sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	4	F23	38	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5. CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-1089, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace battery negative cable assembly.

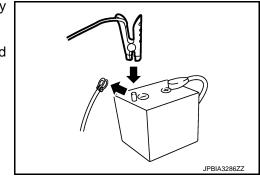
Component Inspection

INFOID:0000000011611128

1. CHECK BATTERY CURRENT SENSOR

- Turn ignition switch OFF.
- 2. Reconnect harness connectors disconnected.
- 3. Disconnect battery negative cable.
- 4. Install jumper cable between battery negative terminal and body ground.
- 5. Turn ignition switch ON.
- 6. Check the voltage between ECM harness connector and ground.

ECM			Valla	
Connector	Connector + - Terminal		Voltage (Approx.)	
Connector			(11 -)	
F23	38	43	2.5 V*	



P1551, P1552 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

*: Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly.

EC

Α

D

Е

F

G

Н

J

K

L

M

Ν

0

P1553 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1553 BATTERY CURRENT SENSOR

DTC Logic INFOID:000000011611129

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1553	BAT CURRENT SENSOR (Battery current sensor performance)	The signal voltage transmitted from the sensor to ECM is higher than the amount of the maximum power generation.	Harness or connectors (Battery current sensor circuit is open or shorted.) Battery current sensor Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and wait at least 10 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1094, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611130

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect battery current sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between battery current sensor harness connector and ground.

+			Maltana	
Battery current sensor		-	Voltage (Approx.)	
Connector	Terminal		(11 -)	
F52	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

P1553 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between battery current sensor harness connector and ECM harness connector.

	+		_	
Battery cur	rent sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	3	F23	43	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4.CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

	+		_	
Battery cui	rent sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	4	F23	38	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5. CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-1089, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

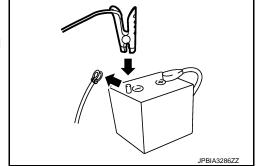
NO >> Replace battery negative cable assembly.

Component Inspection

1. CHECK BATTERY CURRENT SENSOR

- Turn ignition switch OFF.
- 2. Reconnect harness connectors disconnected.
- 3. Disconnect battery negative cable.
- Install jumper cable between battery negative terminal and body ground.
- Turn ignition switch ON.
- 6. Check the voltage between ECM harness connector and ground.

ECM			V 16
Connector	+ -		Voltage (Approx.)
Connector	Tei	rminal	(11 - /
F23	38	43	2.5 V



^{*:} Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Α

EC

E

D

Н

J

1 4

M

L

INFOID:0000000011611131

Ν

 \circ

Ρ

P1553 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly.

P1554 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1554 BATTERY CURRENT SENSOR

DTC Logic INFOID:0000000011611132

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1554	BAT CURRENT SENSOR (Battery current sensor performance)	The output voltage of the battery current sensor is lower than the specified value while the battery voltage is high enough.	Harness or connectors (Battery current sensor circuit is open or shorted.) Battery current sensor Camshaft position sensor Camshaft (Intake) Starter motor Starting system circuit Dead (Weak) battery Sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-1097, "Component Function Check".

NOTE:

Use component function check to check the overall function of the battery current sensor circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1098, "Diagnosis Procedure".

Component Function Check

1.PRECONDITIONING

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 12.8 V at idle.
- Before performing the following procedure, confirm that all load switches and A/C switch are turned OFF.

>> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK

(P)With CONSULT

- Start engine and let it idle.
- Select "BAT CUR SEN" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check "BAT CUR SEN" indication for 10 seconds.
 - "BAT CUR SEN" should be above 2,300 mV at least once.

Without CONSULT

- 1. Start engine and let it idle.
- Check the voltage between ECM harness connector and ground.

ECM			
Connector	+	-	Voltage
Connector	Tern	ninal	
F23	38	43	Above 2.3 V at least once

Is the inspection result normal?

YES >> INSPECTION END

>> Proceed to EC-1098, "Diagnosis Procedure". NO

EC-1097 Revision: 2014 October 2015 JUKE

EC

Α

Е

Н

INFOID:0000000011611133

L

Ν

P1554 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Diagnosis Procedure

INFOID:0000000011611134

${f 1}.$ CHECK BATTERY CURRENT SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect battery current sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between battery current sensor harness connector and ground.

	+		\
Battery current sensor		-	Voltage (Approx.)
Connector	Connector Terminal		() 1 - 7
F52	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3. CHECK BATTERY CURRENT SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between battery current sensor harness connector and ECM harness connector.

+		_		
Battery cur	rent sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	3	F23	43	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

f 4.CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

	+ -		_	
Battery cur	rent sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	4	F23	38	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5.CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-1089, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

P1554 BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Replace battery negative cable assembly.

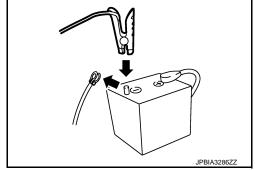
Component Inspection

INFOID:0000000011611135

1. CHECK BATTERY CURRENT SENSOR

- 1. Turn ignition switch OFF.
- 2. Reconnect harness connectors disconnected.
- 3. Disconnect battery negative cable.
- 4. Install jumper cable between battery negative terminal and body ground.
- Turn ignition switch ON.
- Check the voltage between ECM harness connector and ground.

ECM			
Connector	+	-	Voltage (Approx.)
Connector	Ter	minal	(11 - /
F23	38	43	2.5 V*



^{*:} Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly.

EC

Α

С

D

Е

-

Н

ı

J

K

L

M

Ν

0

P1556, P1557 BATTERY TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1556, P1557 BATTERY TEMPERATURE SENSOR

DTC Logic INFOID:0000000011611136

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1556	BAT TMP SEN/CIRC (Battery temperature sensor circuit low input)	Signal voltage from Battery temperature sensor remains 0.16V or less for 5 seconds or more.	Harness or connectors [Battery current sensor (Battery temperature sensor) circuit is shorted.]
P1557	BAT TMP SEN/CIRC (Battery temperature sensor circuit high input)	Signal voltage from Battery temperature sensor remains 4.84V or more for 5 seconds or more.	Battery current sensor (Battery temperature sensor)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 10 V or more at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine and let it idle at least 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1100, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

INFOID:0000000011611137

1. CHECK BATTERY TEMPERATURE SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect battery current sensor harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between battery current sensor harness connector and ground.

	+		V 16	
Battery current sensor		_	Voltage (Approx.)	
Connector	Terminal		(11 -)	
F52	2	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK BATTERY TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between battery current sensor harness connector and ECM harness connector.

P1556, P1557 BATTERY TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Battery current sensor	
Connector Terminal Connector Terminal F52 2 F23 32 Existed 4. Also check harness for short to ground. Is the inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. 3. CHECK BATTERY TEMPERATURE SENSOR GROUND CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between battery current sensor harness connector and ECM harness connector. +	
4. Also check harness for short to ground. Is the inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. 3. CHECK BATTERY TEMPERATURE SENSOR GROUND CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between battery current sensor harness connector and ECM harness connector. +	_
Sthe inspection result normal? YES SPErform the trouble diagnosis for power supply circuit. NO SPERIOR OF SPERI	_
Sthe inspection result normal? YES >> Perform the trouble diagnosis for power supply circuit. NO >> Repair or replace error-detected parts. 3. CHECK BATTERY TEMPERATURE SENSOR GROUND CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between battery current sensor harness connector and ECM harness connector. 2. Disconnector ECM harness connector Continuity between battery current sensor harness connector and ECM harness connector. 2. Disconnector Terminal Connector Terminal Connector Terminal ECM Continuity Connector Terminal Existed 4. Also check harness for short to power. 3. Terminal Existed 4. Also check harness for short to power. 3. Terminal Existed 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101. "Component Inspection".	_
3. CHECK BATTERY TEMPERATURE SENSOR GROUND CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between battery current sensor harness connector and ECM harness connector. + Battery current sensor ECM Continuity Connector Terminal Connector Terminal F52 3 F23 43 Existed 4. Also check harness for short to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101. "Component Inspection".	_
3. CHECK BATTERY TEMPERATURE SENSOR GROUND CIRCUIT 1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between battery current sensor harness connector and ECM harness connector. +	
1. Turn ignition switch OFF. 2. Disconnect ECM harness connector. 3. Check the continuity between battery current sensor harness connector and ECM harness connector. +	_
2. Disconnect ECM harness connector. 3. Check the continuity between battery current sensor harness connector and ECM harness connector. +	
3. Check the continuity between battery current sensor harness connector and ECM harness connector. +	
+ Battery current sensor ECM Continuity Connector Terminal Connector Terminal F52 3 F23 43 Existed 4. Also check harness for short to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101, "Component Inspection".	
Battery current sensor ECM Continuity Connector Terminal Connector Terminal F52 3 F23 43 Existed 4. Also check harness for short to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101, "Component Inspection".	
Connector Terminal Connector Terminal F52 3 F23 43 Existed 4. Also check harness for short to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101, "Component Inspection".	
4. Also check harness for short to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101, "Component Inspection".	
4. Also check harness for short to power. Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101, "Component Inspection".	
Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101, "Component Inspection".	
Is the inspection result normal? YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101 , "Component Inspection".	
YES >> GO TO 4. NO >> Repair or replace error-detected parts. 4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101 , "Component Inspection".	
4. CHECK BATTERY TEMPERATURE SENSOR Check the battery temperature sensor. Refer to EC-1101, "Component Inspection".	
Check the battery temperature sensor. Refer to <u>EC-1101, "Component Inspection"</u> .	
Is the inspection result normal?	_
YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".	
NO >> Replace battery negative cable assembly.	
Component Inspection INFOID:000000001161	1138
1.CHECK BATTERY TEMPERATURE SENSOR	
Turn ignition switch OFF.	
2. Disconnect battery current sensor.	
Check the resistance between battery current sensor connector terminals.	
Battery current sensor	
+ - Resistance	
Terminal	
2 Continuity with the resistance value 100 Ω or more	
Is the inspection result normal?	
YES >> INSPECTION END	
NO >> Replace battery negative cable assembly.	

P1564 ASCD STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1564 ASCD STEERING SWITCH

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P1564 is displayed with DTC P0605, first perform the trouble diagnosis for DTC P0605. Refer to <u>EC-1049</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1564	ASCD SW (ASCD steering switch)	 An excessively high voltage signal from the ASCD steering switch is sent to ECM. ECM detects that input signal from the ASCD steering switch is out of the specified range. ECM detects that the ASCD steering switch is stuck ON. 	Harness or connectors (ASCD steering switch circuit is open or shorted.) ASCD steering switch ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Turn ignition switch ON.
- 2. Wait at least 10 seconds.
- Press MAIN switch for at least 10 seconds, then release it and wait at least 10 seconds.
- 4. Press CANCEL switch for at least 10 seconds, then release it and wait at least 10 seconds.
- 5. Press ACCEL/RES switch for at least 10 seconds, then release it and wait at least 10 seconds.
- 6. Press COAST/SET switch for at least 10 seconds, then release it and wait at least 10 seconds.
- 7. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1102, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611140

1. CHECK ASCD STEERING SWITCH CIRCUIT

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "CANCEL SW", "RESUME/ACC SW" and "SET SW" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check each item indication as per the following conditions.

Monitor item	Condition		Indication
MAIN SW	MAIN switch	Pressed	ON
	WAIN SWICH	Released	OFF
CANCEL SW	CANCEL switch	Pressed	ON
		Released	OFF

P1564 ASCD STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Monitor item	Condition		Indication
RESUME/ACC ACCEL/RES switch		Pressed	ON
SW	ACCEL/RES SWILLII	Released	OFF
SET SW	COAST/SET switch	Pressed	ON
OL I OW	OOAO1/OL1 SWILCH	Released	OFF

Α

- Turn ignition switch ON.
- Check the voltage between ECM harness connector terminals.

	ECM			Million
Connector	+	-	Condition	Voltage (Approx.)
Terminal		(
			MAIN switch: Pressed	0 V
E19		CANCEL switch: Pressed	1 V	
	134	135	COAST/SET switch: Pressed	2 V
			ACCEL/RES switch: Pressed	3 V
			All ASCD steering switches: Released	4 V

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 2.

2.check ascd steering switch ground circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Disconnect combination switch (spiral cable) harness connector.
- 4. Check the continuity between combination switch (spiral cable) and ECM harness connector.

+		-		
	tion switch I cable)	ECM		Continuity
Connector	Terminal	Connector Terminal		
M33	32	E19	135	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK ASCD STEERING SWITCH INPUT SIGNAL CIRCUIT

Check the continuity between ECM harness connector and combination switch.

+		-		
	tion switch I cable)	ECM		Continuity
 Connector	Terminal	Connector	Terminal	
M33	25	E19	134	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

EC-1103 Revision: 2014 October 2015 JUKE

EC

D

Е

Ν

P1564 ASCD STEERING SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. CHECK ASCD STEERING SWITCH

Refer to EC-1104, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace ASCD steering switch. Refer to SR-11, "Exploded View".

Component Inspection

INFOID:0000000011611141

1. CHECK ASCD STEERING SWITCH

- 1. Disconnect combination switch (spiral cable) harness connector.
- Check the resistance between combination switch harness connector terminals as per the following conditions.

Combination switch (Spiral cable)			0 1111	Resistance	
Connector + -		_	Condition	(Approx.)	
Connector	Terminals				
			MAIN switch: Pressed	0 Ω	
			CANCEL switch: Pressed	250 Ω	
M302	13	16		660 Ω	
			ACCEL/RES switch: Pressed	1,480 Ω	
			All ASCD steering switches: Released	4,000 Ω	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace ASCD steering switch. Refer to <u>SR-11</u>, "Exploded View".

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1572 ASCD BRAKE SWITCH

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P1572 is displayed with DTC P0605, first perform the trouble diagnosis for DTC P0605. Refer to <u>EC-1049</u>, "<u>DTC Logic"</u>.
- This self-diagnosis has the one trip detection logic. When malfunction A is detected, DTC is not stored in ECM memory. And in that case, 1st trip DTC and 1st trip freeze frame data are displayed.
 1st trip DTC is erased when ignition switch OFF. And even when malfunction A is detected in two consecutive trips, DTC is not stored in ECM memory.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		DTC detecting condition	Possible cause	
	ASCD BRAKE SW	A)	When the vehicle speed is above 30 km/h (19 MPH), ON signals from the stop lamp switch and the brake pedal position switch are sent to the ECM at the same time.	Harness or connectors (Stop lamp switch circuit is shorted.) (Brake pedal position switch circuit is shorted.) Stop lamp switch	
B) sei	Brake pedal position switch signal is not sent to ECM for extremely long time while the vehicle is driving.	 Brake pedal position switch Incorrect stop lamp switch installation Incorrect brake pedal position switch installation ECM 			

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

NOTE:

Procedure for malfunction B is not described here. It takes extremely long time to complete procedure for malfunction B. By performing procedure for malfunction A, the incident that causes malfunction B can be detected.

>> GO TO 2.

2.perform dtc confirmation procedure for malfunction a

- 1. Start engine.
- 2. Press MAIN switch and make sure that CRUISE indicator is displayed in combination meter.
- 3. Drive the vehicle for at least 5 consecutive seconds as per the following conditions.

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

Vehicle speed	More than 30 km/h (19 mph)
Selector lever	Suitable position

4. Check DTC.

Is DTC detected?

YES >> Proceed to <u>EC-1110</u>, "<u>Diagnosis Procedure</u>".

NO >> GO TO 3.

Revision: 2014 October EC-1105 2015 JUKE

EC

Α

D

Е

G

F

J

K

L

[\/

N

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

3.perform dtc confirmation procedure for malfunction b

1. Drive the vehicle for at least 5 consecutive seconds as per the following conditions.

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

Vehicle speed	More than 30 km/h (19 mph)
Selector lever	Suitable position
Driving location	Depress the brake pedal for more than five seconds so as not to come off from the above-mentioned vehicle speed.

2. Check DTC.

Is DTC detected?

YES >> Proceed to <u>EC-1110</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611143

1. CHECK OVERALL FUNCTION-I

(P)With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "BRAKE SW1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "BRAKE SW1" indication as per the following conditions.

Monitor item	Condition		Indication
BRAKE SW1	Brake podal	Slightly depressed	OFF
DIVAILE SWI	Brake pedal	Fully released	ON

Without CONSULT

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector terminals as per the following.

ECM				\/alta		
Connector	Connector + -		Condition		Voltage (Approx.)	
Connector	Terr	ninal			,	
E19	140	152	Brako podal	Slightly depressed	0 V	
	140	152	Brake pedal	Fully released	Battery voltage	

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK OVERALL FUNCTION-II

(P)With CONSULT

Select "BRAKE SW2" and check indication as per the following conditions.

Monitor item	Condition		Indication		
BRAKE SW2	Brake nedal	Slightly depressed ON			
DIVAIL OWE	Brake pedal	Fully released	OFF		

Check the voltage between ECM harness connector terminals as per the following conditions.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Voltage Approx.)
tery voltage
0 V
Incident"
-

- Turn ignition switch OFF.
- 2. Disconnect brake pedal position switch harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between brake pedal position switch harness connector and ground.

+	•			
Brake pedal p	osition switch	_	Voltage	
Connector Terminal				
E112	1	Ground	Battery voltage	

Is the inspection result normal?

YES >> GO TO 4.

NO >> Perform the trouble diagnosis for power supply circuit.

f 4.CHECK BRAKE PEDAL POSITION SWITCH INPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between brake pedal position switch harness connector and ECM harness connec-

+		-		
Brake pedal pe	osition switch	ECM		Continuity
Connector	Terminal	Connector	Terminal	
E112	2	E19	140	Existed

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.CHECK BRAKE PEDAL POSITION SWITCH

Check the brake pedal position switch. Refer to EC-1108, "Component Inspection (Brake Pedal Position Switch)".

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace brake pedal position switch. Refer to <u>BR-20</u>, "Exploded View".

O.CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect stop lamp switch harness connector.
- Check the voltage between stop lamp switch harness connector and ground.

EC-1107 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

K

Ν

Stop lam	p switch	_	Voltage	
Connector	Terminal			
E102 ^{*1} E118 ^{*2}	1	Ground	Battery voltage	

^{*1:} CVT models

Is the inspection result normal?

YES >> GO TO 7.

NO >> Perform the trouble diagnosis for power supply circuit.

7.CHECK STOP LAMP SWITCH INPUT SIGNAL CIRCUIT

- Disconnect ECM harness connector.
- Check the continuity between stop lamp switch harness connector and ECM harness connector.

+		-		
Stop lam	p switch	ECM		Continuity
Connector	Terminal	Connector	Terminal	
E102 ^{*1} E118 ^{*2}	2	E19	139	Existed

^{*1:} CVT models

3. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

8.CHECK STOP LAMP SWITCH

Check the stop lamp switch. Refer to EC-1109, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace stop lamp switch. Refer to BR-20, "Exploded View".

Component Inspection (Brake Pedal Position Switch)

INFOID:0000000011611144

1. CHECK BRAKE PEDAL POSITION SWITCH-I

- Turn ignition switch OFF.
- 2. Disconnect brake pedal position harness connector.
- 3. Check the continuity between brake pedal position switch terminals as per the following conditions.

Brake pedal	position switch	Condition		
+	-			Continuity
Tern	ninals			
			Fully released	Existed
1	2	Brake pedal	Slightly de- pressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. CHECK BRAKE PEDAL POSITION SWITCH-II

^{*2:} M/T models

^{*2:} M/T models

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Adjust brake pedal position switch installation. Refer to BR-9, "Inspection and Adjustment".
- Check the continuity between brake pedal position switch terminals as per the following conditions.

Brake pedal p	position switch	Condition		
+	-			Continuity
Term	ninals			
			Fully released	Existed
1	2	Brake pedal	Slightly de- pressed	Not existed

EC

Α

D

Е

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace brake pedal position switch. Refer to BR-20, "Exploded View".

Component Inspection (Stop Lamp Switch)

INFOID:0000000011611145

1.CHECK STOP LAMP SWITCH-I

- Turn ignition switch OFF.
- 2. Disconnect stop lamp switch harness connector.
- Check the continuity between stop lamp switch terminals as per the following conditions.

Stop lar	np switch	Condition		
+	-			Continuity
Tern	ninals			
			Fully released	Not existed
1	2	Brake pedal	Slightly de- pressed	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK STOP LAMP SWITCH-II

- Adjust stop lamp switch installation. Refer to BR-9, "Inspection and Adjustment".
- Check the continuity between stop lamp switch terminals as per the following conditions.

Stop lan	np switch	Condition		
+	-			Continuity
Term	ninals			
			Fully released	Not existed
1	2	Brake pedal	Slightly de- pressed	Existed

Ν

Is the inspection result normal?

YES >> INSPECTION END

>> Replace stop lamp switch. Refer to BR-20, "Exploded View". NO

P1574 ASCD VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

INFOID:0000000011611148

P1574 ASCD VEHICLE SPEED SENSOR

Description INFOID:0000000011611146

The ECM receives two vehicle speed sensor signals via CAN communication line. One is sent from combination meter, and the other is from TCM (Transmission control module). The ECM uses these signals for ASCD control. Refer to EC-642, "AUTOMATIC SPEED CONTROL DEVICE (ASCD): System Description" for ASCD functions.

DTC Logic (INFOID:0000000011611147)

DTC DETECTION LOGIC

NOTE:

- If DTC P1574 is displayed with DTC U1001, first perform the trouble diagnosis for DTC U1001. Refer to <u>EC-783</u>, "DTC Logic".
- If DTC P1574 is displayed with DTC P0500, first perform the trouble diagnosis for DTC P0500. Refer to <u>EC-1018</u>, "EXCEPT FOR M/T MODELS: <u>DTC Logic"</u>
- If DTC P1574 is displayed with DTC P0605, first perform the trouble diagnosis for DTC P0605. Refer to <u>EC-1049</u>, "<u>DTC Logic"</u>
- If DTC P1574 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to <u>EC-1051</u>, "<u>DTC Logic"</u>.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1574	ASCD VHL SPD SEN (ASCD vehicle speed sensor)	ECM detects a difference between two vehicle speed signals is out of the specified range.	Harness or connectors (CAN communication line is open or shorted.) ABS actuator and electric unit (control unit) TCM ECM

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine.
- 2. Drive the vehicle at more than 40 km/h (25 MPH).

CAUTION:

Always drive vehicle at a safe speed.

NOTÉ:

This procedure may be conducted with the drive wheels lifted in the shop or by driving the vehicle. If a road test is expected to be easier, it is unnecessary to lift the vehicle.

3. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1110, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK DTC WITH TCM

Check DTC with TCM. Refer to TM-394, "CONSULT Function".

Check DTC with TCM. Refer to <u>TM-394, CONSULT Function</u>

Revision: 2014 October EC-1110 2015 JUKE

P1574 ASCD VEHICLE SPEED SENSOR

< DTC	/CIRCUIT DIAGNOSIS > [MR EXCEPT FOR NISMO RS MODEL	.S]
	detected?	
NO	>> GO TO 2.	Α
YES	>> Perform trouble shooting relevant to DTC indicated.	
2. CHE	ECK DTC WITH "ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)"	EC
Check	DTC with ABS actuator and electric unit (control unit). Refer to BRC-39, "CONSULT Function".	
	detected?	
NO	>> INSPECTION END	С
YES	>> Perform trouble shooting relevant to DTC indicated.	
		Б
		D
		Е
		_
		F
		G
		Н
		1
		J
		K
		L
		M
		1 V I
		N
		0
		O

Revision: 2014 October EC-1111 2015 JUKE

P158A G SENSOR

DTC Logic INFOID:0000000011611149

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause*
P158A	G SENSOR (G sensor calibration is incomplete)	ECM detects a state that calibration of the G sensor is incomplete.	G sensor calibration is incomplete

^{*:} Since this DTC is detected when G sensor calibration is incomplete, there is not replacement parts.

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
 Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- 2. Check DTC.

Is DTC detected?

>> Proceed to EC-1112, "Diagnosis Procedure". YES

>> INSPECTION END NO

Diagnosis Procedure

INFOID:0000000011611150

1. PERFORM CALIBRATION OF G SENSOR

Perform calibration of G sensor. Refer to EC-748, "Work Procedure".

>> INSPECTION END

P159B G SENSOR

DTC Logic

Α

EC

D

Е

Н

Ν

Р

INFOID:0000000011667902

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P159B	G SENSOR (G sensor circuit range/perfor- mance)	Every time when the vehicle is stopped, ECM detects the following status 13 times in a row: A voltage signal transmitted from the G sensor is less than 2.275V or more than 2.725 V continuously for 5 seconds or more.	Harness or connectors (G sensor circuit is open or shorted.) (Intake air temperature sensor 2 circuit is open or shorted.) G sensor Sensor power supply 2

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine.
- 2. Drive the vehicle for at least 5 seconds at 35 km/h (22 MPH) or more.
- 3. Stop the vehicle and let it idle for at least 5 seconds.

NOTE:

- Depress the brake pedal to bring the vehicle to a full stop.
- Never depress the accelerator pedal while the vehicle is stopped.
- 4. Repeat Step 2 and Step 3 thirteen times.
- 5. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1113, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. PERFORM CALIBRATION OF G SENSOR

Perform calibration of G sensor. Refer to EC-748, "Work Procedure".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

Perform DTC Confirmation Procedure. Refer to EC-1113, "DTC Logic".

Is 1st trip DTC detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK G SENSOR FITTING CONDITION

Check G sensor fitting condition.

Is the inspection result normal?

YES >> GO TO 4.

P159B G SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> 1. Adjust parts fitting condition.

2. Perform calibration of G sensor. Refer to EC-748, "Work Procedure".

4.CHECK G SENSOR POWER SUPPLY CIRCUIT-I

1. Turn ignition switch OFF.

- 2. Disconnect G sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between G sensor harness connector terminals.

	V 16		
Connector	+	_	Voltage (Approx.)
Connector	Terr	, , ,	
B32	3	2	5 V

Is the inspection result normal?

YES >> GO TO 5. NO >> GO TO 7.

CHECK G SENSOR SIGNAL CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between G sensor harness connector and ECM harness connector.

G se	G sensor ECM		ECM	
Connector	Terminal	Connector Terminal		Continuity
B32	1	F23	34	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK G SENSOR

Check G sensor. Refer to EC-1115, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> 1. Replace G sensor.

2. Perform calibration of G sensor. Refer to EC-748, "Work Procedure".

7. CHECK G SENSOR POWER SUPPLY CIRCUIT-II

Check the voltage between G sensor harness connector terminal and ground.

	+		
G sensor		_	Voltage (Approx.)
Connector	Terminal		,
B32	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 8. NO >> GO TO 10.

8.CHECK G SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between G sensor harness connector and ECM harness connector.

Α

EC

D

Е

K

L

M

INFOID:0000000011667903

< DTC/CIRCUIT DIAGNOSIS >

G se	ensor	ECM Connector Terminal		Continuity
Connector	Terminal			Continuity
B32	2	F23	13	Existed

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

9. CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

E	СМ	Ground	Continuity
Connector	Terminal	Giodila	
F23	9	Ground	Existed
	10		
	50		
F24	60		
	110		
E19	147		
	149		
	152		

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

10.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

Component Inspection

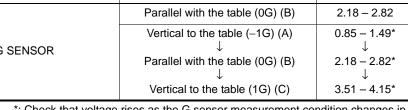
1.CHECK G SENSOR

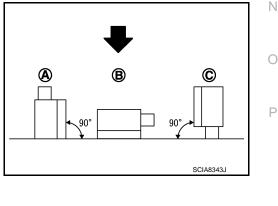
(P)With CONSULT

- Remove G sensor.
- Reconnect all harness connectors disconnected.
- 3. Place the G sensor on a flat table.
- Turn ignition switch ON.
- Select "G SENSOR" in "DATA MONITOR" mode of "ENGINE" using CONSULT to check indications according to the following conditions:

: Direction of gravitational force

Monitor item	Condition	Value (V)
	Parallel with the table (0G) (B)	2.18 – 2.82
G SENSOR	Vertical to the table (−1G) (A) ↓ Parallel with the table (0G) (B) ↓ Vertical to the table (1G) (C)	0.85 – 1.49* ↓ 2.18 – 2.82* ↓ 3.51 – 4.15*





*: Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

EC-1115 Revision: 2014 October 2015 JUKE

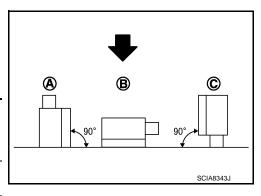
P159B G SENSOR

< DTC/CIRCUIT DIAGNOSIS >

®Without CONSULT

- 1. Remove G sensor.
- Reconnect all harness connectors disconnected.
- 3. Place the G sensor on a flat table.
- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminal and ground.
 - : Direction of gravitational force

+ ECM		_	Condition	Voltage (V)
Connector	Terminal			
			Parallel with the table (0G) (B)	2.18 – 2.82
F23	34	Ground	Vertical to the table (-1G) (A) Vertical to the table (-1G) Parallel with the table (0G) (B) Vertical to the table (1G) (C)	0.85 - 1.49* ↓ 2.18 - 2.82* ↓ 3.51 - 4.15*



*: Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace G sensor.

P159C, P159D G SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

INFOID:0000000011611152

Ν

P159C, P159D G SENSOR

DTC Logic INFOID:0000000011611151

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis (Trouble diagnosis content)	DTC detecting condition	Possible cause	С
P159A	G SENSOR (G sensor circuit)	When ECM detects the following status: A voltage signal transmitted from the G sensor is less than 0.5 V or more than 5.02 V continuously for 5 seconds or more.		D
P159C	G SENSOR (G sensor circuit low input)	When ECM detects the following status: A voltage signal transmitted from the G sensor is less than 0.5 V continuously for 5 seconds or more.	 Harness or connectors (G sensor circuit is open or shorted.) G sensor Sensor power supply 2 circuit 	Е
P159D	G SENSOR (G sensor circuit high input)	When ECM detects the following status: A voltage signal transmitted from the G sensor is more than 4.5 V continuously for 5 seconds or more.		F

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start engine and let it idle for at least 5 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1117, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK G SENSOR POWER SUPPLY CIRCUIT-I

- 1. Turn ignition switch OFF.
- Disconnect G sensor harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between G sensor harness connector terminals.

Connector	+	_	Voltage (Approx.)
Connector	Terr	minal	(11 - 7
B32	3	2	5 V

Is the inspection result normal?

YES >> GO TO 2. NO >> GO TO 4.

P159C, P159D G SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2.check g sensor signal circuit

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between G sensor harness connector and ECM harness connector.

+		-		
G se	ensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
B32	1	F23	34	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK G SENSOR

Check G sensor. Refer to EC-1119, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> 1. Replace G sensor.

2. Perform calibration of G sensor. Refer to EC-748, "Work Procedure".

4. CHECK G SENSOR POWER SUPPLY CIRCUIT-II

Check the voltage between G sensor harness connector terminal and ground.

	+		Maltana	
G sensor		_	Voltage (Approx.)	
Connector	Terminal		(11 - /	
B32	3	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 7.

5. CHECK G SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between G sensor harness connector and ECM harness connector.

+		_		
G se	ensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
B32	3	F23	29	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

Α

EC

D

Е

F

M

Ν

Р

INFOID:0000000011611153

< DTC/CIRCUIT DIAGNOSIS >

Е	ECM		Continuity
Connector	Terminal	Ground	Continuity
	9		
F23	10		Existed
	50		
F24	60	Ground	
Γ24	110	Giouna	
E19	147		
	149		
	152		

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

Component Inspection

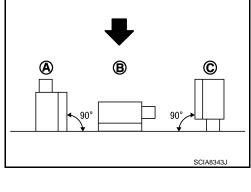
1. CHECK G SENSOR

With CONSULT

- Remove G sensor.
- Reconnect all harness connectors disconnected.
- Place the G sensor on a flat table.
- 4. Turn ignition switch ON.
- 5. Select "G SENSOR" in "DATA MONITOR" mode of "ENGINE" using CONSULT to check indications according to the following conditions:

: Direction of gravitational force

Monitor item	Condition	Value (V)
G SENSOR	Parallel with the table (0G) (B)	2.18 – 2.82
	Vertical to the table (−1G) (A) ↓ Parallel with the table (0G) (B)	0.85 – 1.49* ↓ 2.18 – 2.82*
	Vertical to the table (1G) (C)	↓ 3.51 – 4.15*



^{*:} Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

- Remove G sensor.
- Reconnect all harness connectors disconnected.
- Place the G sensor on a flat table.
- Turn ignition switch ON.

P159C, P159D G SENSOR

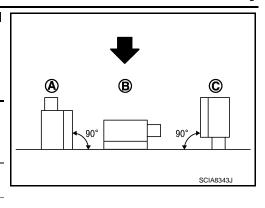
< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

5. Check the voltage between ECM harness connector terminal and ground.

: Direction of gravitational force

+ ECM		_	Condition	Voltage (V)
Connector	Terminal			
			Parallel with the table (0G) (B)	2.18 – 2.82
F23	34	Ground	Vertical to the table (-1G) (A) ↓ Parallel with the table (0G) (B) ↓ Vertical to the table (1G) (C)	0.85 - 1.49* ↓ 2.18 - 2.82* ↓ 3.51 - 4.15*



*: Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace G sensor.

P1805 BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P1805 BRAKE SWITCH

DTC Logic INFOID:0000000011611178

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P1805	BRAKE SW/CIRCUIT (Brake switch)	A stop lamp switch signal is not sent to ECM for extremely long time while the vehicle is driving.	Harness or connectors (Stop lamp switch circuit is open or shorted.) Stop lamp switch

DTC CONFIRMATION PROCEDURE

1. PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON.
- Fully depress the brake pedal for at least 5 seconds.
- Erase the DTC.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1121, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK STOP LAMP SWITCH POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect stop lamp switch harness connector.
- Check the voltage between stop lamp switch harness connector and ground.

+ Stop lamp switch		_	Voltage
Connector Terminal			
E102 ^{*1} E118 ^{*2}	1	Ground	Battery voltage

^{*1:} CVT models

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK STOP LAMP SWITCH INPUT SIGNAL CIRCUIT

Disconnect ECM harness connector.

Check the continuity between stop lamp switch harness connector and ECM harness connector.

+		-	_	
Stop lamp switch		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E102 ^{*1} E118 ^{*2}	2	E19	139	Existed

^{*1:} CVT models

EC-1121 Revision: 2014 October 2015 JUKE

EC

Α

Е

D

F

INFOID:0000000011611179

Ν

^{*2:} M/T models

^{*2:} M/T models

Also check harness for short to ground and to power.

P1805 BRAKE SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. CHECK STOP LAMP SWITCH

Check the stop lamp switch. Refer to EC-1122, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace stop lamp switch. Refer to <u>BR-20, "Exploded View"</u>.

Component Inspection (Stop Lamp Switch)

INFOID:0000000011611180

1. CHECK STOP LAMP SWITCH-I

- 1. Turn ignition switch OFF.
- 2. Disconnect stop lamp switch harness connector.
- 3. Check the continuity between stop lamp switch terminals as per the following conditions.

Stop lamp switch				
+	-	Condition		Continuity
Term	ninals			
			Fully released	Not existed
1	2	Brake pedal	Slightly de- pressed	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. CHECK STOP LAMP SWITCH-II

- 1. Adjust stop lamp switch installation. Refer to BR-9, "Inspection and Adjustment".
- 2. Check the continuity between stop lamp switch terminals as per the following conditions.

Stop lan	np switch			
+	-	Condition		Continuity
Term	ninals			
			Fully released	Not existed
1	2	Brake pedal	Slightly de- pressed	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch. Refer to <u>BR-20, "Exploded View"</u>.

P2004 INTAKE MANIFOLD RUNNER CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

stuck

P2004 INTAKE MANIFOLD RUNNER CONTROL VALVE

normal range.

DTC Logic INFOID:0000000011668527

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause	(
P2004	TUMBLE CONT/V (Intake manifold runner control stuck open bank 1)	The target angle of intake manifold runner control valve controlled by ECM and the input signal from intake manifold runner control valve position sensor is not in the	Harness or connectors (Intake manifold runner control valve circuit is open or shorted.) Intake manifold runner control valve Intake manifold runner control valve is	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.
- Always perform the test at a temperature above –12°C (10°F)

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "DATA MONITOR" mode using CONSULT.
- 3. Make sure that "COOLANT TEMP/S" indicates 5°C (41°F) or more. If not, cool engine down or warm engine up until "COOLANT TEMP/S" indicates 5°C (41°F) or more. Then go to the following steps.
- 4. Fully release accelerator pedal and wait at least 10 seconds.
- 5. Depress accelerator pedal and wait at least 10 seconds.
- Check 1st trip DTC.

@With GST

Following the procedure "With CONSULT" above.

Is 1st trip DTC detected?

YES >> Proceed to EC-1123, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE POWER SUPPLY

- Turn ignition switch ON.
- Check the voltage between ECM harness connector.

	+	-		Voltage
Connector	Terminal	Connector	Terminal	
F23	53	E19	152	Battery voltage

Is the inspection result normal?

>> GO TO 3. YES NO >> GO TO 2.

2.CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE POWER SUPPLY CIRCUIT

EC-1123 Revision: 2014 October 2015 JUKE

EC

Α

Н

K

INFOID:0000000011668528

Ν

P2004 INTAKE MANIFOLD RUNNER CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Disconnect IPDM E/R harness connector.
- Check the continuity between ECM harness connector and IPDM E/R harness connector.

+		1		
E	СМ	IPDM E/R		Continuity
Connector	Terminal	Connector Terminal		
F23	53	E14	36	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE OUTPUT SIGNAL CIRCUIT

- Disconnect intake manifold runner control valve harness connector.
- Check the continuity between intake manifold runner control valve harness connector and ECM harness connector.

+			_	
Intake manifold runner control valve		ECM		Continuity
Connector	Terminal	Connector Terminal		
	2	1	54	Existed
F59			55	Not existed
			54	Not existed
			55	Existed

3. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE

Check the intake manifold runner control valve. Refer to <u>EC-1124</u>, "Component Inspection (Intake Manifold Runner Control Valve)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace intake manifold assembly. Refer to EM-196, "Removal and Installation".

Component Inspection (Intake Manifold Runner Control Valve)

INFOID:0000000011668529

1. CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE

(P) With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "DATA MONITOR" mode with CONSULT.
- 3. Make sure that "COOLAN TEMP/S" indicates between -12°C (10°F) to 59°C (138°F). If not, cool engine down or warm engine up until "COOLAN TEMP/S" indicates between -12°C (10°F) to 59°C (138°F). Then go to the following steps.
- Fully release accelerator pedal and make sure that "TUMBLE POS SEN" indicates between 2.8 V to 4.1 V.
- 5. Depress accelerator pedal and make sure that "TUMBLE POS SEN" indicates between 0.2 V to 1.4 V.
- 6. Check 1st trip DTC.

With GST

Following the procedure "With CONSULT" above.

P2004 INTAKE MANIFOLD RUNNER CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is 1st trip DTC detected?

YES >> Replace intake manifold assembly. Refer to EM-196, "Removal and Installation".

NO >> GO TO 2.

2.CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE

- 1. Turn ignition switch OFF.
- 2. Disconnect intake manifold runner control valve harness connector.
- 3. Check the resistance between intake manifold runner control valve terminals as per the following.

Intake manifold runner control valve		5
+ -		Resistance (Approx.)
Terminals		X 11 - 7
1	2	3 - 8 Ω [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace intake manifold assembly. Refer to EM-196, "Removal and Installation".

EC

Α

D

Е

F

Н

ı

J

Κ

L

M

Ν

0

P2014, P2016, P2017, P2018 INTAKE MANIFOLD RUNNER CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P2014, P2016, P2017, P2018 INTAKE MANIFOLD RUNNER CONTROL VALVE POSITION SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P2014, P2016, P2017 or P2018 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-1057, "DTC Logic".

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2014	IN/MANIFOLD RUNNER POS SEN B1 (Intake manifold runner position sensor/switch circuit bank 1)	An excessively low voltage from the sensor	
P2016	IN/MANIFOLD RUNNER POS SEN B1 (Intake manifold runner position sensor/switch circuit low bank 1)	is sent to ECM.	Harness or connectors (Intake manifold runner control position)
P2017	IN/MANIFOLD RUNNER POS SEN B1 (Intake manifold runner position sensor/switch circuit high bank 1)	An excessively high voltage from the sensor	sensor circuit is shorted.) Intake manifold runner control position sensor
P2018	IN/MANIFOLD RUNNER POS SEN B1 (Intake manifold runner position sensor/switch circuit intermittent bank 1)	is sent to ECM.	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to <u>EC-1126</u>, "<u>Diagnosis Procedure</u>".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011668531

1.CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE POSITION SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect intake valve manifold runner control valve position sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between intake valve manifold runner control valve position sensor harness connector.

P2014, P2016, P2017, P2018 INTAKE MANIFOLD RUNNER CONTROL VALVE **POSITION SENSOR**

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Intake manifold	Voltage					
Connector	Connector + -					
Connector	Terminal					
F73	1	5 V				

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.

2.check intake manifold runner control valve position sensor power supply cir-**CUIT**

Check the voltage between intake valve manifold runner control valve position sensor harness connector and ground.

	+		
Intake manifold runner control valve position sensor		-	Voltage (Approx.)
Connector Terminal			
F73	1	Ground	5 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Perform the trouble diagnosis for power supply circuit.

3.CHECK ECM GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between ECM harness connector and ground.

	+			
E	CM	-	Continuity	
Connector	Connector Terminal			
	9			
F23	10	Ground	Existed	
	50			
F24	60			
Γ24	110	Giouna		
E19	147			
	149			
	152			

Also check harness for short to power.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

f 4.CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between intake manifold runner control valve position sensor harness connector and ECM harness connector.

EC-1127 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

Ν

P2014, P2016, P2017, P2018 INTAKE MANIFOLD RUNNER CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+		-		
	ld runner con- sition sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F73	3	F23	43	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.CHECK INTAKE MANIFOLD RUNNER CONTROL VALVE POSITION SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between intake manifold runner control valve position sensor harness connector and ECM harness connector.

+			-	
	old runner consition sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F73	2	F23	39	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK INTERMITTENT INCIDENT

Perform intermittent incident. Refer to GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace intake manifold assembly. Refer to EM-196, "Removal and Installation".

NO >> Repair or replace error-detected parts.

P2081 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P2081 EXHAUST GAS TEMPERATURE SENSOR

DTC Logic INFOID:0000000011611184

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2081	EXHAUST GAS TEMP SEN- SOR 1 B1 (Exhaust gas temperature sen- sor 1 circuit intermittent)	ECM detects that a voltage signal from exhaust gas temperature sensor is 4.84 V or more for 5 consecutive seconds.	Harness or connectors (Exhaust gas temperature sensor circuit is open.) Exhaust gas temperature sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING-1

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PRECONDITIONING-2

(P)With CONSULT

- Turn ignition switch ON.
- Select "COOLANT TEMP/S" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check the following conditions:

COOLANT TEMP/S More than -30°C (-22°F)	
--	--

Follow the procedure "With CONSULT" above.

Is the condition satisfied?

YES >> GO TO 4.

NO >> GO TO 3.

3.PRECONDITIONING- $_3$

(P)With CONSULT

Start the engine until the following condition is satisfied.

COOLANT TEMP/S More than -30°C (-22°F)
--

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

Follow the procedure "With CONSULT" above.

>> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Shift the selector lever to P range.
- 2. Start engine and let it idle for at least 20 seconds.
- Depress the accelerator pedal for 5 seconds or more.

NOTE:

EC-1129 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

N

P2081 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Do not release the accelerator pedal during DTC confirmation procedure.

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1130, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611185

1. CHECK EXHAUST GAS TEMPERATURE SENSOR

(P)With CONSULT

- Turn ignition switch ON.
- 2. Select "EXHAUST GAS TEMP SEN 1 B1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Start engine and warm it up to normal operating temperature.
- 4. Check that "EXHAUST GAS TEMP SEN 1 B1" indication as follows.

Monitor item	Condition	Value
EXHAUST GAS TEMP SEN 1 B1	Warm-up condition Idle speed	1,290 - 2,940 mV

- 1. Start engine and warm it up to normal operating temperature.
- 2. Check that voltage between ECM harness connector terminals as follows.

	ECM			Voltage
Connector	+	-	Condition	
Connector	Terminal			
F23	19	45	Warm-up condition Idle speed	1.29 – 2.94 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace exhaust gas temperature sensor. Refer to EM-241, "Exploded View".

2.CHECK EXHAUST GAS TEMPERATURE SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect exhaust gas temperature sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between exhaust gas temperature sensor harness connector terminal and ground.

	+			
Exhaust gas ten	nperature sensor	_	Voltage (Approx.)	
Connector Terminal			(11 - /	
F58	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 4.

NO >> GO 10 4.

3.check exhaust gas temperature sensor ground circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between exhaust gas temperature sensor harness connector and ECM harness connector.

P2081 EXHAUST GAS TEMPERATURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+			_	
Exhaust gas temperature sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F58	2	F23	45	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

4. CHECK EXHAUST GAS TEMPERATURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between exhaust gas temperature sensor harness connector and ECM harness connector.

+		-		
Exhaust gas temperature sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F58	1	F23	19	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for ECM power supply circuit. Refer to <u>EC-777, "Diagnosis Procedure"</u>.

NO >> Repair or replace error-detected parts.

EC

Α

Е

D

F

Н

J

Ν

0

P2096, P2097 A/F SENSOR 1

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P2096	POST CAT FUEL TRIM SYS B1 (Post catalyst fuel trim system too lean bank 1)	The output voltage computed by ECM from the A/F sensor 1 signal is shifts to the lean side for a specified period.	 A/F sensor 1 A/F sensor 1 heater Heated oxygen sensor 2 Fuel pressure
P2097	POST CAT FUEL TRIM SYS B1 (Post catalyst fuel trim system too rich bank 1)	The A/F signal computed by ECM from the A/F sensor 1 signal is shifts to the rich side for a specified period.	Fuel injectorIntake air leaksExhaust gas leaks

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Clear the mixture ratio self-learning value. Refer to EC-747, "Work Procedure".
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Turn ignition switch ON.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start engine and keep the engine speed between 3,500 and 4,000 rpm for 1 minute under no load.
- 6. Let engine idle for 1 minute.
- 7. Keep engine speed between 2,500 and 3,000 rpm for 20 minutes.
- 8. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1132, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667637

1. RETIGHTEN A/F SENSOR 1 AND HEATED OXYGEN SENSOR 2

Loosen and retighten the A/F sensor 1 and heated oxygen sensor 2. Refer to <u>EM-241, "Exploded View"</u> (A/F sensor 1), <u>EX-5, "Exploded View"</u> (Heated oxygen sensor 2).

>> GO TO 2.

2.CHECK FOR EXHAUST GAS LEAK

- Start engine and run it at idle.
- Listen for an exhaust gas leak before the three way catalyst (under floor).

Is exhaust gas leak detected?

YES >> Repair or replace.

NO >> GO TO 3.

P2096, P2097 A/F SENSOR 1

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

3.check for intake air leakage

Start engine and run it at idle.

Listen for an intake air leakage after the mass air flow sensor.

Is intake air leakage detected?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning part.

f 4.CLEAR THE MIXTURE RATIO SELF-LEARNING VALUE

- Clear the mixture ratio self-learning value. Refer to EC-747, "Work Procedure".
- Run engine for at least 10 minutes at idle speed.

Is the 1st trip DTC P0171 or P0172 detected? Is it difficult to start engine?

>> Perform trouble diagnosis for DTC P0171 or P0172. Refer to EC-890, "DTC Logic" (P0171) or EC-894, "DTC Logic" (P0172).

NO >> GO TO 5.

5.CHECK HARNESS CONNECTOR

- Turn ignition switch OFF.
- Disconnect A/F sensor 1 harness connector.
- Check harness connector for water.

Water should not exit.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace harness connector.

6.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY

- Disconnect A/F sensor 1 harness connector.
- 2. Turn ignition switch ON.
- Check the voltage between A/F sensor 1 harness connector and ground.

A/F s	ensor	Ground	Voltage (V)	
Connector Terminal		Giodila	voltage (v)	
F72	4	Ground	Battery voltage	

Is the inspection result normal?

>> GO TO 8. YES

NO >> GO TO 7.

.CHECK AIR FUEL RATIO (A/F) SENSOR 1 POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between A/F sensor 1 harness connector and IPDM E/R harness connector.

	A/F sensor 1		IPDM E/R		Continuity
_	Connector	Terminal	Connector	Terminal	Continuity
	F72	4	E14	36	Existed

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

>> Repair or replace error-detected parts. NO

8.CHECK A/F SENSOR 1 INPUT SIGNAL CIRCUIT FOR OPEN AND SHORT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between A/F sensor 1 harness connector and ECM harness connector.

EC

D

Е

N

EC-1133

Revision: 2014 October

A/F sensor 1		ECM		Continuity
Connector	Terminal	Connector	Terminal	Continuity
F72	1	F24	79	Existed
172	2	1 24	74	LXISIGU

4. Check the continuity between A/F sensor 1 harness connector and ground, or ECM harness connector and ground.

A/F sensor 1		Ground	Continuity	
Connector	Terminal	Giodila	Continuity	
F72	1	Ground	Not existed	
Γ/2	2	Giodila	Not existed	

ECM		Ground	Continuity	
Connector	Terminal	Giodila	Continuity	
F24	74	Ground	Not existed	
1 24	79	Giodila	inoi existed	

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair open circuit, short to ground or short to power in harness or connectors.

9. CHECK A/F SENSOR 1 HEATER

Check A/F sensor 1 heater. Refer to EC-791, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 10.

NO >> GO TO 12.

10.CHECK HEATED OXYGEN SENSOR $_{ m 2}$

Check heated oxygen sensor 2. Refer to EC-869, "Component Inspection".

Is the inspection result normal?

YES >> GO TO 11.

NO >> Replace malfunctioning heated oxygen sensor 2.

11. CHECK INTERMITTENT INCIDENT

Check intermittent incident. Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace malfunctioning part.

12.REPLACE AIR FUEL RATIO (A/F) SENSOR 1

Replace malfunctioning air fuel ratio (A/F) sensor 1. Refer to EM-241, "Exploded View".

Do you have CONSULT?

YES >> GO TO 13.

NO >> GO TO 14.

13. CONFIRM A/F ADJUSTMENT DATA

(I) With CONSULT

- 1. Turn ignition switch ON.
- 2. Select "A/F ADJ-B1" in "DATA MONITOR" mode with CONSULT.
- 3. Make sure that "0.000" is displayed on CONSULT screen.

Is "0.000" displayed?

YES >> INSPECTION END

P2096, P2097 A/F SENSOR 1					
< DTC/CIRCUIT DIAGNOSIS >	[MR EXCEPT FOR NISMO RS MODELS]				
NO >> GO TO 14.					
14.CLEAR THE MIXTURE RATIO SELF-LEARNING VALU	E				
Clear the mixture ratio self-learning value. Refer to EC-747, "	Work Procedure".				
Do you have CONSULT?					
YES >> GO TO 15.					
NO >> INSPECTION END					
15.CONFIRM A/F ADJUSTMENT DATA					

EC

Α

(I) With CONSULT

- Turn ignition switch ON.
- Select "A/F ADJ-B1" in "DATA MONITOR" mode with CONSULT.
- Make sure that "0.000" is displayed on CONSULT screen.

>> INSPECTION END

Е

D

F

Н

Κ

M

L

Ν

0

Ρ

P2100, P2103 THROTTLE CONTROL MOTOR RELAY

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P2100, P2103 THROTTLE CONTROL MOTOR RELAY

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2100	ETC MOT PWR-B1 (Throttle control motor relay circuit open)	ECM detects a voltage of power source for throttle control motor is excessively low.	Harness or connectors (Throttle control motor relay circuit is open) Throttle control motor relay
P2103	ETC MOT PWR (Throttle control motor relay circuit short)	ECM detect the throttle control motor relay is stuck ON.	Harness or connectors (Throttle control motor relay circuit is shorted) Throttle control motor relay

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V.

Witch DTC is detected?

P2100 >> GO TO 2.

P2103 >> GO TO 3.

2. PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P2100

- 1. Turn ignition switch ON and wait at least 2 seconds.
- 2. Start engine and let it idle for 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-1136, "Diagnosis Procedure".

NO >> INSPECTION END

3.PERFORM DTC CONFIRMATION PROCEDURE FOR DTC P2103

- 1. Turn ignition switch ON and wait at least 1 second.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1136, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611187

1. CHECK THROTTLE CONTROL MOTOR RELAY POWER SUPPLY

- 1. Turn ignition switch OFF.
- Check the voltage between ECM harness connector and ground.

+ -				
	Voltage			
Connector	Terminal	Connector	Terminal	
F24	97	E19	152	Battery voltage

P2100, P2103 THROTTLE CONTROL MOTOR RELAY

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.check throttle control motor relay power supply circuit

- Disconnect ECM harness connector.
- Disconnect IPDM E/R harness connector. 2.
- Check the continuity between ECM harness connector and IPDM E/R harness connector.

+				
E	CM	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F24	97	E15	60	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL

Check the voltage between ECM harness connector and ground as per the following conditions.

ECM					Valtage
Connector	+		-	Condition	Voltage (Approx.)
Connector	Terminal	Connector	Terminal		(, , , , , , , , , , , , , , , , , , ,
F24	118	E19	152	Ignition switch: OFF	0 V
1 24	110	L19	132	Ignition switch: ON	Battery voltage

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 4.

4.CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+				
E	СМ	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F24	118	E15	55	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Repair or replace error-detected parts.

EC-1137 Revision: 2014 October

EC

Α

D

Е

N

2015 JUKE

P2101 ELECTRIC THROTTLE CONTROL FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P2101 ELECTRIC THROTTLE CONTROL FUNCTION

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P2101 is displayed with DTC P2100, first perform the trouble diagnosis for DTC P2100. Refer to <u>EC-1136</u>, "<u>DTC Logic"</u>.
- If DTC P2101 is displayed with DTC P2119, first perform the trouble diagnosis for DTC P2119. Refer to EC-1143, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P2101	ETC FNCTN/CIRC-B1 (Electric throttle control performance)	Electric throttle control function does not operate properly.	Harness or connectors (Throttle control motor circuit is open or shorted) Electric throttle control actuator

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V when engine is running.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 2 seconds.
- 2. Start engine and let it idle for 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-1138, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611189

1. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL

Check the voltage between ECM harness connector terminals as per the following conditions.

ECM					Valtage	
Connector	+	Connector	_	Condition	Voltage (Approx.)	
	Terminal	Connector	Terminal		(11,1011)	
F24	118	E19	152	Ignition switch: OFF	0 V	
124	110	L19	132	Ignition switch: ON	Battery voltage	

Is the inspection result normal?

YES >> GO TO 4. NO >> GO TO 2.

2. CHECK THROTTLE CONTROL MOTOR RELAY INPUT SIGNAL CIRCUIT

1. Turn ignition switch OFF.

P2101 ELECTRIC THROTTLE CONTROL FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

- 2. Disconnect ECM harness connector.
- Disconnect IPDM E/R harness connector.
- 4. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+				
E	СМ	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F24	118	E15	55	Existed

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK THROTTLE CONTROL MOTOR RELAY POWER SUPPLY CIRCUIT

1. Check the continuity between ECM harness connector and IPDM E/R harness connector.

+				
E	СМ	IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F24	97	E15	60	Existed

2. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

4. CHECK THROTTLE CONTROL MOTOR OUTPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+			_		
Electric throttle control actuator		ECM		Continuity	
Connector	Terminal	Connector Terminal			
F29	2		120	Existed	
	2	F24	119	Not existed	
	1	1 24	120	Not existed	
	'		119	Existed	

5. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

- Remove the intake air duct. Refer to <u>EM-191</u>, "<u>Exploded View</u>".
- 2. Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Remove the foreign matter and clean the electric throttle control actuator inside, then perform throttle valve closed position learning. Refer to EC-739, "Work Procedure".

Revision: 2014 October EC-1139 2015 JUKE

P2101 ELECTRIC THROTTLE CONTROL FUNCTION

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

6. CHECK THROTTLE CONTROL MOTOR

Check the throttle control motor. Refer to EC-1140, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

Component Inspection

INFOID:0000000011611190

1. CHECK THROTTLE CONTROL MOTOR

- Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- 3. Check the resistance between electric throttle control actuator terminals as per the following.

Electric throttle	control actuator	
+ –		Resistance (Approx.)
Term	ninals	(+ + +)
2 1		1 - 15 Ω [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

P2118 THROTTLE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

(Throttle control motor circuit is shorted.)

Electric throttle control actuator

(Throttle control motor)

P2118 THROTTLE CONTROL MOTOR

DTC Logic INFOID:0000000011611191

DTC DETECTION LOGIC

DTC No.

P2118

DTC detecting condition	Possible cause	С
	Harness or connectors	

DTC CONFIRMATION PROCEDURE

ETC MOT-B1

circuit short)

Trouble diagnosis name

(Trouble diagnosis content)

(Throttle control motor

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

ECM detects short in both circuits between

ECM and throttle control motor.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 2 seconds.
- Start engine and let it idle for 5 seconds.
- Check DTC.

Is DTC detected?

YES >> Proceed to EC-1141, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK THROTTLE CONTROL MOTOR OUTPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+			_		
Electric throttle control actuator		ECM		Continuity	
Connector	Terminal	Connector Terminal			
F29	2		120	Existed	
	2	F24	119	Not existed	
	1	124	120	Not existed	
	'		119	Existed	

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

EC-1141 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

INFOID:0000000011611192

Ν

M

P2118 THROTTLE CONTROL MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2.CHECK THROTTLE CONTROL MOTOR

Check the throttle control motor. Refer to EC-1142, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

Component Inspection

INFOID:0000000011611193

1. CHECK THROTTLE CONTROL MOTOR

- Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- 3. Check the resistance between electric throttle control actuator terminals as per the following.

Electric throttle	control actuator	
+	_	Resistance (Approx.)
Term	ninals	(11 - /
2	1	1 - 15 Ω [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

DTC Logic

DTC DETECTION LOGIC

EC

Α

DTC No.	Trouble diagnosis name (Trouble diagnosis content)			Possible cause	
	ETC ACTR-B1	Α	Electric throttle control actuator does not function properly due to the return spring malfunction.		
P2119	(Electric throttle control actuator)	В	Throttle valve opening angle in fail-safe mode is not in specified range.	Electric throttle control actuator	
		С	ECM detect the throttle valve is stuck open.		

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

F

Н

N

D

Е

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.perform dtc confirmation procedure for malfunction a and b

- 1. Turn ignition switch ON and wait at least 1 second.
- 2. Set selector lever to D (CVT) or 1st (M/T) position and wait at least 3 seconds.
- 3. Set selector lever to P (CVT) or Neutral (M/T) position.
- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Turn ignition switch ON and wait at least 1 second.
- 6. Set selector lever to D (CVT) or 1st (M/T) position and wait at least 3 seconds.
- 7. Set selector lever to P (CVT) or Neutral (M/T) position.
- 8. Turn ignition switch OFF, wait at least 10 seconds and then turn ON.
- 9. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1143, "Diagnosis Procedure".

NO >> GO TO 3.

3.perform dtc confirmation procedure for malfunction c

- 1. Turn ignition switch ON and wait at least 1 second.
- 2. Set selector lever to D (CVT) or 1st (M/T) position and wait at least 3 seconds.
- 3. Set selector lever to P (CVT) or Neutral (M/T) position.
- 4. Start engine and let it idle for 3 seconds.
- 5. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1143, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611195

${f 1}$.CHECK ELECTRIC THROTTLE CONTROL ACTUATOR VISUALLY

1. Remove the intake air duct. Refer to <a>EM-191, "Exploded View".

P2119 ELECTRIC THROTTLE CONTROL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

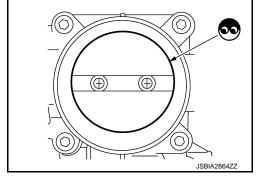
2. Check if foreign matter is caught between the throttle valve and the housing.

Is the inspection result normal?

dure".

YES >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

NO >> Remove the foreign matter and clean the electric throttle control actuator inside, then perform throttle valve closed position learning. Refer to EC-739, "Work Proce-



[MR EXCEPT FOR NISMO RS MODELS]

P2122, P2123 APP SENSOR

DTC Logic INFOID:0000000011611196

DTC DETECTION LOGIC

NOTE:

If DTC P2122 or P2123 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-1057, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2122	APP SEN 1/CIRC (Accelerator pedal position sensor 1 circuit low input)	An excessively low voltage from the APP sensor 1 is sent to ECM.	Harness or connectors (APP sensor 1 circuit is open or shorted.)
P2123	APP SEN 1/CIRC (Accelerator pedal position sensor 1 circuit high input)	An excessively high voltage from the APP sensor 1 is sent to ECM.	Accelerator pedal position sensor (APP sensor 1)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

>> Proceed to EC-1145, "Diagnosis Procedure". YES

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK APP SENSOR 1 POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect accelerator pedal position (APP) sensor harness connector.
- Turn ignition switch ON.
- Check the voltage between APP sensor harness connector and ground.

+ APP sensor		_	Voltage (Approx.)	
Connector	Terminal		(, , , , , , , , , , , , , , , , , , ,	
E101	4	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT

EC-1145 Revision: 2014 October 2015 JUKE

EC

Α

D

C

Е

F

Н

M

INFOID:0000000011611197

Ν

P2122, P2123 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between APP sensor harness connector and ECM harness connector.

+			_	
APP	sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
E101	4	E19	146	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK APP SENSOR 1 GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between APP sensor harness connector and ECM harness connector.

+		-		
APP	sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
E101	2	E19	151	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK APP SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between APP sensor harness connector and ECM harness connector.

+			_	
APP	sensor		ECM	
Connector	Terminal	Connector Terminal		
E101	3	E19	150	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5.CHECK APP SENSOR

Check the APP sensor. Refer to EC-1146, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace accelerator pedal assembly. Refer to ACC-3, "Exploded View".

Component Inspection

INFOID:0000000011611198

1. CHECK ACCELERATOR PEDAL POSITION SENSOR

- Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Turn ignition switch ON.
- 4. Check the voltage between ECM harness connector terminals as per the following condition.

P2122, P2123 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

ECM						
Connector	+	_	Condition		Voltage	
Connector	Terr	ninal				
	150	151		Fully released	0.6 - 0.9 V	
E19	130	131	Accelerator pedal	Fully depressed	3.9 - 4.7 V	
-	143	143 144		Fully released	0.3 - 0.6 V	
	143	144		Fully depressed	1.95 - 2.4 V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace accelerator pedal assembly. Refer to ACC-3, "Exploded View".

Α

EC

D

Е

F

G

Н

J

Κ

L

M

Ν

0

P2127, P2128 APP SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2127	APP SEN 2/CIRC (Accelerator pedal position sensor 2 circuit low input)	An excessively low voltage from the APP sensor 2 is sent to ECM.	Harness or connectors (APP sensor 2 circuit is open or shorted.) Accelerator pedal position sensor
P2128	APP SEN 2/CIRC (Accelerator pedal position sensor 2 circuit high input)	An excessively high voltage from the APP sensor 2 is sent to ECM.	(APP sensor 2) Sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1148, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611200

1. CHECK APP SENSOR 2 POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect accelerator pedal position (APP) sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between APP sensor harness connector and ground.

	+		Valta a	
APP :	sensor	_	Voltage (Approx.)	
Connector Terminal			, , ,	
E101	5	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2. CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

P2127, P2128 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Repair or replace error-detected parts.

3.check app sensor 2 ground circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between APP sensor harness connector and ECM harness connector.

+				
APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E101	1	E19	144	Existed

Also check harness for short to power.

Is the inspection result normal?

>> GO TO 4. YES

NO >> Repair or replace error-detected parts.

f 4.CHECK APP SENSOR 2 INPUT SIGNAL CIRCUIT

Check the continuity between APP sensor harness connector and ECM harness connector.

+				
APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E101	6	E19	143	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

CHECK APP SENSOR

Check the APP sensor. Refer to EC-1149, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace accelerator pedal assembly. Refer to ACC-3, "Exploded View". NO

Component Inspection

1. CHECK ACCELERATOR PEDAL POSITION SENSOR

- Turn ignition switch OFF.
- Reconnect all harness connectors disconnected. 2.
- Turn ignition switch ON.
- Check the voltage between ECM harness connector terminals as per the following condition.

ECM					
Connector	+	-	Condition		Voltage
Terminal					
	150 151	151	- Accelerator pedal	Fully released	0.6 - 0.9 V
E19	130	, 131		Fully depressed	3.9 - 4.7 V
EIB	143	444		Fully released	0.3 - 0.6 V
	143	144		Fully depressed	1.95 - 2.4 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace accelerator pedal assembly. Refer to ACC-3, "Exploded View".

EC-1149 Revision: 2014 October 2015 JUKE

EC

Α

Е

INFOID:0000000011611201

N

P2135 TP SENSOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P2135 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to <u>EC-1057</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)		Possible cause
P2135	TP SENSOR-B1 (Throttle position sensor circuit range/perfor- mance)	Rationally incorrect voltage is sent to ECM compared with the signals from TP sensor 1 and TP sensor 2.	Harness or connector (TP sensor 1 or 2 circuit is open or shorted.) Electric throttle control actuator (TP sensor 1 or 2)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1150, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611203

1. CHECK THROTTLE POSITION SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect electric throttle control actuator harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between electric throttle control actuator harness connector and ground.

	+			
Electric throttle	control actuator	_	Voltage (Approx.)	
Connector	Terminal		, , ,	
F29	5	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.check throttle position sensor power supply circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ground.

	+		_	
Electric throttle control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	5	F24	83	Existed

Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

>> Repair or replace error-detected parts. NO

${f 3.}$ CHECK THROTTLE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

+			_	
Electric throttle control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	4	F24	85	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

>> Repair or replace error-detected parts. NO

f 4.CHECK THROTTLE POSITION SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between electric throttle control actuator harness connector and ECM harness connector.

	+		_	
	le control actu- tor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F29	6	F24	88	Existed
1 29	3	1 24	80	LAISIEU

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair open circuit or short to ground or short to power in harness or connectors.

${f 5.}$ CHECK THROTTLE POSITION SENSOR

Check the throttle position sensor. Refer to EC-1151, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace electric throttle control actuator. Refer to EM-196, "Exploded View". NO

Component Inspection

${f 1}$.CHECK THROTTLE POSITION SENSOR

- 1. Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.

EC-1151 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

K

N

Р

INFOID:0000000011611204

P2135 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Perform "Throttle Valve Closed Position Learning". Refer to <u>EC-739, "Work Procedure".</u>
- 4. Turn ignition switch ON.
- 5. Set selector lever to D (CVT) or 1st (M/T) position.
- 6. Check the voltage between ECM harness connector terminals as per the following conditions.

ECM						
Connector	+	_	Condition		Voltage	
Connector	Terr	minal				
	88		Accelerator	Fully released	More than 0.36V	
F24				Fully depressed	Less than 4.75V	
F2 4	90		pedal	Fully released	Less than 4.75V	
	80			Fully depressed	More than 0.36V	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace electric throttle control actuator. Refer to EM-196, "Exploded View".

[MR EXCEPT FOR NISMO RS MODELS]

P2138 APP SENSOR

DTC Logic INFOID:0000000011611205

DTC DETECTION LOGIC

NOTE:

If DTC P2138 is displayed with DTC P0643, first perform the trouble diagnosis for DTC P0643. Refer to EC-1057, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2138	APP SENSOR (Accelerator pedal position sensor circuit range/ performance)	Rationally incorrect voltage is sent to ECM compared with the signals from APP sensor 1 and APP sensor 2.	Harness or connector (APP sensor 1 or 2 circuit is open or shorted.) Accelerator pedal position sensor (APP sensor 1 or 2) Sensor power supply 2 circuit

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 8 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start engine and let it idle for 1 second.
- 2. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1153, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1. CHECK APP SENSOR 1 POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect accelerator pedal position (APP) sensor harness connector.
- Turn ignition switch ON.
- Check the voltage between APP sensor harness connector and ground.

	+		Valtage	
APP	sensor	_	Voltage (Approx.)	
Connector Terminal			, , ,	
E101	4	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT

Turn ignition switch OFF.

EC-1153 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

INFOID:0000000011611206

M

Ν

P2138 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 2. Disconnect ECM harness connector.
- Check the continuity between APP sensor harness connector and ECM harness connector.

+		_		
APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E101	4	E19	146	Existed

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK APP SENSOR 2 POWER SUPPLY

Check the voltage between APP sensor harness connector and ground.

	+		Voltage (Approx.)	
APP	sensor	_		
Connector	Connector Terminal		, , ,	
E101	5	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 4.

4.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 5.}$ CHECK APP SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between APP sensor harness connector and ECM harness connector.

+		-		
APP sensor		ECM		Continuity
Connector	Terminal	Connector	Terminal	
E101	1	E19	144	Existed
	2	L19	151	LXISIEU

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

$oldsymbol{6}.$ CHECK APP SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between APP sensor harness connector and ECM harness connector.

P2138 APP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+		_		
APP sensor		ECM		Continuity
Connector	Terminal	Connector Terminal		
E101	3	E19	150	Existed
L101	6	L19	143	LAISIEU

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts

.CHECK APP SENSOR

Check the APP sensor. Refer to EC-1149, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace accelerator pedal assembly. Refer to EM-196, "Exploded View".

Component Inspection

INFOID:0000000011611207

Α

EC

D

Е

F

Н

1.CHECK ACCELERATOR PEDAL POSITION SENSOR

- Turn ignition switch OFF.
- 2. Reconnect all harness connectors disconnected.
- 3. Turn ignition switch ON.
- 4. Check the voltage between ECM harness connector terminals as per the following condition.

ECM					
Connector	+	_	Condition		Voltage
Connector	Terminal				
	150 151	- Accelerator pedal -	Fully released	0.6 - 0.9 V	
E19			Fully depressed	3.9 - 4.7 V	
E19	143	144		Fully released	0.3 - 0.6 V
	143	143 144		Fully depressed	1.95 - 2.4 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace accelerator pedal assembly. Refer to EM-196, "Exploded View".

M

Ν

P2162 VEHICLE SPEED SENSOR

Description INFOID:000000011667904

ECM receives a rear wheel sensor signal from ABS actuator and electric unit (control unit) via CAN communication to switch combustion for the direct injection gasoline system. For the direct injection gasoline system, refer to EC-619, "DIRECT INJECTION GASOLINE SYSTEM: System Description".

DTC Logic

DTC DETECTION LOGIC

NOTE:

- If DTC P2162 is displayed with DTC UXXXX, first perform the trouble diagnosis for DTC UXXXX. Refer to EC-694, "DTC Index".
- If DTC P2162 is displayed with DTC P0607, first perform the trouble diagnosis for DTC P0607. Refer to EC-1051, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2162	VEHICLE SPEED SEN A/B (Vehicle speed sensor A/B correlation)	ECM detects a rear LH wheel sensor signal or a rear RH wheel sensor signal transmitted from the ABS actuator and electric unit (control unit) via CAN communication at least for 15 seconds in a row when the vehicle is in stopped condition.	Harness or connectors (The CAN communication line is open or shorted) Rear LH wheel sensor Rear RH wheel sensor ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 9 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

Start engine and let it idle for at least 30 seconds.

NOTE:

Never depress the accelerator pedal during idle running.

2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1156, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011667906

1. CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

With CONSULT

Check DTC with ABS actuator and electric unit (control unit). Refer to <u>BRC-39, "CONSULT Function"</u>.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform diagnosis procedure corresponding to DTC indicated.

2.CHECK REAR WHEEL SENSOR-I

P2162 VEHICLE SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

(P)With CONSULT

- 1. Stop the vehicle.
- Set the parking brake.
- Use CONSULT to select "RR LH SENSOR" and "RR RH SENSOR" in "DATA MONITOR" mode of "ABS"
- 4. Check indications of "RR LH SENSOR" and "RR RH SENSOR".

NOTE:

Never cause the vehicle to vibrate.

Is 0 km/h (0 MPH) indicated for both "RR LH SENSOR" and "RR RH SENSOR"?

YES >> GO TO 3.

NO >> Perform trouble diagnosis of the rear wheel sensor if 0 km/h (0 MPH) is not displayed. Refer to BRC-81, "Diagnosis Procedure".

3.CHECK REAR WHEEL SENSOR-II

(P)With CONSULT

1. Drive the vehicle at 20 km/h (13 MPH).

CAUTION:

Always drive vehicle at a safe speed.

Check indications of "RR LH SENSOR" and "RR RH SENSOR".

Is the difference between the indicated values of "RR LH SENSOR" and "RR RH SENSOR" within \pm 1 km/h (1 MPH)?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Perform trouble diagnosis of the rear wheel sensor. Refer to BRC-81, "Diagnosis Procedure" EC

Α

D

Е

F

Н

K

L

Ν

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P2263 is displayed with DTC P0237 or P0238, first perform the trouble diagnosis for DTC P0237 or P0238. Refer to <u>EC-923</u>, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2263	TC SYSTEM-B1 (Turbocharger boost system performance)	In spite of the boosting area, the boost does not increase.	Intake air leaks Exhaust gas leaks Turbocharger boost sensor Turbocharger boost control solenoid valve Exhaust manifold and turbocharger assembly Electric wastegate control actuator Harness or connectors (Electric wastegate control actuator circuit is open or shorted.) Turbocharger bypass control valve Harness or connectors (Turbocharger bypass control valve circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

1. PERFORM COMPONENT FUNCTION CHECK

Perform component function check. Refer to EC-1158, "Component Function Check".

NOTE:

Use component function check to check the overall function of the turbocharger system circuit. During this check, a 1st trip DTC might not be confirmed.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1159, "Diagnosis Procedure".

Component Function Check

INFOID:0000000011667908

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2.check electric wastegate control actuator

(P)With CONSULT

- Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "ACTIVE TEST" >> "WASTEGATE ACTUATOR".
- 3. Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.002 m, and make a quick short note of value "V1" of "W/G ACTUATOR POSI SEN B1".
- 4. Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.006 m, and make a quick short note of value "V2" of "W/G ACTUATOR POSI SEN B1".

<u>Do the values of "V1" and "V2" change (visually, ACTUATOR SHAFT operates) and "V2" minus "V1" becomes equal to or more than 1.3V?</u>

YES >> INSPECTION END

NO >> Refer to EC-1159, "Diagnosis Procedure".

3. CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Turn ignition switch OFF.
- Disconnect Wastegate control actuator harness connector.
- 3. While checking the POSITION SENSOR OUT voltage with an oscilloscope, apply a voltage of 12 V to the positive or negative terminal.

Does ACTUATOR SHAFT visually operate and POSITION SENSOR OUT voltage change?

YES >> INSPECTION END

NO >> Refer to EC-1159, "Diagnosis Procedure".

Diagnosis Procedure

1. CHECK FOR EXHAUST GAS LEAK

- Start engine and run it at idle.
- Listen for an exhaust gas leak of exhaust manifold.

Is exhaust gas leak detected?

YES >> Repair or replace malfunction parts.

NO >> GO TO 2.

2.CHECK FOR INTAKE AIR LEAK

Listen for an intake air leak between electric throttle control actuator and compressor wheel.

Is intake air leak detected?

YES >> Repair or replace malfunction parts.

NO >> GO TO 3.

3.CHECK RECIRCULATION VALVE

- Turn ignition switch OFF.
- Check recirculation valve. Refer to EM-243, "Inspection".

Is the inspection result normal?

YES >> GO TO 4.

>> Replace recirculation valve. Refer to EM-241, "Exploded View". NO

f 4.CHECK TURBOCHARGER BYPASS CONTROL VALVE POWER SUPPLY

- Disconnect turbocharger bypass control valve harness connector.
- Turn ignition switch ON. 2.
- Check the voltage between turbocharger bypass control valve harness connector and ground.

	+		
Turbocharger by	pass control valve	_	Voltage
Connector Terminal			
F64	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5.

5.CHECK TURBOCHARGER BYPASS CONTROL VALVE POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between turbocharger bypass control valve harness connector and IPDM E/R harness connector.

+			_	
Turbocharger bypass control valve		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F64	1	E14	36	Existed

EC-1159 Revision: 2014 October 2015 JUKE

EC

Α

INFOID:0000000011667909

D

Е

F

Н

K

N

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply.

NO >> Repair or replace error-detected parts.

6.CHECK TURBOCHARGER BYPASS CONTROL VALVE OUTPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between turbocharger bypass control valve harness connector and ECM harness connector.

+		_		
	Turbocharger bypass control valve		ECM	
Connector	Terminal	Connector	Terminal	
F64	2	F24	105	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

.CHECK TURBOCHARGER BYPASS CONTROL VALVE

Check the turbocharger bypass control valve. Refer to <u>EC-1162, "Component Inspection (Turbocharger Bypass Control Valve)".</u>

Is the inspection result normal?

YES >> GO TO 8.

NO >> Replace turbocharger bypass control valve. Refer to EM-241, "Exploded View".

8.CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR OUTPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect electric wastegate control actuator harness connector and ECM harness connector.
- Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

	+	-		
	egate control uator	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	4	F24	107	Existed
101	5	1 24	108	LAISIEU

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

9. CHECK WASTEGATE CONTROL VALVE POSITION SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect electric wastegate control actuator harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between electric wastegate control actuator harness connector and ground.

	+		
=	ate control actua- or	-	Voltage (Approx.)
Connector	Terminal		
F61	3	Ground	5 V

EC

D

F

Ν

Р

Α

Is the inspection result normal?

YES >> GO TO 10.

NO >> Perform the trouble diagnosis for power supply circuit.

10.CHECK WASTEGATE CONTROL VALVE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

	+		_	
	egate control uator	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	2	F24	72	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace error-detected parts.

11. CHECK WASTEGATE CONTROL VALVE POSITION SENSOR INPUT SIGNAL CIRCUIT

 Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

	+	-		
	egate control uator	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	1	F24	65	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace error-detected parts.

12. CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR

Check the electric wastegate control actuator. Refer to EC-796, "Diagnosis Procedure".

Is the inspection result normal?

YES >> GO TO 13.

NO >> Replace exhaust manifold and turbocharger assembly. Refer to EM-241, "Exploded View".

13. CHECK TURBOCHARGER BOOST SENSOR

Check the turbocharger boost sensor. Refer to EC-1162, "Component Inspection (Turbocharger Boost Sensor)".

Is the inspection result normal?

YES >> GO TO 14.

NO >> Replace turbocharger boost sensor. Refer to EM-193, "Exploded View".

14. CHECK EXHAUST MANIFOLD AND TURBOCHARGER ASSEMBLY

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Check the exhaust manifold and turbocharger assembly. Refer to EM-243. "Inspection".

Is the inspection result normal?

YES >> CHECK INTERMITTENT INCIDENT. Refer to GI-44, "Intermittent Incident".

NO >> Replace exhaust manifold and turbocharger assembly. Refer to EM-241, "Exploded View".

Component Inspection (Turbocharger Bypass Control Valve)

INFOID:0000000011667910

1. CHECK TURBOCHARGER BYPASS CONTROL VALVE

(P)With consult

- 1. Turn ignition switch ON and engine stopped or engine running (idling, less than 1200rpm).
- On the CONSULT screen, select ENGINE » ACTIVE TEST »"TC BYPASS VALVE".
- 3. Operate "ON" or "OFF" and check if valve operating sound can be heard.

Without consult

- Turn ignition switch OFF.
- Disconnect turbocharger bypass control valve harness connector.
- Apply a voltage of 12V to the positive or negative terminal.

Can the valve operating sound be heard?

YES >> INSPECTION END

NO >> Replace turbocharger assembly (do not replace bypass control valve only). Refer to EM-39, <a href="Exploded View".

Component Inspection (Turbocharger Boost Sensor)

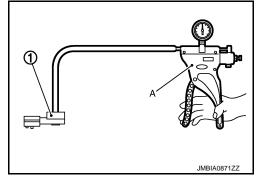
INFOID:0000000011667911

1. CHECK TURBOCHARGER BOOST SENSOR

- 1. Turn ignition switch OFF.
- Remove turbocharger boost sensor with its harness connector.
- 3. Install pressure pump (A) to turbocharger boost sensor (1).

When insert a pressure pump hose to the sensor, be careful to the damage of the sensor housing.

- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminals as per the following conditions.



NOTE:

- Always calibrate the pressure pump gauge when using it.
- Inspection should be done at room temperature [10 30°C (50 86°F)].

Connector + - Terminal				V. K
		_	Condition [Pressure (Relative to atmospheric pressure)]	Voltage (Approx.)
		ninal	7	(11 /
F23 11		11 13	0 kPa (0 mbar, 0 mmHg, 0 inHg)	2.03 V
125	""	13	40 kPa (400 mbar, 300 mmHg, 11.81 inHg)	2.67 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace turbocharger boost sensor. Refer to EM-39, "Exploded View".

P2413 EGR SYSTEM

DTC Logic

DTC DETECTION LOGIC

NOTE:

DTC P2413 is displayed with DTC P0401, or P0402, first perform the trouble diagnosis for DTC P0401, or P0402. Refer to EC-944, "DTC Logic".

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2413	EGR SYSTEM (EGR system performance)	ECM detects that a signal from EGR temper- ature sensor is 162° C(324°F) or more for 5 seconds under the condition that the EGR volume control valve is operating.	EGR cooler EGR cooler cooling system

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2.perform dtc confirmation procedure

- 1. Start the engine and warm it up to normal operating temperature.
- 2. Drive the vehicle at least 20 seconds at 60 km/h (37 MPH) or more.

CAUTION:

Always drive vehicle at a safe speed.

3. Check DTC.

Is DTC detected?

YES >> Proceed to EC-1163, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK COOLANT LEVEL-I

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could be caused by high pressure fluid escaping from the radiator.

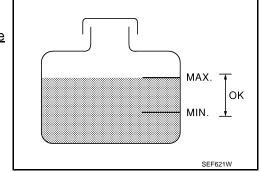
Wrap a thick cloth around cap. Carefully remove the cap by turning it a quarter turn to allow built-up pressure to escape. Then turn the cap all the way off.

Check the coolant level in the reservoir tank and radiator.

Allow engine to cool before checking coolant level.

<u>Is the coolant level in the reservoir tank and/or radiator below the proper range?</u>

YES >> GO TO 3. NO >> GO TO 2.



EC

Α

D

Е

F

Н

Н

.

J

Κ

INFOID:0000000011611209

M

IV

N

. .

0

Р

P2413 EGR SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2. CHECK COOLANT LEVEL-II

Confirm whether customer filled the coolant or not.

Did customer fill the coolant?

YES >> GO TO 3. NO >> GO TO 5.

3.CHECK COOLING SYSTEM FOR LEAK-I

Check cooling system for leak. Refer to CO-39, "Inspection".

Is leakage detected?

YES >> GO TO 4. NO >> GO TO 5.

4. CHECK COOLING SYSTEM FOR LEAK-II

Check the following for leak.

- Radiator
- Radiator hose
- Water pump
- EGR cooler
- EGR hose
- EGR tube

>> Repair or replace malfunctioning part.

5. CHECK EGR PASSAGE

Check the following for clogging and cracks.

- EGR cooler
- EGR hose
- EGR tube

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace EGR passage. Refer to EM-237, "Exploded View".

P2457 EGR COOLER

DTC Logic INFOID:0000000011611210

DTC DETECTION LOGIC

NOTE:

- DTC P2457 is displayed with DTC P0401, or P0402, first perform the trouble diagnosis for DTC P0401, or P0402. Refer to EC-944, "DTC Logic".
- DTC P2457 is displayed with DTC P044A or P044E, first perform the trouble diagnosis for DTC P044A or P044E. Refer to EC-694, "DTC Index".

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2457	EGR COOLING SYSTEM (EGR cooling system performance)	ECM detects that a signal from EGR temperature sensor is 162°C (324°F) or more for 5 seconds under the condition that the EGR volume control valve is operating.	EGR cooler EGR cooler cooling system

DTC CONFIRMATION PROCEDURE

CAUTION:

If "" is unfinished, be sure to perform EC-1165, "Diagnosis Procedure".

1.PRECONDITIONING-1

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

>> GO TO 2.

2.PRECONDITIONING-2

Is "Diagnosis Procedure" of DTC P2457 finished?

>> GO TO 3. YES

>> Proceed to EC-1165, "Diagnosis Procedure". NO

3.PERFORM DTC CONFIRMATION PROCEDURE

Drive the vehicle for 5 seconds or more under the conditions below.

Intake air temperature	5°C (41°F) or more
Engine coolant temperature	75°C (167°F) or more
Vehicle speed	50 km/h (31 MPH)

2. Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-1165, "Diagnosis Procedure". YES

>> INSPECTION END NO

Diagnosis Procedure

CHECK EGR COOLER COOLING SYSTEM

Check EGR cooler cooling system.

Is the inspection result normal?

>> GO TO 2. YES

NO >> Replace or replace error-detected parts.

EC-1165 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Н

K

N

INFOID:0000000011611211

P2457 EGR COOLER

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2. CHECK EGR COOLER

Perform inspection as follows:

- Check the inside of EGR cooler for clogging.Check EGR cooler for damage and water leakage.

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident". YES

NO >> Replace or replace error-detected parts.

P2562, P2566 WASTEGATE CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P2562, P2566 WASTEGATE CONTROL VALVE POSITION SENSOR

DTC Logic INFOID:0000000011611212

DTC DETECTION LOGIC

NOTE:

If DTC P2562 or P2566 is displayed with DTC P0643 first perform the trouble diagnosis for DTC P0643. Refer to EC-1057, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P2562	TC BOOST CONTROL POSI- TION SEN A (Turbocharger boost control po- sition sensor A circuit)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the wastegate control valve position sensor is 4.7 V or more.	Harness or connectors (Wastegate control valve position sen-
P2566	TC BOOST CONTROL POSI- TION SEN A (Turbocharger boost control po- sition sensor A circuit intermit- tent)	ECM detects the following status continuously for 0.5 seconds or more: A voltage signal transmitted from the wastegate control valve position sensor is 0.25 V or less.	sor circuit is open or shorted.) • Electric wastegate control actuator

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Start the engine and let it idle for 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1167, "Diagnosis Procedure".

>> INSPECTION END NO

Diagnosis Procedure

1.check wastegate control valve position sensor power supply

- Turn ignition switch OFF.
- 2. Disconnect electric wastegate control actuator harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between electric wastegate control actuator harness connector and ground.

	+		
=	ate control actua- or	-	Voltage (Approx.)
Connector Terminal			
F61 3		Ground	5 V

Is the inspection result normal?

YES >> GO TO 2. EC

Α

Е

D

K

M

INFOID:0000000011611213

Ν

P2562, P2566 WASTEGATE CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK WASTEGATE CONTROL VALVE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

	+	-		
	egate control uator	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	2	F24	72	Existed

4. Also check harness for short to power.

Is the inspection result normal?

>> GO TO 3. YES

NO >> Repair or replace error-detected parts.

3.CHECK WASTEGATE CONTROL VALVE POSITION SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

	+	_		
	egate control uator	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	1	F24	65	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

f 4.CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR

Check the electric wastegate control actuator. Refer to EC-1168, "Component Inspection (Electric Wastegate Control Actuator)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace electric wastegate control actuator. Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

Component Inspection (Electric Wastegate Control Actuator)

INFOID:0000000011611214

1.INSPECTION START

NO

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR

(P)With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "ACTIVE TEST" >> "WASTEGATE ACTUATOR".
- Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.002 m, and make a quick short note of value "V1" of "W/G ACTUATOR POSI SEN B1".

P2562, P2566 WASTEGATE CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.006 m, and make a quick short note of value "V2" of "W/G ACTUATOR POSI SEN B1".

Do the values of "V1" and "V2" change (visually, ACTUATOR SHAFT operates) and "V2" minus "V1" becomes equal to or more than 1.3V?

YES >> INSPECTION END

NO >> Replace Turbocharger Assembly (do not replace electric wastegate control actuator only). Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

3.check electric wastegate control actuator

- Turn ignition switch OFF.
- Disconnect Wastegate control actuator harness connector.
- While checking the POSITION SENSOR OUT voltage with an oscilloscope, apply a voltage of 12 V to the positive or negative terminal.

Does ACTUATOR SHAFT visually operate and POSITION SENSOR OUT voltage change?

YES >> INSPECTION END

NO >> Replace Turbocharger Assembly (do not replace electric wastegate control actuator only). Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

EC-1169 Revision: 2014 October 2015 JUKE

EC

Α

C

D

Е

F

Н

K

L

Ν

P2563 WASTEGATE CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P2563 WASTEGATE CONTROL VALVE POSITION SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P2563	TC BOOST CONTROL POSI- TION SEN A (Turbocharger boost control po- sition sensor A circuit range/per- formance)	ECM detects the following status when ECM operates the fully closed position learning of a wastegate control valve immediately after engine cold start: A voltage signal transmitted from the turbocharger boost control position sensor is higher than 1.78 V, or lower than 0.60 V.	Electric wastegate control actuator

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

Start the engine, and warm it up until the following condition is satisfied.

Engine coolant temperature	65°C (149°F) or more
Engine oil temperature	80°C (176°F) or more

- Move the vehicle to a cool place.
- Stop the engine, and cool it down until the following condition is satisfied.

Engine coolant temperature	50°C (122°F) or less
Engine oil temperature	30 C (122 1) 01 less

CAUTION

Never turn ignition switch ON during soaking.

4. Start engine and let it idle for 5 seconds or more.

CAUTION:

Never turn ignition switch OFF during idling.

Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1170, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011673418

1. CHECK WASTEGATE CONTROL VALVE POSITION SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect electric wastegate control actuator harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between electric wastegate control actuator harness connector and ground.

P2563 WASTEGATE CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+		
•	ate control actua- or	-	Voltage (Approx.)
Connector	Terminal		
F61	3	Ground	5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 5.

2.CHECK WASTEGATE CONTROL VALVE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

+			_	
Electric wastegate control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	2	F24	72	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK WASTEGATE CONTROL VALVE POSITION SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

+			_	
Electric wastegate control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	1	F24	65	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

f 4.CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR

Check the electric wastegate control actuator. Refer to <u>EC-1172</u>, "Component Inspection (<u>Electric Wastegate Control Actuator</u>)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace electric wastegate control actuator. Refer to <u>EC-588</u>, "ENGINE CONTROL SYSTEM : Component Parts Location".

5.CHECK WASTEGATE CONTROL VALVE POSITION SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

EC

Α

D

F

Ν

0

C

P2563 WASTEGATE CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Electric wastegate control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	3	F24	61	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for ECM power supply circuit. Refer to <u>EC-777, "Diagnosis Procedure".</u>

NO >> Repair or replace error-detected parts.

Component Inspection (Electric Wastegate Control Actuator)

INFOID:0000000011673419

1.INSPECTION START

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 3.

2. CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR

(P)With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- 2. On the CONSULT screen, select "ENGINE" >> "ACTIVE TEST" >> "WASTEGATE ACTUATOR".
- 3. Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.002 m, and make a quick short note of value of "W/G ACTUATOR POSI SEN B1". Assume this value to be "V1".
- 4. Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.006 m, and make a quick short note of value of "W/G ACTUATOR POSI SEN B1". Assume this value to be "V2".

<u>Do the values of "V1" and "V2" change (visually, ACTUATOR SHAFT operates) and "V2" minus "V1" becomes equal to or more than 1.3V?</u>

YES >> INSPECTION END

NO >> Replace Turbocharger Assembly (do not replace electric wastegate control actuator only). Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

${f 3.}$ CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR

⋈Without CONSULT

- 1. Turn ignition switch OFF.
- 2. Disconnect Wastegate control actuator harness connector.
- While checking the POSITION SENSOR OUT voltage with an oscilloscope, apply a voltage of 12 V to the positive or negative terminal.

Does ACTUATOR SHAFT visually operate and POSITION SENSOR OUT voltage change?

YES >> INSPECTION END

NO >> Replace Turbocharger Assembly (do not replace electric wastegate control actuator only). Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

P2564, P2565 WASTEGATE CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

F

Н

Ν

Р

INFOID:0000000011673268

P2564, P2565 WASTEGATE CONTROL VALVE POSITION SENSOR

DTC Logic

DTC DETECTION LOGIC

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P2564	TC BOOST CONTROL POSI- TION SEN A (Turbocharger boost control po- sition sensor A circuit low)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the wastegate control valve position sensor is 0.25 V or less.	Harness or connectors (Wastegate control valve position sen-
P2565	TC BOOST CONTROL POSI- TION SEN A (Turbocharger boost control po- sition sensor A circuit high)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the wastegate control valve position sensor is 4.63 V or more.	sor circuit is open or shorted.) • Electric wastegate control actuator

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 10 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1173, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK WASTEGATE CONTROL VALVE POSITION SENSOR POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect electric wastegate control actuator harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between electric wastegate control actuator harness connector and ground.

	+		
•	ate control actua- or	-	Voltage (Approx.)
Connector	Terminal		
F61 3		Ground	5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 5.

2. CHECK WASTEGATE CONTROL VALVE POSITION SENSOR GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connector.

Revision: 2014 October EC-1173 2015 JUKE

P2564, P2565 WASTEGATE CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

+			_	
Electric wastegate control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	2	F24	72	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK WASTEGATE CONTROL VALVE POSITION SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

+		-		
Electric wastegate control actuator		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F61	1	F24	65	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

>> Repair or replace error-detected parts. NO

4.CHECK ELECTRIC WASTEGATE CONTROL ACTUATOR

Check the electric wastegate control actuator. Refer to EC-1174, "Component Inspection (Electric Wastegate Control Actuator)".

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace electric wastegate control actuator. Refer to EC-588, "ENGINE CONTROL SYSTEM : Component Parts Location".

5. CHECK WASTEGATE CONTROL VALVE POSITION SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between electric wastegate control actuator harness connector and ECM harness connector.

Electric wastegate control actuator		ECM		Continuity
Connector	Terminal	Connector Terminal		
F61	3	F24	61	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

>> Perform the trouble diagnosis for ECM power supply circuit. Refer to EC-777, "Diagnosis Proce-YES dure".

>> Repair or replace error-detected parts. NO

Component Inspection (Electric Wastegate Control Actuator)

INFOID:0000000011732295

1. INSPECTION START

P2564, P2565 WASTEGATE CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 3.

2.check electric wastegate control actuator

(P)With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "ACTIVE TEST" >> "WASTEGATE ACTUATOR".
- Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.002 m, and make a quick short note of value of "W/G ACTUATOR POSI SEN B1". Assume this value to be "V1".
- 4. Operate "Up" or "Down", set "W/G ACTUATOR POSITION B1" to 0.006 m, and make a quick short note of value of "W/G ACTUATOR POSI SEN B1". Assume this value to be "V2".

Do the values of "V1" and "V2" change (visually, ACTUATOR SHAFT operates) and "V2" minus "V1" becomes equal to or more than 1.3V?

YES >> INSPECTION END

NO >> Replace Turbocharger Assembly (do not replace electric wastegate control actuator only). Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

3.check electric wastegate control actuator

- Turn ignition switch OFF.
- Disconnect Wastegate control actuator harness connector.
- While checking the POSITION SENSOR OUT voltage with an oscilloscope, apply a voltage of 12 V to the positive or negative terminal.

Does ACTUATOR SHAFT visually operate and POSITION SENSOR OUT voltage change?

YES >> INSPECTION END

NO >> Replace Turbocharger Assembly (do not replace electric wastegate control actuator only). Refer to EC-588, "ENGINE CONTROL SYSTEM: Component Parts Location".

Α

EC

D

Е

F

Н

N

EC-1175 Revision: 2014 October 2015 JUKE

P2610 ECM INTERNAL TIMER

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P2610 ECM INTERNAL TIMER

Description INFOID:000000011667638

This ECM contains a timer and measures time between an ignition switch OFF and the next ignition switch ON. This enables the judging of the state of engine cooling at an engine start.

DTC Logic

DTC DETECTION LOGIC

DTC No.	CONSULT screen terms (Trouble diagnosis content)	DTC detecting condition	Possible cause
P2610	ECM/PCM INTERNAL ENG OFF TIMER (ECM/PCM internal engine off timer performance)	ECM internal engine off timer is malfunctioning. The time calculated by ECM based on a descent allowance of engine coolant temperatures during ignition switch OFF is extremely shorter than the time counted by the Engine internal OFF timer.	ECM

DTC CONFIRMATION PROCEDURE

1.INSPECTION START

It is necessary to erase permanent DTC?

YES >> GO TO 4. NO >> GO TO 2.

2.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

Before performing the following procedure, confirm that battery voltage is 12 V or more under ignition switch OFF condition.

>> GO TO 3.

3.perform dtc confirmation procedure-i

- 1. Turn ignition switch ON and wait at least 190 seconds.
- 2. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1177, "Diagnosis Procedure".

NO >> INSPECTION END

4.PRECONDITIONING

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TESTING CONDITION:

- Before performing the following procedure, confirm that battery voltage is 12 V or more under ignition switch OFF condition.
- Before performing the following procedure, check that fuel level is between 2/8 and 7/8.

>> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE-I

1. Turn ignition switch ON and wait at least 190 seconds.

P2610 ECM INTERNAL TIMER

< DTC/CIRCUIT DIAGNOSIS > Check 1st trip DTC. Is 1st trip DTC detected? >> Proceed to EC-1177, "Diagnosis Procedure". YES NO >> GO TO 6. 6 PERFORM DTC CONFIRMATION PROCEDURE-II **CAUTION:** lowing steps to satisfy the conditions. NOTE: 1. Turn ignition switch ON. Start engine and warm it up to normal operating temperature. **CAUTION:**

[MR EXCEPT FOR NISMO RS MODELS]

EC D

Е

F

INFOID:0000000011667640

Α

To start this self-diagnosis, the conditions listed bellow are required to be satisfied. Perform the fol-

 Engine coolant temperature decrease by 55°C (131°F) or more during the time between an ignition switch OFF (after engine warm-up) and the second ignition switch ON.

A fuel temperature at the second ignition switch ON is -5°C (23°F) or more and less than 35°C (95°F).

The temperature difference between engine coolant and fuel is 5°C (41°F) or more.

This self-diagnosis is not performed if the distance traveled is extremely short.

- Turn ignition switch OFF and soak the vehicle for at least 12 hours.
 - . Never turn ON the ignition switch during soaking.
 - · Never open the fuel filler cap and perform refueling during soaking.
- 4. Turn ignition switch ON and wait at least 190 seconds.
- Check 1st trip DTC.

Is 1st trip DTC detected?

>> Proceed to EC-1177, "Diagnosis Procedure". YES

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK SELF-DIAGNOSTIC RESULT

Check that DTCs related to the fuel system and the cooling system are not detected.

Is the inspection result normal?

YES >> Check the DTC. Refer to EC-656, "CONSULT Function".

NO >> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Erase DTC.
- Perform DTC Confirmation Procedure again. Refer to EC-694, "DTC Index".

Is the 1st trip DTC P2610 displayed again?

>> Replace ECM. Refer to EC-1255, "Removal and Installation". YES

NO >> INSPECTION END

N

K

P26A3 MULTI-WAY CONTROL VALVE MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P26A3 MULTI-WAY CONTROL VALVE MOTOR

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P26A3 is displayed with DTC P26A5, P26A6, and/or P26A7 first perform the trouble diagnosis for DTC P26A5, P26A6, and/or P26A7. Refer to <u>EC-694, "DTC Index"</u>.

DTC No. Trouble diagnosis name (Trouble diagnosis content)		DTC detecting condition	Possible Cause
P26A3	ENGINE COOLANT BYPASS VALVE (Engine coolant bypass valve A range/performance)	ECM detects the following status continuously for 10 seconds or more: Target valve angle - actual valve angle $\geq \pm 5^{\circ}$	(Multi-way control valve motor circuit is

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is between more than 10 V and less than 16 V at idle.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

- 1. Turn ignition switch ON and wait at least 10 seconds.
- 2. Start the engine and let it idle for 60 seconds.
- 3. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1178, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011611216

1. CHECK MULTI-WAY CONTROL VALVE MOTOR OUTPUT SIGNAL CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect multi-way control valve harness connector and ECM harness connector.
- 3. Check the continuity between multi-way control valve harness connector and ECM harness connector.

+		-		
Multi-way control valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F60	1	F23	52	Existed
	2	F23	51	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2. CHECK MULTI-WAY CONTROL VALVE MOTOR

Check the multi-way control valve motor. Refer to <u>EC-1179</u>, "Component Inspection (Multi-way Control Valve)".

P26A3 MULTI-WAY CONTROL VALVE MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Is the	inspection	result	normal?
19 1116	111206611011	169all	HUHHAH

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace multi-way control valve. Refer to CO-53, "Removal and Installation".

Component Inspection (Multi-way Control Valve)

INFOID:0000000011611217

1. CHECK MULTI-WAY CONTROL VALVE-1

(P)With CONSULT

- Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "WORK SUPPORT" >> "ENGINE COOLANT BYPASS VALVE".
- Check that indication of "ENGINE COOLANT B/V POSI".

Is "205°" or more displayed on CONSULT screen?

YES >> GO TO 2.

NO >> Replace multi-way control valve. Refer to CO-53, "Removal and Installation".

2.CHECK MULTI-WAY CONTROL VALVE-2

(P)With CONSULT

- Start the engine.
- 2. Warm engine up to the normal operating temperature.
- Check the following condition.

COOLANT TEMP/S	10 - 100°C (50 - 212°F)
ENG OIL TEMP	120°C (248°F) or less
A/C switch	OFF

- 4. Turn ignition switch OFF and wait at least 10 seconds.
- Start the engine.
- 6. Check "ENGINE COOLANT B/V POSI" approximately 2 seconds after engine start.

Is "40°" or less displayed on CONSULT screen?

YES >> INSPECTION END

NO >> Replace multi-way control valve. Refer to CO-53, "Removal and Installation".

Е

F

Н

K

L

Ν

D

Α

EC

Р

Revision: 2014 October EC-1179 2015 JUKE

P26A5 MULTI-WAY CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P26A5 MULTI-WAY CONTROL VALVE POSITION SENSOR

DTC Logic INFOID:0000000011611218

DTC DETECTION LOGIC

NOTE:

- If DTC P26A5 is displayed with DTC P0117 or P0118, first perform the trouble diagnosis for DTC P0117 or P0118. Refer to <u>EC-694, "DTC Index"</u>.
- If DTC P26A5 is displayed with DTC P26A3 first perform the trouble diagnosis for DTC P26A3. Refer to EC-1178, "DTC Logic".
- If DTC P26A5 is displayed with DTC P26A6, or P26A7 first perform the trouble diagnosis for DTC P26A6, or P26A7. Refer to <u>EC-1183</u>. "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause
P26A5	ENGINE COOLANT B/V A POSI SEN (Engine coolant bypass valve A position sensor circuit range/ performance)	 ECM detects the following status: A voltage signal transmitted from the multi-way control valve position sensor is 4.76 V or more/4.3 V or less. Outside the above threshold when the valve is moved to the upper side stopper after ignition OFF. A voltage signal transmitted from the multi-way control valve position sensor is 0.8 V or more/0.34 or less. Outside the threshold when the valve is moved to the lower side stopper after engine start. 	Harness or connectors (Multi-way control valve position sensor circuit is open or shorted.) Multi-way control valve position sensor

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- 3. Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 10 V at ignition switch ON.

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE-1

- 1. Start the engine and let it idle.
- Maintain the following conditions for at least 10 consecutive seconds.

Engine outlet coolant temperature (engine coolant temperature sensor 1)	10°C (50°F) or more
Engine oil temperature	135°C (275°F) or less
Engine speed	4,500 rpm or less
Accelerator pedal	Fully released

3. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1181, "Diagnosis Procedure".

NO >> GO TO 3.

3. PERFORM DTC CONFIRMATION PROCEDURE-2

1. Turn ignition switch OFF and wait at least 10 seconds.

P26A5 MULTI-WAY CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2. Start the engine and let it idle.

Maintain the following conditions for at least 10 consecutive seconds.

Engine outlet coolant temperature (engine coolant temperature sensor 1)

Engine oil temperature

10°C (50°F) or more

135°C (275°F) or less

Engine speed

4,500 rpm or less

EC

Α

4. Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1181, "Diagnosis Procedure".

NO >> INSPECTION END

D

Е

F

Ν

Р

INFOID:0000000011611219

Diagnosis Procedure

1. CHECK MULTI-WAY CONTROL VALVE POSITION SENSOR POWER SUPPLY

Turn ignition switch OFF.

- 2. Disconnect multi-way control valve harness connector.
- Turn ignition switch ON.

4. Check the voltage between multi-way control valve harness connector and ground.

+			
Multi-way control valve		_	Voltage (Approx.)
Connector	Terminal		,
F60	5	Ground	5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.check multi-way control valve position sensor ground circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between multi-way control valve harness connector and ECM harness connector.

+			_	
Multi-way control valve		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F60	3	F24	72	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO

>> Repair or replace error-detected parts.

3.check multi-way control valve position sensor input signal circuit

Check the continuity between multi-way control valve harness connector and ECM harness connector.

	•	+		_	
Multi-way control valve		ECM		Continuity	
-	Connector	Terminal	Connector	Terminal	
	F60	4	F24	75	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

P26A5 MULTI-WAY CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Repair or replace error-detected parts.

4. CHECK MULTI-WAY CONTROL VALVE POSITION SENSOR

Check the multi-way control valve position sensor. Refer to <u>EC-1182</u>, "Component Inspection (Multi-way Control Valve)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace multi-way control valve. Refer to CO-53, "Removal and Installation".

Component Inspection (Multi-way Control Valve)

INFOID:0000000011611220

1. CHECK MULTI-WAY CONTROL VALVE-1

(P)With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "WORK SUPPORT" >> "ENGINE COOLANT BYPASS VALVE".
- 3. Check that indication of "ENGINE COOLANT B/V POSI".

Is "205°" or more displayed on CONSULT screen?

YES >> GO TO 2.

NO >> Replace multi-way control valve. Refer to CO-53, "Removal and Installation".

2.CHECK MULTI-WAY CONTROL VALVE-2

(II) With CONSULT

- 1. Start the engine.
- 2. Warm engine up to the normal operating temperature.
- Check the following condition.

COOLANT TEMP/S	10 - 100°C (50 - 212°F)
ENG OIL TEMP	120°C (248°F) or less
A/C switch	OFF

- Turn ignition switch OFF and wait at least 10 seconds.
- Start the engine.
- 6. Check "ENGINE COOLANT B/V POSI" approximately 2 seconds after engine start.

Is "40°" or less displayed on CONSULT screen?

YES >> INSPECTION END

NO >> Replace multi-way control valve. Refer to CO-53, "Removal and Installation".

P26A6 P26A7 MULTI-WAY CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P26A6 P26A7 MULTI-WAY CONTROL VALVE POSITION SENSOR

DTC Logic INFOID:0000000011611221

DTC DETECTION LOGIC

NOTE:

If DTC P26A6 or P26A7 is displayed with DTC P0643 first perform the trouble diagnosis for DTC P0643. Refer to EC-1057, "DTC Logic".

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible Cause	
P26A6	ENGINE COOLANT B/V A POSI SEN (Engine coolant bypass valve A position sensor circuit low)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the multiway control valve position sensor is 0.34 V or less.	Harness or connectors (Multi-way control valve position sensor)	
P26A7	ENGINE COOLANT B/V A POSI SEN (Engine coolant bypass valve A position sensor circuit high)	ECM detects the following status continuously for 5 seconds or more: A voltage signal transmitted from the multiway control valve position sensor is 4.76 V or more.	circuit is open or shorted.) • Multi-way control valve position sensor	

DTC CONFIRMATION PROCEDURE

1.PRECONDITIONING

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

TEST CONDITION:

Before performing the following procedure, confirm that battery voltage is more than 11 V at ignition switch

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

- Turn ignition switch ON and wait at least 10 seconds.
- Start the engine and let it idle for 20 seconds. 2.
- Check 1st trip DTC.

Is 1st trip DTC detected?

YES >> Proceed to EC-1183, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

1. CHECK MULTI-WAY CONTROL VALVE POSITION SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect multi-way control valve harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between multi-way control valve harness connector and ground.

+			V. 1.	
Multi-way control valve		_	Voltage (Approx.)	
Connector	Terminal		(11 -)	
F60	5	Ground	5 V	

Is the inspection result normal?

EC-1183 Revision: 2014 October 2015 JUKE

EC

Α

Е

D

F

K

M

Ν

INFOID:0000000011611222

P26A6 P26A7 MULTI-WAY CONTROL VALVE POSITION SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK MULTI-WAY CONTROL VALVE POSITION SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between multi-way control valve harness connector and ECM harness connector.

+		_		
Multi-way o	Multi-way control valve		ECM	
Connector	Terminal	Connector	Terminal	
F60	3	F24	72	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.check multi-way control valve position sensor input signal circuit

1. Check the continuity between multi-way control valve harness connector and ECM harness connector.

+		_		
Multi-way o	control valve	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F60	4	F24	75	Existed

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK MULTI-WAY CONTROL VALVE POSITION SENSOR

Check the multi-way control valve position sensor. Refer to <u>EC-1182</u>, "Component Inspection (Multi-way Control Valve)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace multi-way control valve. Refer to CO-53, "Removal and Installation".

Component Inspection (Multi-way Control Valve)

INFOID:0000000011611223

1. CHECK MULTI-WAY CONTROL VALVE-1

(P)With CONSULT

- 1. Turn ignition switch ON and engine stopped.
- On the CONSULT screen, select "ENGINE" >> "WORK SUPPORT" >> "ENGINE COOLANT BYPASS VALVE".
- 3. Check that indication of "ENGINE COOLANT B/V POSI".

Is "205°" or more displayed on CONSULT screen?

YES >> GO TO 2.

NO >> Replace multi-way control valve. Refer to CO-53, "Removal and Installation".

2.CHECK MULTI-WAY CONTROL VALVE-2

(P)With CONSULT

- Start the engine.
- 2. Warm engine up to the normal operating temperature.
- Check the following condition.

P26A6 P26A7 MULTI-WAY CONTROL VALVE POSITION SENSOR [MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >

COOLANT TEMP/S	10 - 100°C (50 - 212°F)
ENG OIL TEMP	120°C (248°F) or less
A/C switch	OFF

- 4. Turn ignition switch OFF and wait at least 10 seconds.
- 5. Start the engine.
- 6. Check "ENGINE COOLANT B/V POSI" approximately 2 seconds after engine start.

Is "40°" or less displayed on CONSULT screen?

>> INSPECTION END YES

>> Replace multi-way control valve. Refer to CO-53, "Removal and Installation". NO

EC

Α

 D

Е

F

Н

K

L

M

Ν

0

P26AB MULTI-WAY CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

P26AB MULTI-WAY CONTROL VALVE

DTC Logic

DTC DETECTION LOGIC

NOTE:

If DTC P26AB is displayed with DTC P0300, P0301, P0302, P0303 or P0304, first perform the trouble diagnosis for P0300, P0301, P0302, P0303, P0304. Refer to <u>EC-926, "DTC Logic".</u>

Engine coolant temperature has not risen enough to open the multi-way control valve even though the engine has run long enough.

This is due to a leak in the seal or the multi-way control valve being stuck open.

DTC No.	Trouble diagnosis name (Trouble diagnosis content)	DTC detecting condition	Possible cause
P26AB	ENGINE COOLANT B/V POSI SEN (Engine coolant bypass valve "A" stuck/open)	The engine coolant temperature does not reach to specified temperature even though the engine has run long enough.	Multi-way control valve Leakage from multi-way control valve Engine coolant temperature sensor 1

DTC CONFIRMATION PROCEDURE

NOTE:

Never refuel before and during the following procedure.

1.PRECONDITIONING-1

If DTC Confirmation Procedure has been previously conducted, always perform the following procedure before conducting the next test.

- 1. Turn ignition switch OFF and wait at least 10 seconds.
- 2. Turn ignition switch ON.
- Turn ignition switch OFF and wait at least 10 seconds.

>> GO TO 2.

2.PRECONDITIONING-2

(P)With CONSULT

- 1. Turn ignition switch ON.
- 2. Check the following conditions:

Ambient temperature	-10°C (14°F) or more
A/C switch	OFF
Blower fan switch	OFF

- 3. Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- Check the following conditions:

Is the condition satisfied?

YES >> GO TO 3.

NO >> 1. Satisfy the condition.

2. GO TO 3.

3.perform dtc confirmation procedure-1 $\,$

(P)With CONSULT

- 1. Start engine.
- 2. Drive the vehicle until the following condition is satisfied.

Always drive vehicle at safe speed.

- STEP 1

P26AB MULTI-WAY CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

Drive the vehicle under the conditions instructed below until the difference between "COOLAN TEMP/S" and "FUEL T/TMP SE" becomes at least 23°C (73°F).

OOOLANITEMP/O	0000 (45.405)	-	
COOLAN TEMP/S	68°C (154°F) or less	_	EC
FUEL T/TMP SE	Less than the value calculated by subtracting 28°C (82°F) from "COOLAN TEMP/S".*		LO
*: Example		_	С
COOLAN TEMP/S	FUEL T/TMP SE	-	
65°C (149°F)	37°C (99°F) or less	-	D
60°C (140°F)	32°C (89°F) or less	- -	
T/TMP SE" maintained at 28 NOTE:	°C (82°F) or more.	between "COOLAN TEMP/S" and "FUEL	Е
- STEP 3	steady as possible during cruising. 7 MPH) or more until "COOLAN TE	MP/S" increases by 6°C (43°F).	F
_	steady as possible during cruising.		G
NO >> GO TO 1. 4. PERFORM DTC CONFIRMAT	TION PROCEDURE-2		Н
With CONSULT1. Drive the vehicle until the fol	lowing condition is satisfied.		I
COOLAN TEMP/S	68°C (154°F) or more	_	J
CAUTION:		_	
Always drive vehicle at saf 2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END	e speed. . "Diagnosis Procedure".		K
2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END		INFOID:000000011682005	K
2. Check 1st trip DTC.Is 1st trip DTC detected?YES >> Proceed to EC-1187	, "Diagnosis Procedure".	INFOID:0000000011682005	K L
2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLANT	, "Diagnosis Procedure".		L
2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLANT Check the engine coolant temper Is the inspection result normal? YES >> GO TO 2.	, "Diagnosis Procedure". TEMPERATURE SENSOR 1	"Component Inspection".	L
2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLANT Check the engine coolant temper Is the inspection result normal? YES >> GO TO 2.	. "Diagnosis Procedure". TEMPERATURE SENSOR 1 rature sensor 1. Refer to EC-1187.	"Component Inspection".	L
2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLANT Check the engine coolant temper Is the inspection result normal? YES >> GO TO 2. NO >> Replace engine cool 2.CHECK MULTI-WAY CONTRE	"Diagnosis Procedure". TEMPERATURE SENSOR 1 rature sensor 1. Refer to EC-1187. ant temperature sensor 1. Refer to OL VALVE	"Component Inspection". CO-53, "Exploded View".	L M
2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLANT Check the engine coolant temper Is the inspection result normal? YES >> GO TO 2. NO >> Replace engine cool 2.CHECK MULTI-WAY CONTRE	"Diagnosis Procedure". TEMPERATURE SENSOR 1 rature sensor 1. Refer to EC-1187. ant temperature sensor 1. Refer to OL VALVE	"Component Inspection".	L M
2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLANT Check the engine coolant temper Is the inspection result normal? YES >> GO TO 2. NO >> Replace engine cool 2.CHECK MULTI-WAY CONTRO Check the multi-way control valve Is the inspection result normal? YES >> INSPECTION END	"Diagnosis Procedure". TEMPERATURE SENSOR 1 rature sensor 1. Refer to EC-1187. ant temperature sensor 1. Refer to OL VALVE	"Component Inspection". CO-53. "Exploded View". Inspection (Multi-way Control Valve)".	L M
2. Check 1st trip DTC. Is 1st trip DTC detected? YES >> Proceed to EC-1187 NO >> INSPECTION END Diagnosis Procedure 1.CHECK ENGINE COOLANT Check the engine coolant temper Is the inspection result normal? YES >> GO TO 2. NO >> Replace engine cool 2.CHECK MULTI-WAY CONTRO Check the multi-way control valve Is the inspection result normal? YES >> INSPECTION END	"Diagnosis Procedure". TEMPERATURE SENSOR 1 rature sensor 1. Refer to EC-1187. ant temperature sensor 1. Refer to OL VALVE e. Refer to EC-1182, "Component In	"Component Inspection". CO-53. "Exploded View". Inspection (Multi-way Control Valve)".	L M N

Turn ignition switch OFF.

Disconnect engine coolant temperature sensor harness connector.

EC-1187 Revision: 2014 October 2015 JUKE

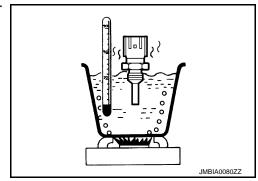
P26AB MULTI-WAY CONTROL VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- 3. Remove engine coolant temperature sensor.
- 4. Check resistance between engine coolant temperature sensor terminals by heating with hot water as shown in the figure.

Ū	oolant tem- e sensor	Condition		D (1.0)
+	-			Resistance (kΩ)
Terr	ninal			
		T	20 (68)	2.37 - 2.63
1	2	Temperature [°C (°F)]	50 (122)	0.68 - 1.00
		(- /1	90 (194)	0.236 - 0.260



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace engine coolant temperature sensor 1. Refer to <u>CO-53. "Exploded View"</u>.

BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

BATTERY CURRENT SENSOR

Component Function Check

INFOID:0000000011611227

Α

EC

D

Е

F

Н

M

Р

1. CHECK BATTERY CURRENT SENSOR

- 1. Start engine and warm it up to normal operating temperature.
- Check the voltage between ECM harness connector terminals.

ECM			V 16
Connector	+	-	Voltage (Approx.)
Connector	Terminal		(11)
F23	38	43	2.6 - 3.5 V*

^{*:} Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-1189</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000011611228

1. CHECK BATTERY CURRENT SENSOR POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect battery current sensor harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between battery current sensor harness connector and ground.

	+		Voltage (Approx.)	
Battery cur	rent sensor	-		
Connector	Terminal		, , ,	
F52	1	Ground	5 V	

Is the inspection result normal?

YES >> GO TO 3. NO >> GO TO 2.

2.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check battery current sensor ground circuit

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between battery current sensor harness connector and ECM harness connector.

+				
Battery cui	rent sensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
F52	3	F23	43	Existed

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

Revision: 2014 October EC-1189 2015 JUKE

BATTERY CURRENT SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. CHECK BATTERY CURRENT SENSOR INPUT SIGNAL CIRCUIT

1. Check the continuity between battery current sensor harness connector and ECM harness connector.

+				
Battery cur	rent sensor	ECM		Continuity
Connector	Terminal	Connector Terminal		
F52	4	F23	38	Existed

Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

CHECK BATTERY CURRENT SENSOR

Check the battery current sensor. Refer to EC-1089, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace battery negative cable assembly.

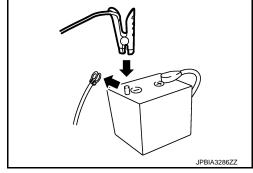
Component Inspection

INFOID:0000000011611229

1. CHECK BATTERY CURRENT SENSOR

- 1. Turn ignition switch OFF.
- 2. Reconnect harness connectors disconnected.
- 3. Disconnect battery negative cable.
- 4. Install jumper cable between battery negative terminal and body ground.
- 5. Turn ignition switch ON.
- 6. Check the voltage between ECM harness connector and ground.

	ECM		Villa
Connector	+	-	Voltage (Approx.)
Connector	Terminal		, , ,
F23	38	43	2.5 V*



^{*:} Before measuring the terminal voltage, confirm that the battery is fully charged. Refer to PG-108, "How to Handle Battery".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace battery negative cable assembly.

BRAKE PEDAL POSITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

BRAKE PEDAL POSITION SWITCH

Component Function Check

INFOID:0000000011674443

${f 1}$.CHECK BRAKE PEDAL POSITION SWITCH FUNCTION

With CONSULT

- Turn ignition switch ON.
- Select "BRAKE SW1" in "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Check "BRAKE SW1" indication as per the following conditions.

Monitor item	Condition		Condition		Indication
BRAKE SW1	Brako podal	Slightly depressed	OFF		
	Brake pedal	Fully released	ON		

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector terminals as per the following.

	ECM						
Connector	+	_	Condition				Voltage (Approx.)
Connector	Tern	ninal			, , ,		
E19	140	152	Brake nedal	Slightly depressed	0 V		
	19 140 132 51	Brake pedai	Brake pedal Fully released				

Is the inspection result normal?

YES >> INSPECTION END

>> Proceed to EC-1191, "Diagnosis Procedure". NO

Diagnosis Procedure

INFOID:0000000011674444

1. CHECK BRAKE PEDAL POSITION SWITCH POWER SUPPLY

- Turn ignition switch OFF.
- Disconnect brake pedal position switch harness connector. 2.
- 3. Turn ignition switch ON.
- Check the voltage between brake pedal position switch harness connector and ground.

+	•		
Brake pedal p	osition switch	_	Voltage
Connector	Terminal		
E112	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform the trouble diagnosis for power supply circuit.

2.CHECK BRAKE PEDAL POSITION SWITCH INPUT SIGNAL CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between brake pedal position switch harness connector and ECM harness connector.

+		-		
Brake pedal pe	osition switch	ECM		Continuity
Connector	Terminal	Connector	Terminal	
E112	2	E19	140	Existed

EC-1191 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

K

Ν

BRAKE PEDAL POSITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK BRAKE PEDAL POSITION SWITCH

Check the brake pedal position switch. Refer to <u>EC-1192</u>, "Component Inspection (Brake Pedal Position Switch)"

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace brake pedal position switch. Refer to BR-20, "Exploded View".

Component Inspection (Brake Pedal Position Switch)

INFOID:0000000011674445

1. CHECK BRAKE PEDAL POSITION SWITCH-I

- 1. Turn ignition switch OFF.
- Disconnect brake pedal position harness connector.
- 3. Check the continuity between brake pedal position switch terminals as per the following conditions.

Brake pedal position switch				
+	-	Condition		Continuity
Tern	ninals			
			Fully released	Existed
1	2	Brake pedal	Slightly de- pressed	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK BRAKE PEDAL POSITION SWITCH-II

- 1. Adjust brake pedal position switch installation. Refer to BR-21, "Inspection and Adjustment".
- 2. Check the continuity between brake pedal position switch terminals as per the following conditions.

Brake pedal p	Brake pedal position switch					
+	-	Condition		Condition Continuity		Continuity
Tern	ninals					
			Fully released	Existed		
1	2	Brake pedal	Slightly de- pressed	Not existed		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace brake pedal position switch. Refer to <u>BR-20, "Exploded View"</u>.

CLUTCH PEDAL POSITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

CLUTCH PEDAL POSITION SWITCH

Component Function Check

INFOID:0000000011611233

Α

EC

D

Е

1. CHECK FOR CLUTCH PEDAL POSITION SWITCH FUNCTION

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector and ground.

	ECM				Valtana		
Connector	+	ı	Condition		Condition Voltage (Approx.)		voitage (Approx.)
	Teri	minal			, , ,		
E19	132	152	Clutch pedal Slightly depressed Fully released		Battery voltage		
L 19	102	102			0V		

Is the inspection result normal?

YES >> INSPECTION END.

NO >> Proceed to <u>EC-1193</u>, "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000011611234

1. CHECK CLUTCH PEDAL POSITION INPUT SIGNAL

- 1. Turn ignition switch OFF.
- 2. Disconnect clutch pedal position switch harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between clutch pedal position switch harness connector and ground.

	+		
Clutch pedal	position switch	_	Voltage
Connector	Terminal		
E113	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.check clutch pedal position switch input signal circuit

- Turn ignition switch OFF.
- Disconnect ECM harness connectors.
- Check the continuity between clutch pedal position switch harness connector and ECM harness connector.

	+				
Clutch pedal	position switch	ECM		Continuity	
Connector	Terminal	Connector	Terminal		
E113	1	E19	132	Existed	

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

${f 3.}$ CHECK CLUTCH PEDAL POSITION SWITCH GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect ECM harness connectors.

.

J

K

L

M

Ν

Р

CLUTCH PEDAL POSITION SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Check the continuity between clutch pedal position switch harness connector and ground

	+			
Clutch pedal p	position switch	_	Continuity	
Connector	Terminal			
E113	2	Ground	Existed	

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK CLUTCH PEDAL POSITION SWITCH

Check the clutch pedal position switch. Refer to EC-1194, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace clutch pedal position switch. Refer to BR-20, "Exploded View".

Component Inspection

INFOID:0000000011611235

1. CHECK CLUTCH PEDAL POSITION SWITCH-I

- Turn ignition switch OFF.
- 2. Disconnect clutch pedal position switch harness connector.
- 3. Check the continuity between clutch pedal position switch terminals as per the following conditions.

Clutch pedal	position switch					
+	_	Condition Continui		Condition		Continuity
Terr	minal					
1	2	Clutch pedal Fully released		Existed		
	2	Cidicii pedai	Slightly depressed	Not existed		

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2. CHECK CLUTCH PEDAL POSITION SWITCH-II

- 1. Adjust clutch pedal position switch installation. Refer to CL-12, "Inspection and Adjustment".
- 2. Check the continuity between clutch pedal position switch terminals as per the following conditions.

Clutch pedal	position switch				
+	_	Condition Continu		Continuity	
Teri	minal				
1	2	Clutch pedal Fully released Slightly depressed		Existed	
	2			Not existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace clutch pedal position switch. Refer to CL-11, "Exploded View".

COOLING FAN

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

COOLING FAN

Component Function Check

INFOID:0000000011611236

Α

EC

Е

Н

1. CHECK COOLING FAN FUNCTION

With CONSULT

- Turn ignition switch ON.
- Perform "FAN DUTY CONTROL" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Check that cooling fan speed varies according to the percentage.

- 1. Activate IPDM E/R auto active test and check cooling fan motors operation. Refer to PCS-11, "Diagnosis Description".
- 2. Check that cooling fan operates.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1195, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611237

1. CHECK COOLING FAN CONTROL MODULE POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect cooling fan control nodule harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between cooling fan control nodule harness connector and ground.

	+		
Cooling fan o	control module	_	Voltage
Connector	Terminal		
E203	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

K

M

N

Р

2.CHECK COOLING FAN CONTROL MODULE POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect cooling fan relay harness connector.
- Check the continuity between cooling fan control nodule harness connector and cooling fan relay harness connector.

+		-			
Cooling fan o	control module	Cooling fan relay		Continuity	
Connector	Terminal	Connector	Terminal		
E203	3	E204	3	Existed	

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK COOLING FAN RELAY POWER SUPPLY CIRCUIT

- 1. Disconnect IPDM E/R harness connector.
- 2. Check the continuity between cooling fan relay harness connector and IPDM E/R harness connector.

	+		_		
Cooling	fan relay	IPDM E/R		Continuity	
Connector	Terminal	Connector	Terminal		
E204	1	E17 67		Existed	

3. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK COOLING FAN RELAY

Check cooling fan relay. Refer to EC-1197, "Component Inspection (Cooling Fan Relay)".

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Replace cooling fan relay.

5.CHECK COOLING FAN CONTROL MODULE GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Check the continuity between cooling fan control nodule harness connector and ground.

	+			
Cooling fan c	ontrol module	_	Continuity	
Connector	Terminal			
E203	1	Ground	Existed	

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6. CHECK COOLING FAN CONTROL SIGNAL CIRCUIT

- Disconnect IPDM E/R harness connector.
- 2. Check the continuity between cooling fan control nodule harness connector and IPDM E/R harness connector.

+		1			
Cooling fan c	control module	IPDM E/R		Continuity	
Connector	Terminal	Connector	Terminal		
E203	2	E17 72		Existed	

3. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7. CHECK COOLING FAN CONTROL MODULE OUTPUT SIGNAL CIRCUIT

- 1. Reconnect all harness connectors disconnected.
- 2. Disconnect cooling fan control module harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between cooling fan control module terminals and ground.

COOLING FAN

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+		
Cooling fan o	control module	_	Voltage
Connector	Terminal		
E301	4	Ground	Rattery voltage
E302	6	Ground	Battery voltage

EC

D

Е

Н

M

Ν

Р

INFOID:0000000011611238

INFOID:0000000011611239

Α

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

8.CHECK COOLING FAN MOTORS -1 AND -2

Check the cooling fan motor. Refer to EC-1197, "Component Inspection (Cooling Fan Motor)".

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace cooling motor. Refer to CO-49, "Exploded View".

Component Inspection (Cooling Fan Motor)

1. CHECK COOLING FAN MOTOR

- 1. Turn ignition switch OFF.
- 2. Disconnect cooling fan control module harness connector.
- Supply cooling fan control module harness connector terminals with battery voltage as per the following, and check operation.

		l module	oling fan contro	Cod
Operation	Terminal		Connector	Motor
	(-)	(+)	Connector	IVIOLOI
Cooling fan operates.	5	4	E301	1
Cooling fair operates.	7	6	E302	2

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning cooling fan motor. Refer to CO-49, "Exploded View".

Component Inspection (Cooling Fan Relay)

1. CHECK COOLING FAN RELAY

- 1. Turn ignition switch OFF.
- Remove cooling fan relay.
- 3. Check the continuity between cooling fan relay terminals under the following conditions.

Cooling fan relay				
+	_	Conditions	Continuity	
Terr	minal			
3	5	12 V direct current supply between terminals 1 and 2	Existed	
		No current supply	Not existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace cooling fan relay.

[MR EXCEPT FOR NISMO RS MODELS]

ELECTRICAL LOAD SIGNAL

Description INFOID:0000000011611240

The electrical load signal (Headlamp switch signal, rear window defogger switch signal, etc.) is transferred via the CAN communication line.

Component Function Check

INFOID:0000000011611241

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

(P)With CONSULT

- 1. Turn ignition switch ON.
- Select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 3. Select "LOAD SIGNAL" and check indication as per the following conditions.

Monitor item	Condition	Indication	
LOAD SIGNAL	Rear window defogger switch	ON ON	
	Treal willdow delogger switch	OFF	OFF

Is the inspection result normal?

YES >> GO TO 2.

NO >> Proceed to EC-1198, "Diagnosis Procedure".

2.check lighting switch function

(P)With CONSULT

Check "LOAD SIGNAL" indication as per the following conditions.

Monitor item	Con	Indication	
LOAD SIGNAL	Lighting switch	ON at 2nd position	ON
		OFF	OFF

Is the inspection result normal?

YES >> GO TO 3.

NO >> Proceed to EC-1198, "Diagnosis Procedure".

3.CHECK HEATER FAN CONTROL SWITCH FUNCTION

(P)With CONSULT

Select "HEATER FAN SW" and check indication as per the following conditions.

Monitor item	Condition	Indication	
HEATER FAN	Heater fan control switch	ON	ON
SW	Treater fair control switch	OFF	OFF

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to <u>EC-1198</u>. "<u>Diagnosis Procedure</u>".

Diagnosis Procedure

INFOID:0000000011611242

1. INSPECTION START

Confirm the malfunctioning circuit (rear window defogger, headlamp or heater fan). Refer to <u>EC-1198</u>, "Component Function Check".

Which circuit is related to the incident?

Rear window defogger>>GO TO 2.

Headlamp>>GO TO 3.

Heater fan>>GO TO 4.

ELECTRICAL LOAD SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

2.CHECK REAR WINDOW DEFOGGER SYSTEM

Check the rear window defogger system. Refer to <u>DEF-18</u>, "Work Flow".

>> INSPECTION END

3. CHECK HEADLAMP SYSTEM

Check the headlamp system. Refer to EXL-46, "Work Flow".

>> INSPECTION END

4. CHECK HEATER FAN CONTROL SYSTEM

Perform trouble diagnosis of air conditioning system. Check type of air conditioning system <u>HA-15</u>, "Work <u>Flow"</u> and refer to the follows.

• HAC-43, "Work Flow"

>> INSPECTION END

EC

D

Е

F

G

Н

ı

Κ

L

M

Ν

0

Р

EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

Component Function Check

INFOID:0000000011611243

${f 1}$.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE FUNCTION

(P)With CONSULT

- Turn ignition switch OFF.
- Disconnect the EVAP purge hose from EVAP canister purge volume control solenoid valve (EVAP canister side).
- 3. Start engine and let it idle.
- Select "PURG VOL CONT/V" in "ACTIVE TEST" mode wit CONSULT.
- Touch "Qu" and "Qd" on CONSULT screen to adjust "PURG VOL CONT/V" and check vacuum existence under the following conditions.

PURG VOL CONT/V	Vacuum
100%	Existed
0 %	Not existed

®Without CONSULT

- Turn ignition switch OFF.
- Disconnect the EVAP purge hose from EVAP canister purge volume control solenoid valve (EVAP canister side).
- 3. Start engine and let it idle for at least 100 seconds.
- 4. Check vacuum existence under the following conditions.

Condition	Vacuum	
At idle	Not existed	
Approx. 2,000 rpm	Existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1200, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611244

1. CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE POWER SUPPLY

- 1. Turn ignition switch OFF.
- Disconnect EVAP canister purge volume control solenoid valve harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between EVAP canister purge volume control solenoid valve harness connector and ground.

-	+		
	purge volume enoid valve	-	Voltage
Connector	Terminal		
F106 1		Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- Check the continuity between EVAP canister purge volume control solenoid valve harness connector and IPDM E/R harness connector.

EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

	+	-	_		
	er purge volume blenoid valve	IPDN	/I E/R	Continuity	
Connector	Terminal	Connector	Terminal		
F106	1	E14	35	Existed	
I. Also che	eck harness fo	r short to g	round.		
	ction result nor				
_	With CONSUL				
	Without CONS Repair or repl			rts	
^	•		•		SOLENOID VALVE GROUND CIRCUIT
	ition switch O		_ VOLONIE		TOTAL VIEW ON
	ect ECM harn		ctor.		
Check the	he continuity b	etween EV		er purge volun	ne control solenoid valve harness connector and
ECM ha	rness connec	tor.			
Γ\/ΛD conicto	+	-	-		
	er purge volume lenoid valve	EC	CM	Continuity	
Connector	Terminal	Connector	Terminal		
F106	2	F24	115	Existed	
1. Also che	eck harness fo	r short to p	ower.		
	tion result no	-			
•	With CONSUI		4.		
	Without CONS				
4	Repair or repl		•		
4.CHECK E	EVAP CANIST	ER PURGI	= VOLUME	CONTROL	SOLENOID VALVE OPERATION
With CON				-1d	
 Reconne Start en 	ect all harness gine	s connector	s disconne	ected.	
		CONT/V" ir	"ACTIVE	TEST" mode	of "ENGINE" using CONSULT.
	hat engine spe		•	•	ening.
	speed vary a				
	Check intermi GO TO 5.	ttent incide	nt. Refer to	GI-44, "Inter	<u>mittent Incident"</u> .
_		ED DUDCI	= \/OLLIME	CONTROL	SOLENOID VALVE
	·		ne control	solenoid valve	e. Refer to EC-1201, "Component Inspection".
•	ction result noi		nt Boforto	CI_44 "Intor	mittent Incident".
					nittent incident. enoid valve. Refer to <u>EM-196, "Exploded View"</u> .
Compone	nt Inspection	on			INFOID:000000011611245
1. CHECK E	EVAP CANIST	ER PURGI	E VOLUME	CONTROL S	SOLENOID VALVE
®With CON					
	ition switch O	FF.			
	ect all harness		s disconne	ected.	

- Reconnect all harness connectors disconnected
- 3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.
- Start engine
- 5. Select "PURG VOL CONT/V" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.

Revision: 2014 October EC-1201 2015 JUKE

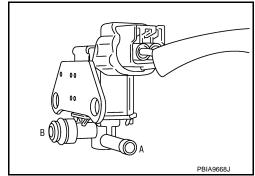
EVAP CANISTER PURGE VOLUME CONTROL SOLENOID VALVE

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

 Touch "Qd" and "Qu" on CONSULT screen to adjust "PURG VOL C/V" opening and check air passage continuity of EVAP canister purge volume control solenoid valve as per the following conditions.

Condition (PURG VOL C/V value)	Air passage continuity between (A) and (B)
100%	Existed
0%	Not existed

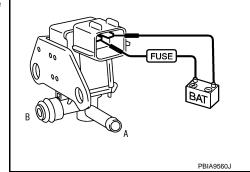


♥Without CONSULT

- 1. Turn ignition switch OFF.
- 2. Disconnect EVAP canister purge volume control solenoid valve harness connector.
- 3. Disconnect EVAP purge hoses connected to EVAP canister purge volume control solenoid valve.

4. Check air passage continuity of EVAP canister purge volume control solenoid valve as per the following conditions.

Condition	Air passage continuity between (A) and (B)
12 V direct current supply between terminals 1 and 2	Existed
No supply	Not existed



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace EVAP canister purge volume control solenoid valve. Refer to EM-196, "Exploded View".

FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

FUEL INJECTOR

Component Function Check

INFOID:0000000011611246

Α

EC

Е

Н

INFOID:0000000011611247

1.INSPECTION START

Turn ignition switch to START.

Is any cylinder ignited?

YES >> GO TO 2.

NO >> Proceed to EC-1203, "Diagnosis Procedure".

2.CHECK FUEL INJECTOR FUNCTION

(P)With CONSULT

- 1. Start engine.
- Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- Check that each circuit produces a momentary engine speed drop.

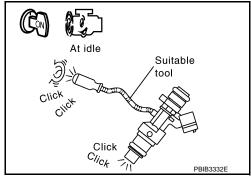
- 1. Let engine idle.
- 2. Listen to each fuel injector operating sound.

Clicking noise should be heard.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1203, "Diagnosis Procedure".



Diagnosis Procedure

1. CHECK FUEL INJECTOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect fuel injector harness connector.
- Turn ignition switch ON.
- Check the voltage between fuel injector harness connector and ground.

	+			
	Fuel injector	_	Voltage	
Cylinder	Connector			
1	F65	1		
2	F66	1	Ground	Rattory voltage
3	F67	1	Giouna	Battery voltage
4	F68	1		

Is the inspection result normal?

YES >> GO TO 9.

NO >> GO TO 2.

2.CHECK FUEL INJECTOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between fuel injector harness connector and ECM harness connector.

K

Ν

Р

	Fuel injector		E	Continuity	
Cylinder	Connector	Terminal	Connector	Terminal	Continuity
1	F65	1		1	
2	F66	1	F23	7	Existed
3	F67	1	123	,	LAISIEU
4	F68	1		1	

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. CHECK FUEL INJECTOR DRIVER POWER SUPPLY

- Reconnect ECM harness connector.
- 2. Turn ignition switch ON.
- 3. Check the voltage between ECM harness connector and ground.

	+		
E	СМ	_	Voltage
Connector	Terminal		
F23	4	Ground	Pottory voltage
F23	5	Ground	Battery voltage

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident"

NO >> GO TO 4.

4. CHECK FUEL INJECTOR DRIVER POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Disconnect fuel injector relay harness connector.
- 4. Check the continuity between ECM harness connector and fuel injector relay harness connector.

E	ECM		Fuel injector relay	
Connector	Terminal	Connector	Terminal	Continuity
F23	4	E57	5	Existed
1 23	5	L37	7	LAISIGU

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts

5. CHECK FUEL INJECTOR RELAY POWER SUPPLY (CONTACT SIDE)

Check the voltage between fuel injector relay harness connector and ground.

	+			
Fuel inje	ctor relay	_	Voltage	
Connector	Terminal			
E57	3	Ground	Battery voltage	
E37	6	Glound	Battery voltage	

Is the inspection result normal?

YES >> GO TO 6.

FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Perform the trouble diagnosis for power supply circuit.

6.CHECK FUEL INJECTOR RELAY POWER SUPPLY (EXCITATION COIL SIDE)

Reconnect all harness connectors disconnected.

- Turn ignition switch ON. 2.

. Check the voltage between fuel injector relay harness connector and ground.						
+						

	+		
Fuel inje	ctor relay	_	Voltage
Connector	Terminal		
E57	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 7.

7.CHECK FUEL INJECTOR RELAY POWER SUPPLY CIRCUIT (EXCITATION COIL SIDE)

- Turn ignition switch OFF.
- Disconnect fuel injector relay harness connector. 2.
- 3. Disconnect IPDM E/R harness connector.
- Check the continuity between IPDM E/R harness connector and fuel injector harness connector.

IPDN	IPDM E/R		Fuel injector relay	
Connector	Terminal	Connector Terminal		Continuity
E14	35	E57	1	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

8.CHECK FUEL INJECTOR RELAY GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect fuel injector relay harness connector. 2.
- Check the continuity between fuel injector relay harness connector and ground.

Fuel injector relay		_	Continuity	
Connector	Terminal	_	Continuity	
E57	2	Ground	Existed	

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace error-detected parts.

9. CHECK FUEL INJECTOR GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between fuel injector harness connector and ECM harness connector.

EC

Α

D

Е

Н

Ν

Р

Fuel injector			E	Continuity	
Cylinder	Connector	Terminal	Connector	Terminal	Continuity
1	F65	2		8	
2	F66	2	F23	2	Existed
3	F67	2	F23	3	Existed
4	F68	2		6	

4. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace error-detected parts.

10. CHECK FUEL INJECTOR RELAY

Check the fuel injector relay. Refer to EC-1206, "Component Inspection (Fuel Injector Relay)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident"

NO >> Replace fuel injector relay.

11. CHECK FUEL INJECTOR

Check the fuel injector. Refer to EC-1206, "Component Inspection (Fuel Injector)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident"

NO >> Replace malfunctioning fuel injector. Refer to EM-207, "Exploded View".

Component Inspection (Fuel Injector)

INFOID:0000000011611248

1. CHECK FUEL INJECTOR

- 1. Turn ignition switch OFF.
- Disconnect fuel injector harness connector.
- 3. Check resistance between fuel injector terminals as per the following.

Fuel injector		
+	-	Resistance
Terminals		
1	2	1.44 - 1.73 Ω [at 10 - 60°C (50 - 140°F)]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning fuel injector. <u>EM-207</u>, "Exploded View"

Component Inspection (Fuel Injector Relay)

INFOID:0000000011611249

1. CHECK FUEL INJECTOR RELAY

- 1. Turn ignition switch OFF.
- Remove fuel injector relay.
- 3. Check the continuity between fuel heater relay terminals as per the following conditions.

+	_			
Fuel injector relay		Conditions	Continuity	
Terr	minal			
3	5	12 V direct current supply between terminals 1 and 2	Existed	
		No current supply	Not existed	

FUEL INJECTOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/C	TC/CIRCUIT DIAGNOSIS > [MR		[MR EXCEPT FOR NISMO RS MODELS]		
+	_				
Fuel i	njector relay	Conditions	Continuity		Α
Т	erminal				
6	7	12 V direct current supply between terminals 1 and 2	Existed		EC
		No current supply	Not existed		
Is the in:	spection resu				С
YES	>> INSPEC	TION END			
NO	>> Replace	fuel injector relay.			D
					D
					Е
					F
					Г
					G
					Н
					- 11
					J
					Ü
					K
					L
					_
					M
					Ν
					IN
					0
					Р
					٢

[MR EXCEPT FOR NISMO RS MODELS]

G SENSOR

Component Function Check

INFOID:0000000011611250

1. CHECK G SENSOR FUNCTION

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector terminals.

	ECM			Valta
Connector	Connector + - Terminal		Condition	Voltage (Approx.)
Connector				
F23	34	13	[Engine is running]Warm-up conditionIdle speed	0 V

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1208, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611251

1. CHECK G SENSOR POWER SUPPLY CIRCUIT-I

- Turn ignition switch OFF.
- 2. Disconnect G sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between G sensor harness connector terminals.

	Maltana		
Connector	+	_	Voltage (Approx.)
Connector	Terminal		(11 -)
B32	3	2	5 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2.CHECK G SENSOR SIGNAL CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Check the continuity between G sensor harness connector and ECM harness connector.

+				
G se	ensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
B32	1	F23	34	Existed

4. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3. CHECK G SENSOR

Check G sensor. Refer to EC-1209, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> 1. Replace G sensor.

[MR EXCEPT FOR NISMO RS MODELS]

Perform calibration of G sensor.

CHECK G SENSOR POWER SUPPLY CIRCUIT-II

Check the voltage between G sensor harness connector terminal and ground.

+			V 16	
G sensor		_	Voltage (Approx.)	
Connector	Terminal		, , ,	
B32	3	Ground	5 V	

Is the inspection result normal?

>> GO TO 5. YES

NO >> GO TO 7.

5.CHECK G SENSOR GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between G sensor harness connector and ECM harness connector.

+			_	
G se	ensor	ECM		Continuity
Connector	Terminal	Connector	Terminal	
B32	2	F23	13	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace error-detected parts.

6.CHECK ECM GROUND CIRCUIT

Check the continuity between ECM harness connector and ground.

ECM		Ground	Continuity	
Connector	Terminal	Glound	Continuity	
	9			
F23	10		Existed	
	50	Ground		
F24	60			
1 24	110			
	147			
E19	149			
	152			

Is the inspection result normal?

>> Check intermittent incident. Refer to GI-44, "Intermittent Incident". YES

NO >> Repair or replace error-detected parts.

7.CHECK SENSOR POWER SUPPLY 2 CIRCUIT

Perform EC-1239, "Diagnosis Procedure".

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit. YES

>> Repair or replace error-detected parts. NO

Component Inspection

1.CHECK G SENSOR

EC-1209 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Ν

Р

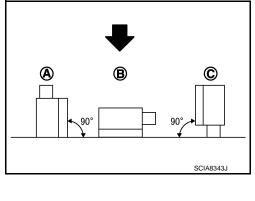
INFOID:0000000011611252

< DTC/CIRCUIT DIAGNOSIS >

(E)With CONSULT

- 1. Remove G sensor.
- 2. Reconnect all harness connectors disconnected.
- 3. Place the G sensor on a flat table.
- 4. Turn ignition switch ON.
- Select "G SENSOR" in "DATA MONITOR" mode of "ENGINE" using CONSULT to check indications according to the following conditions:
 - : Direction of gravitational force

Monitor item	Condition	Value (V)
	Parallel with the table (0G) (B)	2.18 – 2.82
G SENSOR	Vertical to the table (-1G) (A) ↓ Parallel with the table (0G) (B) ↓ Vertical to the table (1G) (C)	0.85 – 1.49* ↓ 2.18 – 2.82* ↓ 3.51 – 4.15*

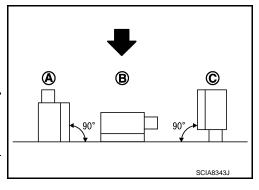


^{*:} Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

♥Without CONSULT

- 1. Remove G sensor.
- 2. Reconnect all harness connectors disconnected.
- 3. Place the G sensor on a flat table.
- 4. Turn ignition switch ON.
- 5. Check the voltage between ECM harness connector terminal and ground.
 - : Direction of gravitational force

+ ECM Connector Terminal		_	Condition	Voltage (V)
			Parallel with the table (0G) (B)	2.18 – 2.82
F23	34	Ground	Vertical to the table (-1G) (A) ↓ Parallel with the table (0G) (B) ↓ Vertical to the table (1G) (C)	0.85 - 1.49* ↓ 2.18 - 2.82* ↓ 3.51 - 4.15*



Is the inspection result normal?

YES >> INSPECTION END NO >> Replace G sensor.

^{*:} Check that voltage rises as the G sensor measurement condition changes in the order of (A), (B), and (C).

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

HIGH PRESSURE FUEL PUMP

Component Function Check

INFOID:0000000011611253

Α

EC

D

Е

F

1. CHECK HIGH PRESSURE FUEL PUMP FUNCTION

®With CONSULT

- Start engine.
- 2. Check "FUEL PRES SEN V" in "DATA MONITOR" mode of "ENGINE" using CONSULT.

Monitor Item	Condition	Values/Status
FUEL PRES SEN V	Engine speed: Idle	
	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

Without CONSULT

- 1. Start engine.
- 2. Check the voltage between ECM harness connector terminals as per the following conditions.

	ECM			
Connector	+	_	Condition	Voltage
Connector	Connector Terminal			
F23	48	49	[Engine is running] • Warm-up condition • Idle speed NOTE: The pulse cycle changes depending on rpm at idle	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div 5V/div JPBIA4722ZZ
	·		[Engine is running]Warm-up conditionEngine speed: 2,000 rpm	BATTERY VOLTAGE (11 - 14 V) ★ 20mSec/div 5V/div JPBIA4723ZZ

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1211, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611254

Ν

0

Ρ

1. CHECK HIGH PRESSURE FUEL PUMP POWER SUPPLY

- 1. Turn ignition switch ON.
- 2. Check the voltage between ECM harness connector and ground.

+				
ECM		_	Voltage	
Connector	Terminal			
F24	47	Ground	Battery voltage	

Is inspection result normal?

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

YES >> GO TO 8. NO >> GO TO 2.

2.CHECK HIGH PRESSURE FUEL PUMP POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Disconnect fuel injector relay harness connector.
- Check the continuity between ECM harness connector and high pressure fuel pump relay harness connector.

+		_		
E	СМ	High pressure fuel pump re- lay		Continuity
Connector	Terminal	Connector	Terminal	
F24	47	E58	3	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts

3.CHECK HIGH PRESSURE FUEL PUMP RELAY POWER SUPPLY (CONTACT SIDE)

Check the voltage between high pressure fuel pump relay harness connector and ground.

	+		
High pressure	fuel pump relay	_	Voltage
Connector	Connector Terminal		
E58	5	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 4.

NO >> Perform the trouble diagnosis for power supply circuit.

4. CHECK HIGH PRESSURE FUEL PUMP RELAY POWER SUPPLY (EXCITATION COIL SIDE)

- 1. Reconnect all harness connectors disconnected.
- 2. Turn ignition switch ON.
- 3. Check the voltage between high pressure fuel pump relay harness connector and ground.

_				
		+		
	High pressure	fuel pump relay	_	Voltage
	Connector Terminal			
	E58	2	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.

NO >> GO TO 5

${f 5.}$ CHECK HIGH PRESSURE FUEL PUMP RELAY POWER SUPPLY CIRCUIT (EXCITATION COIL SIDE)

- 1. Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump relay harness connector.
- 3. Disconnect IPDM E/R harness connector.
- check the continuity between IPDM E/R harness connector and high pressure fuel pump harness connector.

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+				
IPDN	M E/R	High pressure fuel pump re- lay		Continuity
Connector	Terminal	Connector	Terminal	
E14	35	E58	2	Existed

5. Also check harness for short to ground.

Is the inspection result normal?

>> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

6.CHECK HIGH PRESSURE FUEL PUMP RELAY GROUND CIRCUIT

- Turn ignition switch OFF.
- Disconnect high pressure fuel pump relay harness connector. 2.
- Check the continuity between high pressure fuel pump relay harness connector and ground.

	+		
High pressure	fuel pump relay	_	Continuity
Connector	Terminal		
E58	1	Ground	Existed

Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK HIGH PRESSURE FUEL PUMP RELAY

Check the high pressure fuel pump relay. Refer to EC-1215, "Component Inspection (High Pressure Fuel Pump Relay)".

Is inspection result normal?

YES >> GO TO 8.

NO >> Replace high pressure fuel pump relay.

8.CHECK HIGH PRESSURE FUEL PUMP CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector and high pressure fuel pump harness connector.
- Check the continuity between ECM harness connector and high pressure fuel pump harness connector.

+				
E	СМ	High pressure fuel pump		Continuity
Connector	Terminal	Connector	Terminal	
F24	48	F53	1	Existed
1 24	49	1 33	2	LXISIEU

Also check harness for short to ground and to power.

Is inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace error-detected parts.

$\mathbf{9}.$ CHECK HIGH PRESSURE FUEL PUMP

Check the high pressure fuel pump. Refer to EC-1214, "Component Inspection (High Pressure Fuel Pump)". Is inspection result normal?

YES >> GO TO 10.

>> Replace high pressure fuel pump. Refer to EM-202, "Exploded View". NO

EC-1213 Revision: 2014 October 2015 JUKE

EC

Α

Е

K

N

Р

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

10.check high pressure fuel pump installation condition

- 1. Turn ignition switch OFF.
- 2. Check that the high pressure fuel pump is installed with no backlash and looseness.

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace error-detected parts.

11. CHECK CAMSHAFT

- Remove camshaft. Refer to <u>EM-259</u>, "<u>Exploded View</u>".
- 2. Check camshaft. Refer to EM-263, "Inspection".

Is inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace camshaft. Refer to EM-259, "Exploded View".

Component Inspection (High Pressure Fuel Pump)

INFOID:0000000011611255

1. CHECK HIGH PRESSURE FUEL PUMP-I

- 1. Turn ignition switch OFF.
- 2. Disconnect high pressure fuel pump harness connector.
- Check the resistance between high pressure fuel pump terminals as follows.

High pressu	ire fuel pump			
+	-	Condi	Resistance	
Terr	minal			
1	2	Temperature °C (°F)	20 – 30 (68 - 86)	0.46 - 0.51 Ω

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace high pressure fuel pump. Refer to EM-202, "Exploded View".

2.CHECK HIGH PRESSURE FUEL PUMP-II

(P)With CONSULT

- 1. Reconnect high pressure fuel pump harness connector.
- Start the engine.
- Check "FUEL PRES SEN" in "DATA MONITOR" of "ENGINE" using CONSULT.

Data monitor item	Condition	Voltage (Approx.)
FUEL PRES SEN V	Engine speed: idle	1,140 – 1,460 mV
I OLL I INEO OLIN V	Engine speed: Revving engine from idle to 4,000 rpm quickly	1,300 – 2,900 mV

- 1. Start the engine.
- 2. Check fuel rail pressure sensor signal voltage.

+ Fuel rail pressure sensor				Value (Approx.)
		_	Condition	
Connector	Terminal			(11 - /
			Engine speed: idle	1.14 – 1.46 V
F7	2	Ground	Engine speed: Revving engine from idle to 4,000 rpm quickly	1.3 – 2.9 V

Is the inspection result normal?

YES >> INSPECTION END

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

>> Replace high pressure fuel pump. Refer to EM-202, "Exploded View". NO

Component Inspection (High Pressure Fuel Pump Relay)

INFOID:0000000011611256

1. CHECK HIGH PRESSURE FUEL PUMP RELAY

- 1. Turn ignition switch OFF.
- Remove high pressure fuel pump relay. 2.
- Check the continuity between high pressure fuel pump relay terminals as per the following conditions.

+	_			
High pressure fuel pump relay		Conditions	Continuity	
Terminal				
3	5	12 V direct current supply between terminals 1 and 2	Existed	
		No current supply	Not existed	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace high pressure fuel pump relay. EC

Α

C

D

Е

F

Н

K

L

M

Ν

0

Р

HO2S2

Component Function Check

INFOID:0000000011611257

1.PERFORM COMPONENT FUNCTION CHECK-I

- 1. Start engine and warm it up to normal operating temperature.
- 2. Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	Connector + -		Condition	Voltage
Connector	Terminal			
F24	84	78	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.68 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	_	Condition	Voltage
Connector	Terminal			
F24	84	78	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.68 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3.PERFORM COMPONENT FUNCTION CHECK-III

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM				
Connector	+	-	Condition Voltage	Voltage	
Connector	Terr	minal			
F24	84	78	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.68 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1216, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611258

1. CHECK HO2S2 GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
- 3. Disconnect ECM harness connector.
- 4. Check the continuity between HO2S2 harness connector and ECM harness connector.

Α

EC

D

Е

Н

Ν

+		_		
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	1	F24	78	Existed

5. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace error-detected parts.

2.CHECK HO2S2 INPUT SIGNAL CIRCUIT

1. Check the continuity between HO2S2 harness connector and ECM harness connector.

+				
HO2S2		ECM		Continuity
Connector	Terminal	Connector	Terminal	
F71	2	F24	84	Existed

Check the continuity between HO2S2 harness connector and ground, or ECM harness connector and ground.

	+		
НО	2S2	_	Continuity
Connector	Terminal		
F71	2	Ground	Not existed

	+		
E	СМ	_	Continuity
Connector	Terminal		
F24	84	Ground	Not existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace error-detected parts.

3.CHECK HEATED OXYGEN SENSOR 2

Check the heated oxygen sensor 2. Refer to EC-1218, "Component Inspection".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> GO TO 4.

4. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2.

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

Component Inspection

INFOID:0000000011611259

1.INSPECTION START

Do you have CONSULT?

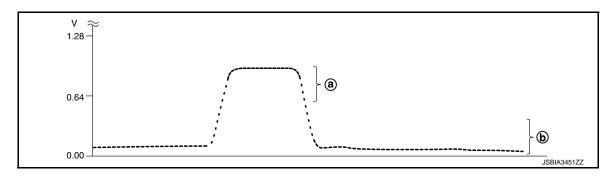
Do you have CONSULT?

YES >> GO TO 2. NO >> GO TO 3.

2.CHECK HEATED OXYGEN SENSOR 2

(P)With CONSULT

- Turn ignition switch ON and select "DATA MONITOR" mode of "ENGINE" using CONSULT.
- 2. Start engine and warm it up to normal operating temperature.
- 3. Turn ignition switch OFF and wait at least 10 seconds.
- 4. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 5. Let engine idle for 1 minute.
- 6. Select "FUEL INJECTION" in "ACTIVE TEST" mode of "ENGINE" using CONSULT, and select "HO2S2 (B1)" as the monitor item with CONSULT.
- 7. Check "HO2S2 (B1)" at idle speed when adjusting "FUEL INJECTION" to \pm 25%.



- (a) : The voltage should be above 0.72 V at least on time.
- (b) : The voltage should be below 0.28 V at least on time.

"HO2S2 (B1)" should be above 0.72 V at least once when the "FUEL INJECTION" is + 25%. "HO2S2 (B1)" should be below 0.28 V at least once when the "FUEL INJECTION" is – 25%.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

3.CHECK HEATED OXYGEN SENSOR 2-I

NWithout CONSULT

- 1. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

ECM				
Connector	+	_	Condition	Voltage
Connector	Terr	ninal		
F24	84	78	Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 4.

[MR EXCEPT FOR NISMO RS MODELS]

4. CHECK HEATED OXYGEN SENSOR 2-II

Check the voltage between ECM harness connector and ground as per the following condition.

ECM					
Connector	+	_	Condition	Voltage	
Connector	Terminal				
F24	84	78	Keeping engine speed at idle for 10 minutes	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 5.

5. CHECK HEATED OXYGEN SENSOR 2-III

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM			
Connector	+	-	Condition Voltage	
Connector	Terr	minal		
F24	84	78	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.72 V at least once during this procedure. The voltage should be below 0.28 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 6.

6. REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to <u>EX-5, "Exploded View"</u>.

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

O

L

M

Ν

Α

EC

D

Е

F

Н

Р

HO2S2 HEATER

Component Function Check

INFOID:0000000011611260

1. PERFORM COMPONENT FUNCTION CHECK-I

- 1. Start engine and warm it up to normal operating temperature.
- Turn ignition switch OFF and wait at least 10 seconds.
- 3. Start engine and keep the engine speed between 3,500 and 4,000 rpm for at least 1 minute under no load.
- 4. Let engine idle for 1 minute.
- 5. Check the voltage between ECM harness connector and ground as per the following condition.

	ECM			
Connector	+	_	Condition Voltage	
Terminal				
F71	84 78		Revving up to 4,000 rpm under no load at least 10 times	The voltage should be above 0.68 V at least once during this procedure.

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.PERFORM COMPONENT FUNCTION CHECK-II

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM				
Connector	+	-	Condition	Voltage	
Connector	Terminal				
F71	84 78		Keeping engine speed at idle for 10 minutes	The voltage should be above 0.68 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 3.

3.perform component function check-iii

Check the voltage between ECM harness connector and ground as per the following condition.

	ECM				
Connector	+	_	Condition	Voltage	
Connector	Terminal				
F71	84	78	Coasting from 80 km/h (50 MPH) in D position (CVT), 4th gear position (M/T)	The voltage should be above 0.68 V at least once during this procedure.	

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1220, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611261

1. CHECK HO2S2 POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between HO2S2 harness connector and ground.

HO2S2 HEATER

[MR EXCEPT FOR NISMO RS MODELS]

INFOID:0000000011611262

0

< DTC/CIRCUIT DIAGNOSIS >

< DTC/CIRC	JUIT DIAGI	NOSIS >			
	+				
	HO2S2		-	Voltage	r
Connector	Termi	inal			
F71	4	G	Ground Battery voltage		
Is the inspec	tion result n	ormal?		_	
	GO TO 2.				
_	•	place error-o	•		
		PUT SIGNA	L CIRCUI	<u> </u>	
	ition switch	OFF. Irness conne	ctor		
				ess connector	and ECM harness connector.
	•				
4	+		_		
HO	2S2	E	СМ	Continuity	
Connector	Terminal	Connector	Terminal		
F71	3	F24	117	Existed	
		`	ground and	d short to power	
s the inspec		iormal?			
	GO TO 3. Repair or re	place error-c	detected pa	arts.	
_	•	YGEN SEN	-		
					"Component Inspection".
s the inspec			ioator. I tor	0. to <u>LO 1221,</u>	<u>Component moposterr</u> .
•			ent. Refer t	to <u>GI-44, "Intern</u>	nittent Incident".
4	GO TO 4.				
4.REPLACI	E HEATED	OXYGEN SE	ENSOR 2		
	ted oxygen	sensor 2. Re	efer to <u>EX</u> -	5, "Exploded Vi	<u>ew"</u> .
CAUTION: Discard a	nv sensor v	which has b	een drop	ned from a hei	ght of more than 0.5 m (19.7 in) onto a hard
surface su	ich as a co	ncrete floor	; use a ne	w one.	
					eads using Oxygen Sensor Thread Cleaner approved Anti-seize Lubricant (commercial
service to		1001 (0-4308	77-10 UI J	+3031-12)] allu	approved Anti-Seize Eubricant (confinercial
	•				
>>	NSPECTIO	N END			

Component Inspection

${\bf 1.}{\sf CHECK}\,{\sf HEATED}\,{\sf OXYGEN}\,{\sf SENSOR}\,{\sf 2}\,{\sf HEATER}$

- Turn ignition switch OFF.
- Disconnect heated oxygen sensor 2 (HO2S2) harness connector.
 Check resistance between HO2S2 terminals as per the following.

+	_	
Heated oxy	gen sensor 2	Resistance
Terr	minal	
4	3	3.3 - 4.4 Ω [at 25°C (77°F)]

HO2S2 HEATER

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+	_	
Heated oxygen sensor 2		Resistance
Terminal		
1	2	
	3	
	4	$\infty \Omega$
2	1	(Continuity should not exist)
	4	
	3	

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.REPLACE HEATED OXYGEN SENSOR 2

Replace heated oxygen sensor 2. Refer to EX-5, "Exploded View".

CAUTION:

- Discard any sensor which has been dropped from a height of more than 0.5 m (19.7 in) onto a hard surface such as a concrete floor; use a new one.
- Before installing new sensor, clean exhaust system threads using Oxygen Sensor Thread Cleaner [commercial service tool (J-43897-18 or J43897-12)] and approved Anti-seize Lubricant (commercial service tool).

>> INSPECTION END

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

Component Function Check

INFOID:0000000011735094

Α

EC

D

Е

F

1. CHECK ORVR FUNCTION

Check whether the following symptoms are present.

- Fuel odor from EVAP canister is strong.
- Cannot refuel/Fuel odor from the fuel filler opening is strong while refueling.

Is any symptom present?

YES >> Proceed to EC-1223, "Diagnosis Procedure".

NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000011735095

1. INSPECTION START

Check whether the following symptoms are present.

A: Fuel odor from EVAP canister is strong.

B: Cannot refuel/Fuel odor from the fuel filler opening is strong while refueling.

Which symptom is present?

A >> GO TO 2.

B >> GO TO 8.

2. CHECK EVAP CANISTER

- Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
- Weigh the EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

3.CHECK IF EVAP CANISTER IS SATURATED WITH WATER

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 4.

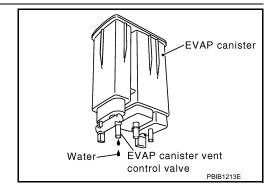
J

Check if water will drain from EVAP canister.

Does water drain from the EVAP canister?

YES >> GO TO 4.

NO >> GO TO 7.



4. REPLACE EVAP CANISTER

Replace EVAP canister with a new one.

>> GO TO 5.

5. CHECK DRAIN FILTER

Refer to EC-1227, "Component Inspection (Drain filter)".

Is the inspection result normal?

OK >> GO TO 6.

NO >> Replace drain filter.

6. DETECT MALFUNCTIONING PART

K

M

IVI

Ν

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Check the EVAP hose between EVAP canister and vehicle frame for clogging or poor connection.

>> Repair or replace EVAP hose.

7. CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to EC-1225, "Component Inspection (Refueling EVAP vapor cut valve)".

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace refueling EVAP vapor cut valve with fuel tank.

8. CHECK EVAP CANISTER

- 1. Remove EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.
- 2. Weigh the EVAP canister with EVAP canister vent control valve and EVAP control system pressure sensor attached.

The weight should be less than 1.9 kg (4.2 lb).

Is the inspection result normal?

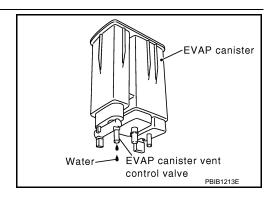
YES >> GO TO 9. NO >> GO TO 10.

9. CHECK IF EVAP CANISTER IS SATURATED WITH WATER

Check if water will drain from EVAP canister.

Does water drain from the EVAP canister?

YES >> GO TO 10. NO >> GO TO 13.



10. REPLACE EVAP CANISTER

Replace EVAP canister with a new one.

>> GO TO 11.

11. CHECK DRAIN FILTER

Refer to EC-1227, "Component Inspection (Drain filter)".

Is the inspection result normal?

OK >> GO TO 12.

NO >> Replace drain filter.

12. DETECT MALFUNCTIONING PART

Check the EVAP hose between EVAP canister and vehicle frame for clogging or poor connection.

>> Repair or replace EVAP hose.

13. CHECK VENT HOSES AND VENT TUBES

Check hoses and tubes between EVAP canister and refueling control valve for clogging, kink, looseness and improper connection.

Is the inspection result normal?

YES >> GO TO 14.

NO >> Repair or replace hoses and tubes.

14. CHECK RECIRCULATION LINE

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

Check recirculation line for clogging, dents and cracks.

Is the inspection result normal?

YES >> GO TO 15.

NO >> Replace fuel filler tube.

15. CHECK REFUELING EVAP VAPOR CUT VALVE

Refer to EC-1225, "Component Inspection (Refueling EVAP vapor cut valve)".

Is the inspection result normal?

YES >> GO TO 16.

NO >> Replace refueling EVAP vapor cut valve with fuel tank.

16. CHECK FUEL FILLER TUBE

Check fuel filler tube and hose connected to the fuel tank for clogging, dents and cracks.

Is the inspection result normal?

YES >> GO TO 17.

NO >> Replace fuel filler tube.

17.CHECK ONE-WAY FUEL VALVE-I

Check one-way valve for clogging.

Is the inspection result normal?

YES >> GO TO 18.

NO >> Repair or replace one-way fuel valve with fuel tank.

18. CHECK ONE-WAY FUEL VALVE-II

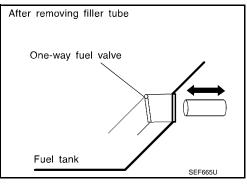
- Make sure that fuel is drained from the tank.
- Remove fuel filler tube and hose.
- Check one-way fuel valve for operation as per the following. When a stick is inserted, the valve should open, when removing stick it should close.

Do not drop any material into the tank.

Is the inspection result normal?

YES >> INSPECTION END

> >> Replace fuel filler tube or replace one-way fuel valve with fuel tank.



Component Inspection (Refueling EVAP vapor cut valve)

1.INSPECTION START

NO

Do you have CONSULT?

Do you have CONSULT?

YES >> GO TO 2.

NO >> GO TO 3.

2.CHECK REFUELING EVAP VAPOR CUT VALVE

With CONSULT

- 1. Remove fuel tank. Refer to FL-17, "2WD: Removal and Installation".
- 2. Drain fuel from the tank as per the following:
- Remove fuel feed hose located on the fuel gauge retainer.
- Connect a spare fuel hose, one side to fuel gauge retainer where the hose was removed and the other side to a fuel container.
- Drain fuel using "FUEL PUMP RELAY" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 3. Check refueling EVAP vapor cut valve for being stuck to close as per the following. Blow air into the refueling EVAP vapor cut valve (from the end of EVAP/ORVR line hose), and check that the air flows freely into the tank.
- Check refueling EVAP vapor cut valve for being stuck to open as per the following.

INFOID:0000000011735096

M

N

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

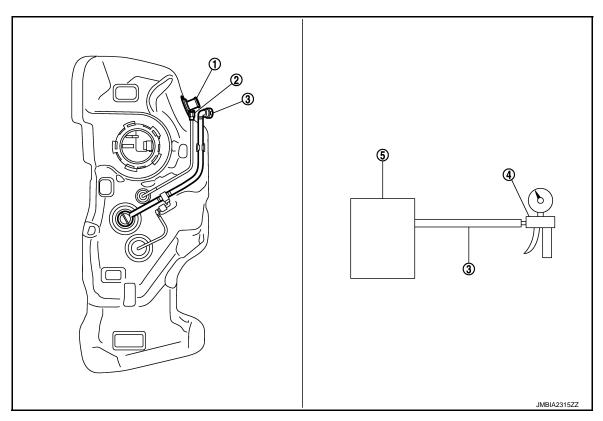
< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

- Connect vacuum pump to hose end.
- Remove fuel gauge retainer with fuel gauge unit.

Always replace O-ring with new one.

- Put fuel tank upside down.
- Apply vacuum pressure to hose end [-13.3 kPa (-0.136 kg/cm³, -1.93 psi)] with fuel gauge retainer remaining open and check that the pressure is applicable.



1. Filler tube

- 2. Recirculation line
- 3. EVAP/ORVR line

- 4. Vacuum/pressure handy pump
- 5. Fuel tank

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace refueling EVAP vapor cut valve with fuel tank. Refer to FL-26, "2WD : Exploded View".

3.CHECK REFUELING EVAP VAPOR CUT VALVE

- 1. Remove fuel tank. Refer to FL-17, "2WD: Exploded View".
- 2. Drain fuel from the tank as per the following:
- Remove fuel gauge retainer.
- Drain fuel from the tank using a handy pump into a fuel container.
- Check refueling EVAP vapor cut valve for being stuck to close as per the following.
 Blow air into the refueling EVAP vapor cut valve (from the end of EVAP/ORVR line hose), and check that the air flows freely into the tank.
- 4. Check refueling EVAP vapor cut valve for being stuck to open as per the following.
- Connect vacuum pump to hose end.
- Remove fuel gauge retainer with fuel gauge unit.

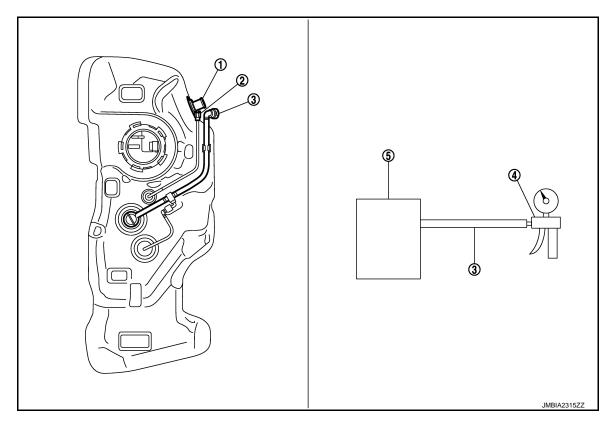
Always replace O-ring with new one.

- Put fuel tank upside down.
- Apply vacuum pressure to hose end [-13.3 kPa (-0.136 kg/cm³, -1.93 psi)] with fuel gauge retainer remaining open and check that the pressure is applicable.

ON BOARD REFUELING VAPOR RECOVERY (ORVR)

[MR EXCEPT FOR NISMO RS MODELS]

< DTC/CIRCUIT DIAGNOSIS >



- Filler tube
- 4. Vacuum/pressure handy pump
- 2. Recirculation line
- 5. Fuel tank

EVAP/ORVR line

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace refueling EVAP vapor cut valve with fuel tank .Refer to FL-26, "2WD : Exploded View".

Component Inspection (Drain filter)

INFOID:0000000011735097

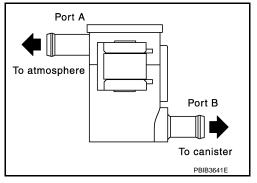
1. CHECK DRAIN FILTER

- 1. Check visually for insect nests in the drain filter air inlet.
- 2. Check visually for cracks or flaws in the appearance.
- 3. Check visually for cracks or flaws in the hose.
- 4. Blow air into port A and check that it flows freely out of port B.
- Block port B.
- 6. Blow air into port A and check that there is no leakage.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace drain filter.



Α

EC

0

D

Е

F

G

Н

K

M

Ν

0

IGNITION SIGNAL

Component Function Check

INFOID:0000000011611263

1. INSPECTION START

Turn ignition switch OFF, and restart engine.

Does the engine start?

YES >> GO TO 2.

NO >> Proceed to <u>EC-1228</u>, "<u>Diagnosis Procedure</u>".

2.ignition signal function

(E)With CONSULT

- 1. Perform "POWER BALANCE" in "ACTIVE TEST" mode of "ENGINE" using CONSULT.
- 2. Check that each circuit produces a momentary engine speed drop.

⋈Without CONSULT

- 1. Let engine idle.
- 2. Check the voltage signal between ECM harness connector and ground with an oscilloscope.

	E			
	+ -		Voltage signal	
Connector	Terminal	Connector	Terminal	
	96			
	95	E19		100mSec/div
F0.4	104		450	
F24			152	
	101			
				2V/div JPBIA4733ZZ

NOTE:

The pulse cycle changes depending on rpm at idle.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1228, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611264

1. CHECK CONDENSER POWER SUPPLY

- 1. Turn ignition switch OFF.
- 2. Disconnect condenser harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between condenser harness connector and ground.

	+		
Cond	lenser	_	Voltage
Connector	Terminal		
F13	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. CHECK CONDENSER POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- 3. Check the continuity between IPDM E/R harness connector and condenser harness connector.

IGNITION SIGNAL

[MR EXCEPT FOR NISMO RS MODELS]

Α

EC

D

Е

Ν

Р

< DTC/CIRCUIT DIAGNOSIS >

+		_		
IPDN	M E/R	Cond	denser	Continuity
Connector	Terminal	Connector	Terminal	
E15	61	F13	1	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.check condenser ground circuit

1. Turn ignition switch OFF.

2. Check the continuity between Condenser harness connector and ground.

	+		
Conc	lenser	_	Continuity
Connector	Terminal		
F13	2	Ground	Existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK CONDENSER

Check the condenser. refer to EC-1231, "Component Inspection (Condenser)".

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace condenser.

5.CHECK IGNITION COIL POWER SUPPLY

- 1. Reconnect all harness connectors disconnected.
- 2. Disconnect ignition coil harness connector.
- Turn ignition switch ON.
- 4. Check the voltage between ignition coil harness connector and ground.

	+			
	Ignition coil		_	Voltage
Cylinder	Connector	Terminal		
1	F33	3		
2	F34	3	Ground	Rattory voltage
3	F35	3	Giouna	Battery voltage
4	F36	3		

Is the inspection result normal?

YES >> GO TO 6.

NO >> Perform the trouble diagnosis for power supply circuit.

6. CHECK IGNITION COIL GROUND CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Check the continuity between ignition coil harness connector and ground.

	+			
	Ignition coil			Continuity
Cylinder	Connector	Terminal		
1	F33	2		
2	F34	2	Ground	Existed
3	F35	2	Giouna	Existed
4	F36	2		

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace error-detected parts.

7.CHECK IGNITION COIL OUTPUT SIGNAL CIRCUIT

- 1. Disconnect ECM harness connector.
- 2. Check the continuity between ECM harness connector and ignition coil harness connector.

+			_		
Ignition coil		ECM		Continuity	
Cylinder	Connector	Terminal	Connector	Terminal	
1	F33	1		96	
2	F34	1	F24	95	Existed
3	F35	1	124	104	LAISIEU
4	F36	1		101	

3. Also check harness for short to ground and short to power.

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace error-detected parts.

8.CHECK IGNITION COIL WITH POWER TRANSISTOR

Check the ignition coil with power transistor. Refer to <u>EC-1230</u>, "Component Inspection (Ignition Coil with <u>Power Transistor</u>)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

NO >> Replace malfunctioning ignition coil with power transistor. Refer to EM-213, "Exploded View".

Component Inspection (Ignition Coil with Power Transistor)

INFOID:0000000011611265

1. CHECK IGNITION COIL WITH POWER TRANSISTOR-I

- 1. Turn ignition switch OFF.
- Disconnect ignition coil harness connector.
- 3. Check resistance between ignition coil terminals as per the following.

Ignition coil with	power transistor		
+ -		Resistance [Ω at 25°C (77°F)]	
Terr	ninal		
1	2	Except 0 or ∞	
'	3	Except 0	
2	3	Εχτέρι σ	

Is the inspection result normal?

YES >> GO TO 2.

[MR EXCEPT FOR NISMO RS MODELS]

NO >> Replace malfunctioning ignition coil with power transistor. Refer to EM-213, "Exploded View".

2.CHECK IGNITION COIL WITH POWER TRANSISTOR-II

CAUTION:

Do the following procedure in the place where ventilation is good without the combustible.

- 1. Turn ignition switch OFF.
- Reconnect all harness connectors disconnected.
- 3. Remove fuel pump fuse in IPDM E/R to release fuel pressure.

NOTE:

Do not use CONSULT to release fuel pressure, or fuel pressure applies again during the following procedure.

- 4. Start engine.
- 5. After engine stalls, crank it two or three times to release all fuel pressure.
- 6. Turn ignition switch OFF.
- Remove all ignition coil harness connectors to avoid the electrical discharge from the ignition coils. Refer to <u>EM-213</u>, "<u>Exploded View</u>".
- 8. Remove ignition coil and spark plug of the cylinder to be checked. Refer to EM-213. "Exploded View".
- 9. Crank engine for 5 seconds or more to remove combustion gas in the cylinder.
- 10. Connect spark plug and harness connector to ignition coil.
- 11. Fix ignition coil using a rope etc. with gap of 13 17 mm (0.52 0.66 in) between the edge of the spark plug and grounded metal portion as shown in the figure.
- 12. Crank engine for about three seconds, and check whether spark is generated between the spark plug and the grounded metal portion.



CAUTION:

- During the operation, always stay 0.5 cm (19.7 in) away from the spark plug and the ignition coil. Be careful not to get an electrical shock while checking, because the electrical discharge voltage becomes 20 kV or more.
- It might cause to damage the ignition coil if the gap of more than 17 mm (0.66 in) is taken. NOTE:

When the gap is less than 13 mm (0.52 in), the spark might be generated even if the coil is malfunctioning.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace malfunctioning ignition coil with power transistor. Refer to EM-213. "Exploded View".

EC-1231

Component Inspection (Condenser)

1. CHECK CONDENSER

- 1. Turn ignition switch OFF.
- Disconnect condenser harness connector.
- 3. Check resistance between condenser terminals as per the following.

Cond	lenser	
+	_	Resistance
Terr	minal	
1	2	Above 1 MΩ [at 25°C (77°F)]

Is the inspection result normal?

YES >> INSPECTION END NO >> Replace Condenser.

13 - 17 mm (0.52-0.66 in) Grounded metal portion (Cylinder head, cylinder block, etc.)

JMBIA006

Α

EC

D

Е

F

INFOID:0000000011611266

2015 JUKE

O

K

M

N

INFORMATION DISPLAY (ASCD)

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

INFORMATION DISPLAY (ASCD)

Component Function Check

INFOID:0000000011611267

1. CHECK INFORMATION DISPLAY

- Start engine.
- 2. Press ASCD MAIN switch on ASCD steering switch.
- 3. Drive the vehicle at more than 40 km/h (25 MPH).

CAUTION:

Always drive vehicle at a safe speed.

- 4. Press COAST/SET switch.
- 5. Check that the reading of the speedometer shows the same value as the set speed indicated in the information display while driving the vehicle on a flat road.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1232, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611268

1.CHECK DTC

Check that DTC UXXXX, P0500 or P1574 is not displayed.

Is the inspection result normal?

YES >> GO TO 2.

NO-1 >> Perform trouble diagnosis for DTC UXXXX.

NO-2 >> Perform trouble diagnosis for DTC P0500. Refer to <u>EC-1018, "EXCEPT FOR M/T MODELS : DTC Logic".</u>

NO-3 >> Perform trouble diagnosis for DTC P1574. Refer to <u>EC-1110, "DTC Logic"</u>.

2. CHECK DTC WITH COMBINATION METER

Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Perform trouble diagnosis for DTC indicated.

3.CHECK INTERMITTENT INCIDENT

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-60, "Removal and Installation".

NO >> Repair or replace error-detected parts.

LOW PRESSURE FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

LOW PRESSURE FUEL PUMP

Component Function Check

INFOID:0000000011611275

1. CHECK FUEL PUMP FUNCTION

- Turn ignition switch ON.
- Pinch fuel feed hose with two fingers.

NOTE:

Fuel pressure pulsation should be felt on the fuel feed hose for 1 second after ignition switch is turned ON.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1233, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611276

1. CHECK FUEL PUMP RELAY POWER SUPPLY

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between ECM harness connector terminals.

ECM				
Connector	+	Connector	-	Voltage
Connector	Terminal	Connector	Terminal	
F24	82	E19	152	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK FUEL PUMP RELAY POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R harness connector.
- Check the continuity between ECM harness connector and IPDM E/R harness connector.

+				
ECM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F24	82	E13	31	Existed

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK LOW FUEL PUMP POWER SUPPLY

- Turn ignition switch OFF.
- Reconnect ECM harness connector.
- Disconnect fuel level sensor unit harness connector.
- Turn ignition switch ON.
- 5. Check the voltage between fuel level sensor unit harness connector and ground.

EC-1233 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

Ν

< DTC/CIRCUIT DIAGNOSIS >

	+		
Fuel level	sensor unit	-	Voltage
Connector	Terminal		
B46	1	Ground	Battery voltage should for exist 1 second after ignition switch is turn ON.

Is the inspection result normal?

YES >> GO TO 5. NO >> GO TO 4.

4. CHECK LOW FUEL PUMP POWER SUPPLY CIRCUIT

- 1. Turn ignition switch OFF.
- 2. Disconnect IPDM E/R harness connector.
- 3. Check the continuity between fuel level sensor unit harness connector and IPDM E/R harness connector.

+						
Fuel level	Fuel level sensor unit		IPDM E/R			
Connector	Terminal	Connector	Terminal			
B46	1	E15	54	Existed		

4. Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

5. CHECK LOW FUEL PUMP GROUND CIRCUIT

- Turn ignition switch OFF.
- 2. Check the continuity between fuel level sensor unit harness connector and ground.

	+		
Fuel level sensor unit		-	Continuity
Connector	Terminal		
B46	3	Ground	Existed

3. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 6.

NO

NO >> Repair or replace error-detected parts.

6.CHECK LOW FUEL PUMP

Check the low fuel pump. Refer to EC-1234, "Component Inspection (Low Pressure Fuel Pump)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-44, "Intermittent Incident".

>> Replace fuel level sensor unit. Refer to <u>FL-5, "2WD : Exploded View"</u> (2WD) or <u>FL-9, "AWD : Exploded View"</u> (AWD).

Component Inspection (Low Pressure Fuel Pump)

INFOID:0000000011611277

1. CHECK FUEL PRESSURE REGULATOR

- 1. Turn ignition switch OFF.
- 2. Check low fuel pressure. Refer to EC-756, "Work Procedure".

Is inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

LOW PRESSURE FUEL PUMP

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

$\overline{2}$.CHECK LOW PRESSURE FUEL PUMP

- 1. Turn ignition switch OFF.
- 2. Disconnect fuel level sensor unit.
- 3. Check resistance between fuel level sensor unit terminals as follows.

Fuel level	sensor unit					
+	_	Condition	Resistance			
Tern	ninals					
1	3	Temperature: 25°C (77°F)	0.2 - 5.0 Ω			

Is the inspection result normal?

YES >> INSPECTION END

NO

>> Replace fuel level sensor unit. Refer to <u>FL-5, "2WD : Exploded View"</u> (2WD) or <u>FL-9, "AWD : Exploded View"</u> (AWD).

EC

Α

D

F

Е

G

Н

J

K

L

M

Ν

0

MALFUNCTION INDICATOR LAMP

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

MALFUNCTION INDICATOR LAMP

Component Function Check

1. CHECK MIL FUNCTION

- 1. Turn ignition switch ON.
- 2. Check that MIL lights up.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Proceed to EC-1236, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000011611279

INFOID:0000000011611278

1. CHECK DTC

Check that DTC UXXXX is not displayed.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform trouble diagnosis for DTC UXXXX.

2. CHECK DTC WITH METER

Refer to MWI-21, "CONSULT Function".

Is the inspection result normal?

YES >> GO TO 3.

NO >> Perform trouble diagnosis for DTC indicated.

3. CHECK INTERMITTENT INCIDENT

Refer to GI-44. "Intermittent Incident".

Is the inspection result normal?

YES >> Replace combination meter. Refer to MWI-60, "Removal and Installation".

NO >> Repair or replace error-detected parts.

REFRIGERANT PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

REFRIGERANT PRESSURE SENSOR

Component Function Check

INFOID:0000000011611280

1. CHECK REFRIGERANT PRESSURE SENSOR OVERALL FUNCTION

- Start engine and warm it up to normal operating temperature.
- 2. Turn A/C switch and blower fan switch ON.
- Check the voltage between ECM harness connector and ground.

Connector	+	_	Voltage		
Connector	Ter				
F23	12	13	1.0 - 4.0V		

Is the inspection result normal?

YES >> INSPECTION END

>> Proceed to EC-1237, "Diagnosis Procedure". NO

Diagnosis Procedure

INFOID:0000000011611281

1. CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY

Turn ignition OFF.

- 2. Disconnect refrigerant pressure sensor harness connector.
- 3. Turn ignition switch ON.
- Check the voltage between refrigerant pressure sensor harness connector and ground.

Refrigerant pr	essure sensor	_	Voltage (Approx.)			
Connector	Terminal		(
E49	3	Ground	5 V			

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2.CHECK REFRIGERANT PRESSURE SENSOR POWER SUPPLY CIRCUIT

- Turn ignition switch OFF.
- 2. Disconnect ECM harness connector.
- Check the continuity between refrigerant pressure sensor harness connector and ECM harness connector.

	+					
Refrigerant pr	essure sensor	E	Continuity			
Connector	Terminal	Connector	Terminal			
E49	3	F23	29	Existed		

Also check harness for short to ground.

Is the inspection result normal?

YES >> Perform the trouble diagnosis for power supply circuit.

NO >> Repair or replace error-detected parts.

3.CHECK REFRIGERANT PRESSURE SENSOR GROUND

- Turn ignition switch OFF.
- Disconnect ECM harness connector. 2.
- Check the continuity between refrigerant pressure sensor harness connector and ECM harness connector.

EC-1237 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

Н

M

Ν

REFRIGERANT PRESSURE SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+					
Refrigerant pr	efrigerant pressure sensor		ECM		
Connector	Terminal	Connector	Terminal		
E49	1	F23	13	Existed	

4. Also check harness for short to power.

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace error-detected parts.

4. CHECK REFRIGERANT PRESSURE SENSOR INPUT SIGNAL CIRCUIT

Check the continuity between ECM harness connector and refrigerant pressure sensor harness connector.

+						
Refrigerant pr	essure sensor	E	Continuity			
Connector	Terminal	Connector	Terminal			
E49	2	F23	12	Existed		

2. Also check harness for short to ground and to power.

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace error-detected parts.

5. CHECK INTERMITTENT INCIDENT.

Perform GI-44, "Intermittent Incident".

Is the inspection result normal?

YES >> Replace refrigerant pressure sensor. Refer to <u>HA-36, "Exploded View"</u>.

NO >> Repair or replace error-detected parts.

SENSOR POWER SUPPLY 2 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

SENSOR POWER SUPPLY 2 CIRCUIT

Description INFOID:0000000011611282

ECM supplies a voltage of 5 V to some of the sensors systematically divided into 2 groups, respectively. Accordingly, when a short circuit develops in a sensor power source, a malfunction may occur simultaneously in the sensors belonging to the same group as the short-circuited sensor.

EC

D

Е

Α

Sensor power supply 1

- · Crankshaft position sensor
- · Battery current sensor
- EGR pressure sensor
- Intake manifold runner control valve position sensor
- Manifold absolute pressure sensor
- EGR volume control valve
- Electric wastegate position sensor
- Multi-way control valve position sensor
- Exhaust valve timing control position sensor
- Throttle position sensor
- Accelerator pedal position sensor 1

NOTE:

If sensor power supply 1 circuit is malfunctioning, DTC P0643 is displayed.

Sensor power supply 2

- Mass air flow sensor
- G sensor
- Refrigerant pressure sensor
- Fuel rail pressure sensor
- Engine oil pressure sensor
- Turbocharger boost sensor
- Camshaft position sensor
- Accelerator pedal position sensor 2

Diagnosis Procedure

INFOID:0000000011611283

1. CHECK APP SENSOR 2 POWER SUPPLY CIRCUIT-1

- Turn ignition switch OFF.
- Disconnect accelerator pedal position (APP) sensor harness connector.
- 3. Turn ignition switch ON.
- 4. Check the voltage between APP sensor harness connector and ground.

	+		V 16				
APP :	sensor	_	Voltage (Approx.)				
Connector	Terminal		, , ,				
E101	5	Ground	5 V				

N

Р

Is the inspection result normal?

YES >> INSPECTION END

NO >> GO TO 2.

2.CHECK APP SENSOR 1 POWER SUPPLY CIRCUIT-2

- Turn ignition switch OFF.
- Disconnect ECM harness connector.
- 3. Check the continuity between APP sensor harness connector and ECM harness connector.

Revision: 2014 October EC-1239 2015 JUKE

SENSOR POWER SUPPLY 2 CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

+		-				
APP s	ensor	ECM		Continuity		
Connector	Terminal	Connector	Terminal			
E101	5	E19	142	Existed		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair open circuit.

3.check sensor power supply 2 circuit

- 1. Disconnect following sensors harness connector.
- 2. Check harness for short to power and short to ground, between the following terminals.

EC	CM	Sensor		
Connector	Terminal	Name	Connector	Terminal
E19	142	APP sensor 2	E101	5
	26	Mass air flow sensor	F8	1
		G sensor	B32	3
F23		Refrigerant pressure sensor	E49	3
F23	29	EOP sensor	F43	3
		Turbocharger boost sensor	F75	2
		FRP sensor	F7	1
F24	66	CMP sensor	F109	1

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair short to ground or short to power in harness or connectors.

4. CHECK COMPONENTS

Check the following.

- APP sensor 2 (Refer to EC-1146, "Component Inspection".)
- FRP sensor (Refer to EC-906, "Component Inspection".)
- EOP sensor (Refer to EC-1031, "Component Inspection".)
- Turbocharger boost sensor (Refer to EC-924, "Component Inspection".)
- Camshaft position sensor (PHASE) (Refer to EC-939. "Component Inspection".)
- Mass air flow sensor (Refer to EC-830, "Component Inspection".)
- Refrigerant pressure sensor (Refer to EC-1237, "Diagnosis Procedure".)
- G sensor (Refer to EC-1119, "Component Inspection".)

Is the inspection result normal?

YES >> Perform GI-44, "Intermittent Incident".

NO >> Replace malfunctioning component. <u>EC-906</u>, "Component Inspection"

< SYMPTOM DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

SYMPTOM DIAGNOSIS

ENGINE CONTROL SYSTEM

Symptom Table EC

SYSTEM — BASIC ENGINE CONTROL SYSTEM

							S	/MPT	OM							C
		Q				NOI					HIGH					D
		RT (EXCP. HA)		LAT SPOT	NOIL	ACCELERATION)LE	OVERHEATS/WATER TEMPERATURE	UMPTION	MPTION	CHARGE)		Е
		START/RESTART	-T	SURGING/F	CK/DETONA	OF POWER/POOR	OW IDLE	/HUNTING	ATION	TURN TO IT	/WATER TEN	FUEL CONSUMPTION	OIL CONSUMPTION	AD (UNDER	Reference page	F
		HARD/NO ST	ENGINE STALL	HESITATION/SURGING/FLAT	SPARK KNOCK/DETONATION	LACK OF PO	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS	EXCESSIVE	EXCESSIVE	BATTERY DEAD (UNDER CHARGE)		G
Warrant	y symptom code	AA	AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА		Н
Fuel	Low pressure fuel pump circuit	1	1	2	3	2		2	2			3		2	EC-1233	
	Fuel pressure regulator system	3	3	4	4	4	4	4	4	4		4			EC-756	I
	Fuel injector circuit	1	1	2	3	2		2	2			2			EC-1203	
	Evaporative emission system	3	3	4	4	4	4	4	4	4		4			EC-1251	
	FRP sensor circuit	1	1	2	2	2		2	2			2			EC-904	J
	High pressure fuel pump circuit			4		3									EC-1211	
Air	Positive crankcase ventilation system	3	3	4	4	4	4	4	4	4		4	1		EC-1254	K
	Incorrect idle speed adjustment						1	1	1	1		1			EC-1249	
	Electric throttle control actuator	1	1	2	3	3	2	2	2	2		2		2	EC-1138, EC-1143	L
Ignition	Incorrect ignition timing adjustment	3	3	1	1	1		1	1			1			EC-1250	
	Ignition circuit	1	1	2	2	2		2	2			2			EC-1228	M
Main po	wer supply and ground circuit	2	2	3	3	3		3	3		2	3			EC-777	
Mass air	r flow sensor circuit	1			2										EC-828	Ν
Engine of	coolant temperature sensor circuit						3			3					EC-845	14
Air fuel r	ratio (A/F) sensor 1 circuit		1	2	3	2		2	2			2			EC-856, EC-860, EC-863, EC-885	0
Throttle	position sensor circuit						2			2					EC-849, EC-914, EC-1081, EC-1082	Р
Accelera	ator pedal position sensor circuit			3	2	1									EC-1145, EC-1148, EC-1153	

[MR EXCEPT FOR NISMO RS MODELS]

						S	/MPT	ОМ						
	HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page
Warranty symptom code	AA	AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА	•
Heated oxygen sensor 2 circuit			6		6		6	6			5			EC-866, EC-872, EC-879
Knock sensor circuit			2								3			EC-932
Engine oil temperature sensor circuit			4		2						3			EC-911
Engine oil pressure sensor circuit			4		4	3	3	3			3			EC-1029
Crankshaft position sensor (POS) circuit	2	2												EC-934
Camshaft position sensor (PHASE) circuit	3	2												EC-937
Turbocharger boost sensor circuit			3		3									EC-923
Manifold absolute pressure sensor circuit					2									EC-836
Vehicle speed signal circuit		2	3		3						3			EC-1018, EC-1022
ECM	2	2	3	3	3	3	3	3	3	3	3			EC-1047, EC-1049, EC-1051, EC-1054, EC-1055
Intake valve timing control solenoid valve circuit	2	2	2		2		2	2						EC-784, EC-798
Intake intermediate valve timing control sole- noid valve circuit	2	2	2		2		2	2						EC-784, EC-798
Exhaust valve timing control solenoid valve circuit	2	2	2		2		2	2						EC-787, EC-801
Exhaust valve timing control position sensor circuit	2	2			3									EC-940
Exhaust gas temperature sensor circuit					2									EC-1044
EGR temperature sensor											5			EC-954
EGR pressure sensor											5			EC-1016
Intake manifold runner control valve motor circuit	5	4	4	2	4		4	4			4			EC-1123
Intake manifold runner control valve position sensor circuit														EC-1126
Turbocharger bypass control valve circuit			3		3									EC-917
Electric wastegate valve circuit					1									EC-1167
Electric recircuration valve circuit					1									EC-821
PNP signal circuit			3		3		3	3			3			EC-1062

< SYMPTOM DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

		SYMPTOM												
	HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page
Warranty symptom code	AA	AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА	
Refrigerant pressure sensor circuit		2				3			3		4			EC-1237
Cooling fan control module circuit	5	5	5	5	5		5	5	5	4	5			EC-1195
Atmospheric pressure sensor circuit											3			EC-836
Battery current sensor circuit						4	5	5					3	EC-1088, EC-1091, EC-1094, EC-1097
Electrical load signal circuit							3							EC-1198
Air conditioner circuit	2	2	3	3	3	3	3	3	3		3		2	HAC-43
ABS actuator and electric unit (control unit)			4											BRC-58

^{1 - 6:} The numbers refer to the order of inspection. (continued on next page)

SYSTEM — ENGINE MECHANICAL & OTHER

EC-1243 Revision: 2014 October 2015 JUKE

EC

Α

D

Е

F

G

Н

J

Κ

L

M

Ν

0

							S	YMPT	OM						
		HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	IDLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page
Warranty s	ymptom code	A A	AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА	
Fuel	Fuel tank	5		_	_			_							FL-17, FL-22
	Fuel piping		_	5	5	5		5	5			5			<u>EM-212</u>
	Vapor lock		5												_
	Valve deposit Poor fuel (Heavy weight gasoline, Low octane)	5		5	5	5		5	5			5			
Air	Air duct														EM-191
	Air cleaner	-													EM-191
	Air leakage from air duct (Mass air flow sensor — electric throttle control actuator)		5	5		5		5	5			5			
	Electric throttle control actuator Air leakage from intake manifold/ Collector/Gasket	5			5		5			5					<u>EM-196</u>
Cranking	Battery Generator circuit	1	1	1		1		1	1					1	PG-116 CHG-8
	Starter circuit	3													STR-5
	Signal plate	6	1									1			EM-286
	PNP signal	4													TM-24, TM-323
Engine	Cylinder head	F	F	F	F	F		F	F			5			EM 272
	Cylinder head gasket	5	5	5	5	5		5	5		4	Э	3		<u>EM-272</u>
	Cylinder block														
	Piston												4		
	Piston ring	6	6	6	6	6		6	6			6			EM-286
	Connecting rod	U	U	υ	U	U		6	6			U			LIVI-200
	Bearing														
	Crankshaft														

[MR EXCEPT FOR NISMO RS MODELS]

							S'	YMPT	ОМ							,
		HARD/NO START/RESTART (EXCP. HA)	ENGINE STALL	HESITATION/SURGING/FLAT SPOT	SPARK KNOCK/DETONATION	LACK OF POWER/POOR ACCELERATION	HIGH IDLE/LOW IDLE	ROUGH IDLE/HUNTING	DLING VIBRATION	SLOW/NO RETURN TO IDLE	OVERHEATS/WATER TEMPERATURE HIGH	EXCESSIVE FUEL CONSUMPTION	EXCESSIVE OIL CONSUMPTION	BATTERY DEAD (UNDER CHARGE)	Reference page	EC
Warranty s	symptom code	A A	AB	AC	AD	AE	AF	AG	АН	AJ	AK	AL	AM	НА		F
Valve mecha- nism	Timing chain Camshaft Intake valve timing control Exhaust valve timing control Intake valve Exhaust valve	5	5	5	5	5		5	5			5	3	-	EM-248 EM-260 EM-248 EM-248 EM-260	(d
Exhaust	Exhaust manifold/Tube/Muffler/ Gasket Three way catalyst	5	5	5	5	5		5	5			5			EX-10, EM-242 EM-231, EM-234, EX-10	
	EGR valve		5		5	5			5		5	5			EC-946, EC-984	
	EGR cooler		5		5	5			5		5	5			EC-1165	k
Lubrica- tion	Oil pan/Oil strainer/Oil pump/Oil filter/Oil gallery/Oil cooler Oil level (Low)/Filthy oil	5	5	5	5	5		5	5			5			EM-199, EM-281, LU-32,	L
	Variable displacement oil pump	5	5		4							4			EC-1032	
Cooling	Radiator/Hose/Radiator filler cap Thermostat Water pump Water gallery Cooling fan Coolant level (Low)/Contaminated coolant	5	5	5	5	5		5	5	5	4	5			CO-45 CO-22 CO-51 CO-53 CO-49	N N
	Multi-way control valve	5	5	5	5	5		5	5	5	4	4			EC-1178, EC-1180, EC-1183	F
NATS (Nis	ssan Anti-theft System)	1	1												SEC-17	

^{1 - 6:} The numbers refer to the order of inspection.

ASCD MAIN SWITCH DOES NOT TURN ON/OFF

< SYMPTOM DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

ASCD MAIN SWITCH DOES NOT TURN ON/OFF

Diagnosis Procedure

INFOID:0000000011611288

1. CHECK DTC WITH ECM

Check that DTC is not displayed.

Is the inspection result normal?

YES >> GO TO 2.

NO >> Perform trouble diagnosis relevant to DTC indicated.

2. CHECK ASCD MAIN SWITCH

Refer to EC-1232, "Component Function Check".

Is the inspection result normal?

YES >> Perform GI-44, "Intermittent Incident".

NO >> Repair or replace malfunctioning part.

ASCD TEMPORARY RELEASE CANNOT BE PERFORMED BY THE CLUTCH PEDAL

< SYMPTOM DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

Α

ASCD TEMPORARY RELEASE CANNOT BE PERFORMED BY THE CLUTCH PEDAL

Diagnosis Procedure	00011611289 EC
1. CHECK DTC WITH ECM	
Check that DTC is not displayed.	С
Is the inspection result normal?	
YES >> GO TO 2. NO >> Perform trouble diagnosis relevant to DTC indicated.	
2. CHECK CLUTCH PEDAL POSITION SWITCH	D
Refer to EC-1193, "Component Function Check".	
Is the inspection result normal?	Е
YES >> Perform <u>GI-44, "Intermittent Incident"</u> . NO >> Repair or replace malfunctioning part.	
NO >> Repair of replace manufictioning part.	F
	G
	Н
	П
	J
	K
	ı
	L
	M
	N
	0
	_
	Р

NORMAL OPERATING CONDITION

< SYMPTOM DIAGNOSIS >

[MR EXCEPT FOR NISMO RS MODELS]

NORMAL OPERATING CONDITION

Description INFOID:0000000011611294

FUEL CUT CONTROL (AT NO LOAD AND HIGH ENGINE SPEED)

If the engine speed is above 1,800 rpm under no load (for example, the selector lever position is neutral and engine speed is over 1,800 rpm) fuel will be cut off after some time. The exact time when the fuel is cut off varies based on engine speed.

Fuel cut will be operated until the engine speed reaches 1,500 rpm, then fuel cut will be cancelled. **NOTE:**

This function is different from deceleration control listed under direct injection gasoline system, <u>EC-619</u>. "DIRECT INJECTION GASOLINE SYSTEM: System Description".

IDLE SPEED

[MR EXCEPT FOR NISMO RS MODELS]

PERIODIC MAINTENANCE

Α **IDLE SPEED** Inspection INFOID:0000000011611295 EC 1. CHECK IDLE SPEED With CONSULT C Check idle speed in "DATA MONITOR" mode with CONSULT. D >> INSPECTION END Е F G Н Κ L

Ρ

M

Ν

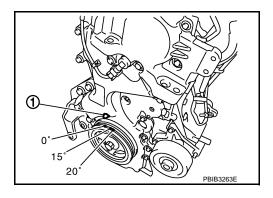
0

IGNITION TIMING

Inspection INFOID:0000000011611296

1. CHECK IGNITION TIMING

- Attach timing light to the ignition coil No.1 harness.
 Check ignition timing.
- - 1 : Timing indicator
 - >> INSPECTION END



EVAPORATIVE EMISSION SYSTEM

< PERIODIC MAINTENANCE >

[MR EXCEPT FOR NISMO RS MODELS]

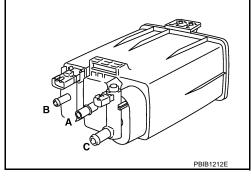
EVAPORATIVE EMISSION SYSTEM

Inspection INFOID:0000000011611297

1. CHECK EVAP CANISTER

- 1. Block port (B).
- 2. Blow air into port (A) and check that it flows freely out of port (C).
- 3. Release blocked port (B).
- 4. Apply vacuum pressure to port (B) and check that vacuum pressure exists at the ports (A) and (C).
- 5. Block port (A) and (B).
- 6. Apply pressure to port (C) and check that there is no leakage.

>> INSPECTION END



EC

Α

C

D

Ε

Н

Κ

L

M

Ν

0

EVAP LEAK CHECK

Inspection INFOID:0000000011773001

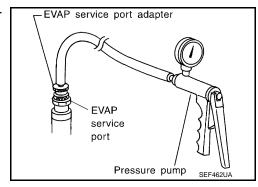
CAUTION:

- Do not use compressed air or a high pressure pump.
- Do not exceed 4.12 kPa (0.042 kg/cm², 0.6 psi) of pressure in EVAP system. NOTE:
- Do not start engine.
- Improper installation of EVAP service port adapter [commercial service tool: (J-41413-OBD)] to the EVAP service port may cause a leak.

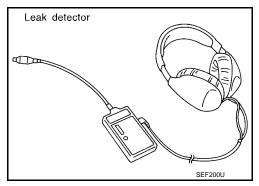
1.EVAP LEAK CHECK

(I) With CONSULT

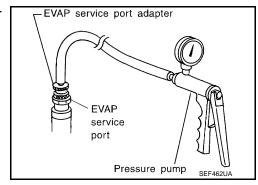
1. Install EVAP service port adapter [commercial service tool: (J-41413-OBD)] and pressure pump to EVAP service port.



- 2. Turn ignition switch ON.
- 3. Select the "EVAP SYSTEM CLOSE" in "WORK SUPPORT" mode of "ENGINE" using CONSULT.
- 4. Touch "START". A bar graph (Pressure indicating display) will appear on the screen.
- 5. Apply positive pressure to the EVAP system until the pressure indicator reaches the middle of the bar graph.
- Remove EVAP service port adapter [commercial service tool: (J-41413-OBD)] and hose with pressure pump.
- Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to <u>EC-639</u>, "EVAPORATIVE EMISSION SYSTEM: System Description".



1. Install EVAP service port adapter [commercial service tool: (J-41413-OBD)] and pressure pump to EVAP service port.



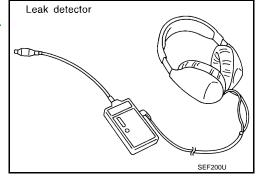
EVAP LEAK CHECK

< PERIODIC MAINTENANCE >

[MR EXCEPT FOR NISMO RS MODELS]

- 2. Apply battery voltage between the terminals of EVAP canister vent control valve to make a closed EVAP system.
- 3. To locate the leak, deliver positive pressure to the EVAP system until pressure gauge points reach 1.38 to 2.76 kPa (0.014 to 0.028 kg/cm², 0.2 to 0.4 psi).
- 4. Remove EVAP service port adapter [commercial service tool: (J-41413-OBD)] and hose with pressure pump.
- 5. Locate the leak using a leak detector [commercial service tool: (J-41416)]. Refer to <u>EC-639</u>, "EVAPORATIVE EMISSION SYSTEM: System Description".

>> INSPECTION END



EC

Α

С

D

Е

F

G

Н

1

K

L

M

Ν

0

POSITIVE CRANKCASE VENTILATION

< PERIODIC MAINTENANCE >

[MR EXCEPT FOR NISMO RS MODELS]

POSITIVE CRANKCASE VENTILATION

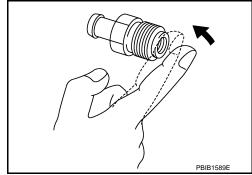
Inspection INFOID:0000000011611298

1. CHECK PCV VALVE

With engine running at idle, remove PCV valve from rocker cover. A properly working valve makes a hissing noise as air passes through it. A strong vacuum should be felt immediately when a finger is placed over valve inlet.

Is the inspection result normal?

YES >> INSPECTION END NO >> Replace PCV valve.



[MR EXCEPT FOR NISMO RS MODELS]

REMOVAL AND INSTALLATION

ECM

Removal and Installation

INFOID:0000000011611299

CAUTION:

Perform ADDITIONAL SERVICE WHEN REPLACING ECM. Refer to EC-734, "Work Procedure".

REMOVAL

- 1. Remove fusible link bracket. Keep a service area.
- 2. Disconnect ECM harness connectors. Refer to PG-5, "Harness Connector".
- 3. Remove ECM mounting nuts, and then remove ECM.

INSTALLATION

Install in the reverse order of removal.

Е

Α

C

D

F

Н

I

K

M

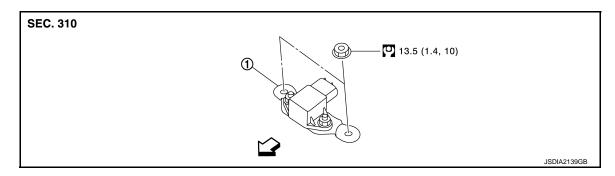
L

Ν

0

G SENSOR

Exploded View



1. G sensor

: N·m (kg-m, ft-lb)

Removal and Installation

INFOID:0000000011773222

CAUTION:

- Never drop or strike G sensor, because it has little tolerance for impact.
- Never use a power tool to avoid impact.

REMOVAL

- 1. Disconnect the battery cable from the negative terminal. Refer to PG-117, "Removal and Installation".
- 2. Remove driver seat (LHD) or passenger seat (RHD). Refer to SE-21, "Removal and Installation".
- Remove center pillar lower garnish (left side) and dash side finisher (left side). Refer to <u>INT-22</u>, "<u>CENTER PILLAR LOWER GARNISH</u>: Removal and <u>Installation</u>" (center pillar lower garnish) and <u>INT-21</u>, "<u>DASH SIDE FINISHER</u>: Removal and <u>Installation</u>" (dash side finisher).
- 4. Pull up floor carpet. Refer to INT-24, "Removal and Installation".
- 5. Disconnect G sensor harness connector.
- Remove G sensor.

INSTALLATION

Installation is the reverse order of removal.

Adjustment

ADJUSTMENT AFTER INSTALLATION

Perform "CALIBRATION OF G SENSOR". Refer to EC-748, "Work Procedure".

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[MR EXCEPT FOR NISMO RS MODELS]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Idle Speed

Transmission	Condition	Specification
CVT	No load* (in P or N position)	650 ± 50 rpm
M/T	No load* (in Neutral position)	600 ± 50 rpm

^{*:} Under the following conditions

- · A/C switch: OFF
- Electric load: OFF (Lights, heater fan & rear window defogger)
- Steering wheel: Kept in straight-ahead position

Ignition Timing

INFOID:000000011611308

Α

D

Е

Н

K

Transmission	Condition	Specification
CVT	No load* (in P or N position)	5 ± 2° BTDC
M/T	No load* (in Neutral position)	5 ± 2° BTDC

^{*:} Under the following conditions

- · A/C switch: OFF
- Electric load: OFF (Lights, heater fan & rear window defogger)
- · Steering wheel: Kept in straight-ahead position

Calculated Load Value

INFOID:0000000011611309

	Condition	Specification (Using CONSULT)
At idle	CVT (in N position)	Approx. 21 %
At lule	M/T (in Neutral position	n) Approx. 17%
At 2,500 rpm		Approx. 15 %

Mass Air Flow Sensor

INFOID:0000000011611310

Condition	Specification (Using CONSULT)
At idle*	Approx. 1.6 g/sec
At 2,500 rpm*	Approx. 5.0 g/sec

^{*:} Engine is warmed up to normal operating temperature and running under no load.

Ν

M

Р

Revision: 2014 October EC-1257 2015 JUKE