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CONTENTS

HOW TO USE THIS MANUAL3
HOW TO USE THIS MANUAL 3 Description 3 Terms 3 Units 3 Contents 3 Relation between Illustrations and Descriptions 4 Components 4
HOW TO FOLLOW TROUBLE DIAGNOSES 6 Description
HOW TO READ WIRING DIAGRAMS9Connector Symbols9Sample/Wiring Diagram -Example-10Connector Information12
ABBREVIATIONS
TIGHTENING TORQUE OF STANDARD BOLTS
RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS22 Recommended Chemical Products and Sealants22
PRECAUTION23
PRECAUTIONS

Precautions For Xenon Headlamp Service	F G H
LIFTING POINT29	- 1
Commercial Service Tools29 Garage Jack and Safety Stand and 2-Pole Lift29 Board-On Lift30	J
TOW TRUCK TOWING31	
Tow Truck Towing31	K
Vehicle Recovery (Freeing a Stuck Vehicle)31	
VEHICLE INFORMATION33	L
IDENTIFICATION INFORMATION33Model Variation33Information About Identification or Model Code33Dimensions36Wheels & Tires36	M
BASIC INSPECTION38	Ν
SERVICE INFORMATION FOR ELECTRICAL	
INCIDENT38	0
Work Flow	
Control Units and Electrical Parts38 How to Check Terminal39	Р
Intermittent Incident42 Circuit Inspection45	Г
CONSULT/GST CHECKING SYSTEM50	
Description50 CONSULT Function and System Application*150	

CONSULT/GST Data Link Connector (DLC) Cir-		ADDITIONAL SERVICE WHEN REMOVING BAT-	
cuit	51	TERY NEGATIVE TERMINAL	58
Wiring Diagram - CONSULT/GST CHECKING		ADDITIONAL SERVICE WHEN REMOVING	
SYSTEM	52	BATTERY NEGATIVE TERMINAL: Required	
INSPECTION AND AD HISTMENT	E 0	Procedure After Battery Disconnection	58

HOW TO USE THIS MANUAL

< HOW TO USE THIS MANUAL >

HOW TO USE THIS MANUAL

HOW TO USE THIS MANUAL

Description INFOID:0000000009652441 This volume explains "Removal, Disassembly, Installation, Inspection and Adjustment" and "Trouble Diagnoses". Terms INFOID:0000000009652442 The captions WARNING and CAUTION warn you of steps that must be followed to prevent personal injury and/or damage to some part of the vehicle. **WARNING** indicates the possibility of personal injury if instructions are not followed. **CAUTION** indicates the possibility of component damage if instructions are not followed. **BOLD TYPED STATEMENTS** except **WARNING** and **CAUTION** give you helpful information. Standard value: Tolerance at inspection and adjustment. Limit value: The maximum or minimum limit value that should not be exceeded at inspection and adjustment. Units INFOID:0000000009652443 • The UNITS given in this manual are primarily expressed as the SI UNIT (International System of Unit), and alternatively expressed in the metric system and in the yard/pound system. Also with regard to tightening torque of bolts and nuts, there are descriptions both about range and about the standard tightening torque. "Example" Range Outer Socket Lock Nut : 59 - 78 N·m (6.0 - 8.0 kg-m, 43 - 58 ft-lb) Standard Drive Shaft Installation Bolt : 44.3 N·m (4.5 kg-m, 33 ft-lb) Contents INFOID:00000000009652444 • A QUICK REFERENCE INDEX, a black tab (e.g. Ex)) is provided on the first page. You can quickly find the first page of each section by matching it to the section's black tab. THE CONTENTS are listed on the first page of each section. • THE TITLE is indicated on the upper portion of each page and shows the part or system. • THE PAGE NUMBER of each section consists of two or three letters which designate the particular section M

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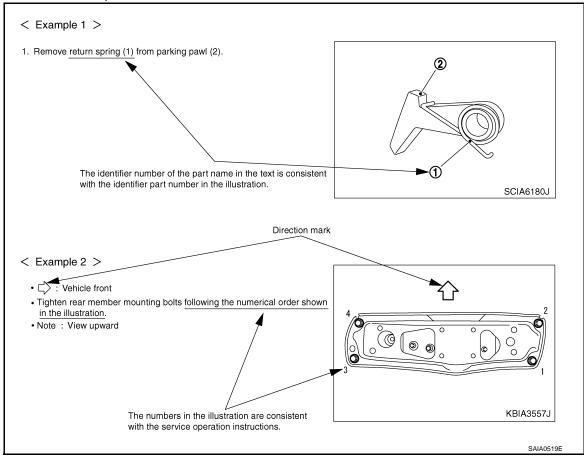
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- and a number (e.g. "BR-5").
- THE SMALL ILLUSTRATIONS show the important steps such as inspection, use of special tools, knacks of work and hidden or tricky steps which are not shown in the previous large illustrations. Assembly, inspection and adjustment procedures for the complicated units such as the automatic transaxle or transmission, etc. are presented in a step-by-step format where necessary.

Relation between Illustrations and Descriptions

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The following sample explains the relationship between the part description in an illustration, the part name in the text and the service procedures.



Components

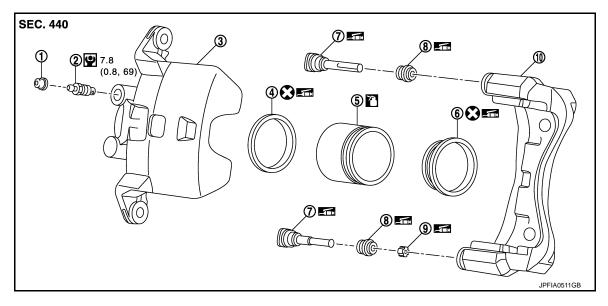
THE LARGE ILLUSTRATIONS are exploded views (see the following) and contain tightening torques, lubrication points, section number of the PARTS CATALOG (e.g. SEC. 440) and other information necessary to perform repairs.

The illustrations should be used in reference to service matters only. When ordering parts, refer to the appropriate **PARTS CATALOG**.

Components shown in an illustration may be identified by a circled number. When this style of illustration is used, the text description of the components will follow the illustration.

HOW TO USE THIS MANUAL

< HOW TO USE THIS MANUAL >



- 1. Cap
- 4. Piston seal
- 7. Sliding pin
- 10. Torque member
- : Apply rubber grease.
- : Apply brake fluid.
- : N·m (kg-m, in-lb)
- : Always replace after every disassembly

- 2. Bleeder valve
- 5. Piston
- 8. Sliding pin boot

- 3. Cylinder body
- 6. Piston boot
- 9. Bushing

SYMBOLS

SYMBOL	DESCRIPTIO	DN	SYMBOL	DESCRIPTION
Ø	Tightening torque The tightening torque specifications of bolts and nuts may be presented	: N•m (kg-m, ft-lb)	3	Always replace after every disassembly.
9	, , ,	P : N•m (kg-m, in-lb)	₽	Apply petroleum jelly.
4	Should be lubricated with grease. Ur indicated, use recommended multi-p		M	Apply molybdenum added petroleum jelly.
7	Should be lubricated with oil.		(ATF)	Apply ATF.
	Sealing point		*	Select with proper thickness.
	Sealing point with locking sealant.		☆	Adjustment is required.
<u></u>	Checking point			

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HOW TO FOLLOW TROUBLE DIAGNOSES

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HOW TO FOLLOW TROUBLE DIAGNOSES

Description INFOID:0000000009652447

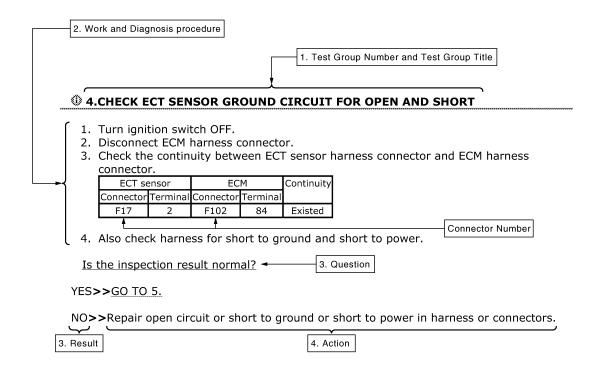
NOTICE:

Trouble diagnoses indicate work procedures required to diagnose problems effectively. Observe the following instructions before diagnosing.

- Before performing trouble diagnoses, read the "Work Flow" in each section.
- After repairs, re-check that the problem has been completely eliminated.
- Refer to Component Parts and Harness Connector Location for the Systems described in each section for identification/location of components and harness connectors.
- · When checking circuit continuity, ignition switch should be OFF.
- Refer to the Circuit Diagram for quick pinpoint check.
 - If you need to check circuit continuity between harness connectors in more detail, such as when a sub-harness is used, refer to Wiring Diagram in each individual section and Harness Layout in PG section for identification of harness connectors.
- Before checking voltage at connectors, check battery voltage.
- After accomplishing the Diagnosis Procedures and Electrical Components Inspection, check that all harness connectors are reconnected as they were.

How to Follow Test Groups in Trouble Diagnosis

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- 1. Test group number and test group title
 - Test group number and test group title are shown in the upper portion of each test group.
- 2. Work and diagnosis procedure
 - Start to diagnose a problem using procedures indicated in enclosed test groups.
- 3. Questions and results
 - Questions and required results are indicated in test group.
- 4. Action
 - Next action for each test group is indicated based on result of each guestion.

HOW TO FOLLOW TROUBLE DIAGNOSES

	Signifying Measurements	- TOCEGU	INFOID:00000
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
€Đ	Check after disconnecting the connector to be measured.	(a)	Procedure with Generic Scan Tool. (GST, OBD-II scan tool)
€	Check after connecting the connector to be measured.	TOOLS	Procedure without CONSULT or GST
	Insert key into ignition switch.	A/C OFF	A/C switch is "OFF".
	Remove key from ignition switch.	A/C ON	A/C switch is "ON".
	Insert and remove key repeatedly.		REC switch is "ON".
	Turn ignition switch to "OFF" position.		REC switch is "OFF".
<u> </u>	Turn ignition switch to "ACC" position.		Fan switch is "ON". (At any position except for "OFF" position)
	Turn ignition switch to "ON" position.		Fan switch is "OFF".
<u> </u>	Turn ignition switch to "START" position.	FUSE	Apply fuse.
C FF ACC	Turn ignition switch from "OFF" to "ACC" position.	(FUSE)	
(ACC) ON	Turn ignition switch from "ACC" to "ON" position.	BAT	Apply positive voltage from battery with fuse directly to components.
	Turn ignition switch from "ACC" to "OFF" position.	' ' '	

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HOW TO FOLLOW TROUBLE DIAGNOSES

< HOW TO USE THIS MANUAL >

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
(CFF) ON	Turn ignition switch from "OFF" to "ON" position.		Drive vehicle.
OFF OFF	Turn ignition switch from "ON" to "OFF" position.		Drive verticle.
	Do not start engine, or check with engine stopped.	BAT	Disconnect battery negative cable.
	Start engine, or check with engine running.		Depress brake pedal.
- Landing	Apply parking brake.		Release brake pedal.
Sanding.	Release parking brake.		Depress accelerator pedal.
СФРН	Check after engine is warmed up sufficiently.		Release accelerator pedal.
V ⊕ ⊖	Voltage should be measured with a voltmeter.	HS.	Pin terminal check for SMJ type ECM or TCM connectors. For details regarding the terminal
Ω • • • •	Circuit resistance should be measured with an ohmmeter.		arrangement, refer to the "ELECTRICAL UNITS" electrical reference page at the end of the manual.
A ⊕ ⊖	Current should be measured with an ammeter.		
₽ Θ	Pulse signal should be checked with an oscilloscope.	÷	
	Procedure with CONSULT		
	Procedure without CONSULT		
	Place selector lever in "P" position.		
0	Place selector lever in "N" position.		
	Jack up front portion.		
G.	Jack up rear portion.		
	Inspect under engine room.		
	Inspect under floor.		
6-Q	Inspect rear under floor.		

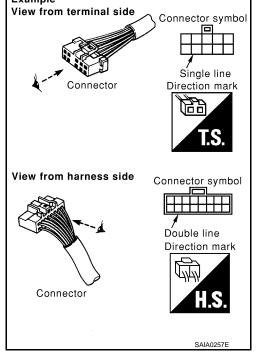
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Connector Symbols

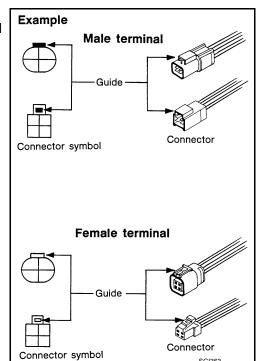
Most of connector symbols in wiring diagrams are shown from the terminal side.

- Connector symbols shown from the terminal side are enclosed by a single line and followed by the direction mark.

 Example View from
- Connector symbols shown from the harness side are enclosed by a double line and followed by the direction mark.
- 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 PG section, "Description", "HARNESS CONNECTOR".



Male and female terminals
 Connector guides for male terminals are shown in black and female terminals in white in wiring diagrams.



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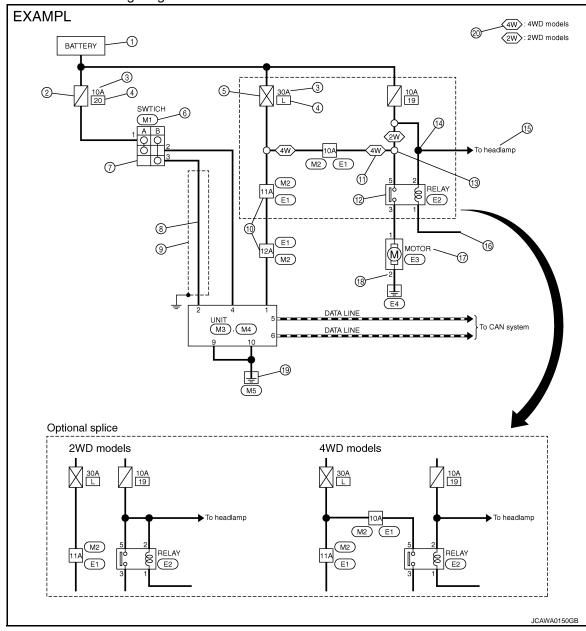
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Sample/Wiring Diagram -Example-

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Each section includes wiring diagrams.



Description		-
Number	Item	Description
1	Power supply	This means the power supply of fusible link or fuse.
2	Fuse	"/" means the fuse.
3	Current rating of fusible link/fuse	This means the current rating of the fusible link or fuse.
4	Number of fusible link/ fuse	This means the number of fusible link or fuse location.
5	Fusible link	"X" means the fusible link.
6	Connector number	 Alphabetic characters show to which harness the connector is placed. Numeric characters show the identification number of connectors.
7	Switch	This shows that continuity exists between terminals 1 and 2 when the switch is in the A position. Continuity exists between terminals 1 and 3 when the switch is in the B position.
8	Circuit (Wiring)	This means the wiring.

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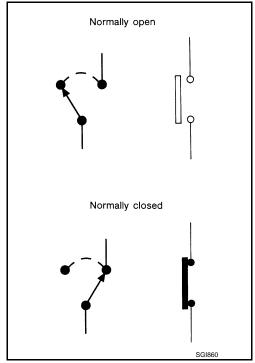
Number	Item	Description	
9	Shielded line	The line enclosed by broken line circle shows shield wire.	— GI
10	Connectors	This means that a transmission line bypasses two connectors or more.	
11	Option abbreviation	This means the vehicle specifications which layouts the circuit between "O".	В
12	Relay	This shows an internal representation of the relay.	
13	Optional splice	The open circle shows that the splice is optional depending on vehicle application.	
14	Splice	The shaded circle " means the splice.	
15	System branch	This shows that the circuit is branched to other systems.	
16	Page crossing	This circuit continues to an adjacent page.	D
17	Component name	This shows the name of a component.	
18	Terminal number	This means the terminal number of a connector.	
19	Ground (GND)	This shows the ground connection.	
20	Explation of option description	This shows a description of the option abbreviation used on the page.	F

SWITCH POSITIONS

Switches are shown in wiring diagrams as if the vehicle is in the "normal" condition.

A vehicle is in the "normal" condition when:

- ignition switch is "OFF"
- · doors, hood and trunk lid/back door are closed
- · pedals are not depressed
- · parking brake is released



MULTIPLE SWITCH

The continuity of multiple switch is described in two ways as shown below.

• The switch chart is used in schematic diagrams.

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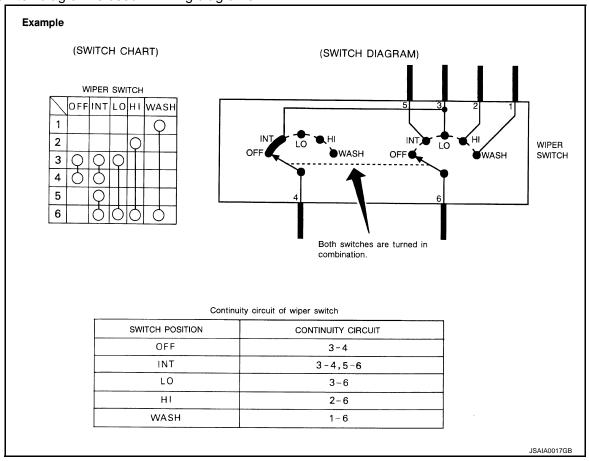
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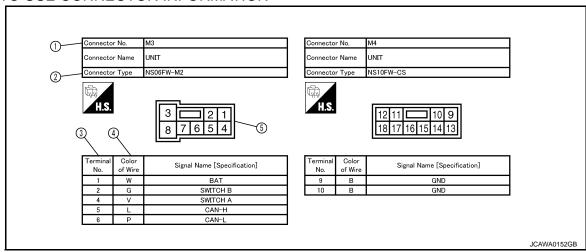
• The switch diagram is used in wiring diagrams.



Connector Information

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HOW TO USE CONNECTOR INFORMATION



< HOW TO USE THIS MANUAL >

Number	Item	Description		
Connector number Alphabetic characters show to which harness the connector is placed. Numeric characters show the identification number of connectors.				
2	Connector type	1: Connector model 2: Cavity 3: Male (M) and female (F) terminals 4: Connector color 5: Special type	Example: RS	
		This means the terminal number of a c This shows a code for the color of the		
4	Wire color	B = Black W = White R = Red G = Green L = Blue Y = Yellow LG = Light Green BG or BE = Beige LA = Lavender	BR = Brown OR or O = Orange P = Pink PU or V (Violet) = Purple GY or GR = Gray SB = Sky Blue CH = Dark Brown DG = Dark Green	
		When the wire color is striped, the bas shown below: Example: L/W = Blue with White Stripe	se color is given first, followed by the stripe color as	
5	Connector	 This means the connector information. This unit-side is described by the connector symbols. 		

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< HOW TO USE THIS MANUAL >

ABBREVIATIONS

Abbreviation List

The following **ABBREVIATIONS** are used:

Α			
ABBREVIATION	DESCRIPTION		
A/C	Air conditioner		
A/C	Air conditioning		
A/F sensor	Air fuel ratio sensor		
A/T	Automatic transaxle/transmission		
ABS	Anti-lock braking system		
ACCS	Advance climate control system		
ACL	Air cleaner		
AP	Accelerator pedal		
APP	Accelerator pedal position		
ATF	Automatic transmission fluid		
AV	Audio visual		
AWD	All wheel drive		
В			
ABBREVIATION	DESCRIPTION		
BARO	Barometric pressure		
BCI	Back-up collision intervention		
ВСМ	Body control module		
BLSD	Brake limited slip differential		
BPP	Brake pedal position		
BSW	Blind spot warning		
С			
ABBREVIATION	DESCRIPTION		
СКР	Crankshaft position		
CL	Closed loop		
СМР	Camshaft position		
CPP	Clutch pedal position		
СТР	Closed throttle position		
CVT	Continuously variable transaxle/transmission		
D			
ABBREVIATION	DESCRIPTION		
D1	Drive range first gear		
D2	Drive range second gear		
D3	Drive range third gear		
D4	Drive range fourth gear		
DCA	Distance control assist		
DDS	Downhill drive support		
DFI	Direct fuel injection system		
DLC	Data link connector		
DTC	Diagnostic trouble code		

Exhaust temperature	
Electric brake force distribution	
Engine control	В
Engine coolant level	
Engine control module	С
Engine coolant temperature	
Electrical control valve	
Electrically erasable programmable read only memory	D
Engine fuel temperature	
Exhaust gas recirculation	E
Exhaust gas recirculation temperature	
Exhaust gas temperature	
Engine oil pressure	F
Exhaust pressure	
Exhaust pressure regulator	G
Electronically controlled power steering	
Electronic stability program system	
Evaporative emission canister	Н
Electric vehicle supply equipment	
Exhaust control	
DESCRIPTION	
Fan control	J
1	K
Front	L
Fuel rail pressure	
Fuel rail temperature	
Fuel tank pressure	M
Fuel tank temperature	
	N
· · · · · · · · · · · · · · · · · · ·	O
Generic scan tool	
DECODIPTION	Р
	Engine control module Engine coolant temperature Electrical control valve Electrically erasable programmable read only memory Engine fuel temperature Exhaust gas recirculation Exhaust gas recirculation temperature Exhaust gas temperature Exhaust gas temperature Exhaust gas temperature Engine oil pressure Exhaust pressure Exhaust pressure regulator Electronically controlled power steering Electronic stability program system Evaporative emission canister Electric vehicle supply equipment Exhaust control DESCRIPTION Fan control Forward collision warning Forward emergency braking Fuel injector control Fuel pump Front Fuel rail temperature Fuel tank pressure

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<u> </u>	ADDDE VATION	DECORPTION			
	ABBREVIATION	DESCRIPTION			
	I/M	Inspection and maintenance			
	IA	Intake air			
	IAC	Idle air control			
	IAT	Intake air temperature			
	IBA	Intelligent brake assist			
	IC	Ignition control			
	ICC	Intelligent cruise control			
	ICM	Ignition control module			
	IPDM E/R	Intelligent power distribution module engine room			
	ISC	Idle speed control			
	ISS	Input shaft speed			
K	ADDD=10.4=====	7-222:			
	ABBREVIATION	DESCRIPTION			
	KS	Knock sensor			
<u>L</u>	ADDDE: #47'01'	DECODIFICAL			
	ABBREVIATION	DESCRIPTION			
	LBC	Li-ion battery controller			
	LCD	Liquid crystal display			
	LCU	Local control unit			
	LDP	Lane departure prevention			
	LDW	Lane departure warning			
	LED	Light emitting diode			
	LH	Left-hand			
	LIN	Local interconnect network			
М					
	ABBREVIATION	DESCRIPTION			
	M/T	Manual transaxle/transmission			
	MAF	Mass airflow			
	MAP	Manifold absolute pressure			
	MDU	Multi display unit			
	MI	Malfunction indicator			
	MIL	Malfunction indicator lamp			
N	A DDDDE\//ATION	DECODIDATION			
	ABBREVIATION	DESCRIPTION			
_	NOX	Nitrogen oxides			
0	ABBREVIATION	DESCRIPTION			
	02	Oxygen			
	O2S	Oxygen sensor			
	OBD	On board diagnostic			
	OC	Oxidation catalytic converter			
	OD	Overdrive Overdrive			
	OL	Open loop			
	OSS	Output shaft speed			

ABBREVIATION	DESCRIPTION	G
P/S	Power steering	
PBR	Potentio balance resistor	
PCV	Positive crankcase ventilation	
PFCW	Predictive forward collision warning	
PNP	Park/Neutral position	
PSP	Power steering pressure	
PTC	Positive temperature coefficient	
PTO	Power takeoff	
PWM	Pulse width modulation	
ABBREVIATION	DESCRIPTION	
RAM	Random access memory	
RAS	Rear active steer	
RH	Right-hand	
ROM	Read only memory	
RPM	Engine speed	
RR	Rear	
ABBREVIATION	DESCRIPTION	
SAE	Society of Automotive Engineers, Inc.	
SCK	Serial clock	
SDS	Service Data and Specifications	
SRT	System readiness test	
SST	Special Service Tools	
ABBREVIATION	DESCRIPTION	
TC	Turbocharger	_
TCM	Transmission control module	
TCS	Traction control system	
TCU	Telematics communication unit	
TP	Throttle position	
TPMS	Tire pressure monitoring system	
TSS	Turbine shaft speed	
TWC	Three way catalytic converter	
ABBREVIATION	DESCRIPTION	
USS	Uphill start support	
ABBREVIATION	DESCRIPTION	
VCM	Vehicle control module	
VDC	Vehicle dynamics control system	
VIN	Vehicle identification number	
VSS	Vehicle speed sensor	

HOW TO USE IT	113 IVIAINUAL >		
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ABBREVIATION		DESCRIPTION	
WOT	Wide open throttle		
ABBREVIATION		DESCRIPTION	
11	1st range first gear		
12	1st range second gear		
1GR	First gear		
ABBREVIATION		DESCRIPTION	
21	2nd range first gear		
22	2nd range second gear		
2GR	Second gear		
2WD	2-wheel drive		
ABBREVIATION		DESCRIPTION	
3GR	Third gear		
ABBREVIATION		DESCRIPTION	
4GR	Fourth gear		
4WAS	Four wheel active steer		
4WD	Four wheel drive		
ABBREVIATION		DESCRIPTION	
5GR	Fifth gear		
ABBREVIATION		DESCRIPTION	
6GR	Sixth gear		
ADDDE: "ATION:	T	DECORIDATION	
ABBREVIATION		DESCRIPTION	
7GR	Seventh gear		

TIGHTENING TORQUE OF STANDARD BOLTS

< HOW TO USE THIS MANUAL >

TIGHTENING TORQUE OF STANDARD BOLTS

Description INFOID:00000000000652454

This vehicle has both new standard based on ISO* and previous standard bolts/nuts. There are some differences between these two types of bolts/ nuts; shape of the head, grade of strength, hexagonal width across flats and the standard tightening torque.

- For guidance in discriminating, refer to GI-19, "Tightening Torque Table (New Standard Included)".
- The new standard machine screws and tapping screws have a head of ISO standard torx recess.
- If the tightening torque is not described in the description or figure, refer to <u>GI-19</u>, "<u>Tightening Torque Table</u> (<u>New Standard Included</u>)".
- *ISO: International Organization for Standardization

Tightening Torque Table (New Standard Included)

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CAUTION:

- The special parts are excluded.
- The bolts/nuts in these tables have a strength (discrimination) number/symbol assigned to the head or the like. As to the relation between the strength grade in these tables and the strength (discrimination) number/symbol, refer to "DISCRIMINATION OF BOLTS AND NUTS".

PREVIOUS STANDARD

Tightening torque (Without lubricant) Hexagonal Bolt di-Grade Bolt Pitch width Hexagon head bolt (Strength Hexagon flange bolt ameter size across flats mm grade) mm ft-lb N·m kg-m in-lb N·m kg-m ft-lb in-lb mm M6 6.0 10 1.0 5.5 0.56 4 49 7 0.71 5 62 10 17 1.25 13.5 1.4 1.7 13 8.0 **M8** 12 1.0 13.5 1.4 10 17 1.7 13 2.9 1.5 28 21 35 3.6 26 4T M₁₀ 10.0 14 2.9 1.25 28 21 35 3.6 26 1.75 45 4.6 33 55 5.6 41 M12 12.0 17 1.25 4.6 45 33 65 6.6 48 M14 14.0 19 1.5 80 8.2 59 100 10 74 M6 6.0 10 1.0 9 0.92 7 11 1.1 8 97 80 1.25 22 2.2 16 28 2.9 21 8.0 **M8** 12 1.0 22 2.2 16 28 2.9 21 1.5 45 4.6 33 55 5.6 41 7T M10 10.0 14 1.25 4.6 33 41 45 55 5.6 74 1.75 80 8.2 59 100 10 M12 12.0 17 1.25 80 8.2 59 100 10 74 M14 14.0 19 1.5 130 13 96 170 17 125 M6 6.0 10 1.0 11 1.1 8 13.5 1.4 10 1.25 28 2.9 21 35 3.6 26 **M8** 8.0 12 1.0 28 2.9 21 35 3.6 26 5.6 8.2 1.5 55 41 80 59 9T 10.0 M₁₀ 14 1.25 55 5.6 41 8.2 59 80 1.75 100 74 10 130 13 96 M12 12.0 17 1.25 100 10 74 130 13 96 M14 14.0 19 170 125 210

CAUTION:

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TIGHTENING TORQUE OF STANDARD BOLTS

< HOW TO USE THIS MANUAL >

The parts with aluminum or the cast iron washer surface/thread surface are excluded.

NEW STANDARD BASED ON ISO

Grade		Bolt di-	Hexagonal		Tightening torque												
(Strength	Bolt size	ameter	width across flats			Hexagon head bolt				Hexagon flange bolt							
grade)	0120	mm	mm		N∙m	kg-m	ft-lb	in-lb	N∙m	kg-m	ft-lb	in-lb					
	M6	6.0	10	1.0	5.5	0.56	4	49	7	0.71	5	62					
	MO	9.0	13	1.25	13.5	1.4	10	_	17	1.7	13	_					
	M8	8.0	13	1.0	13.5	1.4	10	_	17	1.7	13	_					
4.8 (Without	M10	10.0	16	1.5	28	2.9	21		35	3.6	26	_					
lubricant)	WITO	10.0	10	1.25	28	2.9	21	_	35	3.6	26	_					
	M12	12.0	18	1.75	45	4.6	33		55	5.6	41						
	IVITZ	12.0	10	1.25	45	4.6	33		65	6.6	48						
	M14	14.0	21	1.5	80	8.2	59	_	100	10	74	_					
	M6	6.0	10	1.0	4	0.41	3	35	5.5	0.56	4	49					
	M8	8.0	13	1.25	11	1.1	8		13.5	1.4	10						
	IVIO	0.0	13	1.0	11	1.1	8	_	13.5	1.4	10	_					
4.8 (With lu-	- M10	10.0	16	1.5	22	2.2	16		28	2.9	21	_					
bricant)	WITO	10.0	10	1.25	22	2.2	16	_	28	2.9	21	_					
	M12 12.0	12.0	18	1.75	35	3.6	26	_	45	4.6	33	_					
	IVITZ	2 12.0	12.0	12.0	12.0	12.0	12.0	10	1.25	35	3.6	26		45	4.6	33	_
	M14	14.0	21	1.5	65	6.6	48	_	80	8.2	59	_					
	M6 6.0	6.0	10	1.0	8	0.82	6	71	10	1.0	7	89					
	M8	M8 8.0	13	1.25	21	2.1	15	_	25	2.6	18	_					
	IVIO	0.0	13	1.0	21	2.1	15		25	2.6	18	_					
8.8 (With lu-	M10	10.0	16	1.5	40	4.1	30	_	50	5.1	37	_					
bricant)	WITO	10.0	10	1.25	40	4.1	30		50	5.1	37	_					
	M12	12.0	18	1.75	70	7.1	52	_	85	8.7	63	_					
	10112	12.0	10	1.25	70	7.1	52	_	85	8.7	63	_					
	M14	14.0	21	1.5	120	12	89	_	140	14	103	_					
	M6	6.0	10	1.0	10	1.0	7	89	12	1.2	9	106					
	M8	8.0	13	1.25	27	2.8	20		32	3.3	24	_					
	1410	0.0	10	1.0	27	2.8	20	_	32	3.3	24	_					
10.9 (With lu-	M10	10.0	16	1.5	55	5.6	41	_	65	6.6	48	_					
bricant)	14/10	10.0	10.0	.0	1.25	55	5.6	41	_	65	6.6	48	_				
	M12	12.0	18	1.75	95	9.7	70	_	110	11	81	_					
	14112	12.0	10	1.25	95	9.7	70	_	110	11	81	_					
	M14	14.0	21	1.5	160	16	118	_	180	18	133	-					

CAUTION:

- 1. Use tightening torque with lubricant for the new standard bolts/nuts in principle. Friction coefficient stabilizer is applied to the new standard bolts/nuts.
- 2. However, use tightening torque without lubricant for the following cases. Friction coefficient stabilizer is not applied to the following bolts/nuts.
- Grade 4.8, M6 size bolt, Conical spring washer installed
- Paint removing nut (Size M6 and M8) for fixing with weld bolt

TIGHTENING TORQUE OF STANDARD BOLTS

< HOW TO USE THIS MANUAL >

DISCRIMINATION OF BOLTS AND NUTS

BOLTS

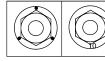
	Grade (Strength)	Discrim	nination
	4T (392N/mm²)	4	(No number/ symbol)
Previous standard	7T (686N/mm²)	7	
	9T (883N/mm²)		
	4.8 (420N/mm²)	4.8	(No number/symbol)
New Standard	8.8 (800N/mm²)	8.8	
	10.9 (1040N/mm²)	10.9	

NUTS

	Grade (Proof load stress)	Discrimination			
Previous	7N (686N/mm²)	(No number/symbol)			
standard	9N (883N/mm²)	(9)			
New	8 (800N/mm²)			(No number/symbol)	
Standard	10 (1040N/mm²)				

NOTICE:

- · A number is assigned on the side of the nuts in some cases.
- A number or symbol is assigned on the upper surface of the flange for the nut with flange.



MACHINE SCREWS AND TAPPING SCREWS

Shape of the head:

Cross recess for the previous standard Torx recess for the new standard

Screw	Screw	Torx size	
size	diameter	IOIX SIZE	
M4	4.0	T20	
M5	5.0	T20	
M6	6.0	T30	

NOTICE:

Use torx size T20 (united with M4 screw) for M5 screw although ISO standard specifies T25.

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RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS

< HOW TO USE THIS MANUAL >

RECOMMENDED CHEMICAL PRODUCTS AND SEALANTS

Recommended Chemical Products and Sealants

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Refer to the following chart for help in selecting the appropriate chemical product or sealant.

	Product Description	Purpose	Nissan North America Part No. (USA)	Nissan Canada Part No. (Canada)	Aftermarket Cross- reference Part Nos.
1	Rear View Mirror Adhesive	Used to permanently remount rear view mirrors to windows.	999MP-AM000P	99998-50505	Permatex 81844
2	Anaerobic Liquid Gas- ket	For metal-to-metal flange sealing. Can fill a 0.38 mm (0.015 inch) gap and provide instant sealing for most powertrain applications.	999MP-AM001P	99998-50503	Permatex 51813 and 51817
3	High Performance Thread Sealant	Provides instant sealing on any threaded straight or parallel threaded fitting. (Thread sealant only, no locking ability.) • Do not use on plastic.	999MP-AM002P	999MP-AM002P	Permatex 56521
4	Silicone RTV	Gasket Maker	999MP-AM003P (Ultra Grey)	99998-50506 (Ultra Grey)	Permatex Ultra Grey 82194; Three Bond 1207,1215, 1216, 1217F, 1217G and 1217H Nissan RTV Part No. 999MP-A7007
		Gasket Maker for Maxima/ Quest 5-speed automatic transmission (RE5F22A)	-	_	Three Bond 1281B or exact equivalent in its quality
5	High Temperature, High Strength Thread Locking Sealant (Red)	gh Strength Thread Threadlocker		999MP-AM004P	Permatex 27200; Three Bond 1360, 1360N, 1305 N&P, 1307N, 1335, 1335B, 1363B, 1377C, 1386B, D&E and 1388 Loctite 648
6	Medium Strength Thread Locking Sealant (Blue) Threadlocker (service tool removable)		999MP-AM005P	999MP-AM005P	Permatex 24200, 24206, 24240, 24283 and 09178; Three Bond 1322, 1322N, 1324 D&N, 1333D, 1361C, 1364D, 1370C and 1374

PRECAUTION

PRECAUTIONS

Description INFOID:000000009652457

Observe the following precautions to ensure safe and proper servicing. These precautions are not described in each individual section.

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

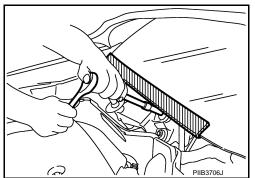
WARNING:

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

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

WARNING:

Comply with the following warnings to prevent any serious accident.

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PRECAUTIONS

< PRECAUTION >

- 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

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BATTERY

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

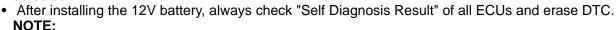
NOTE:

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.



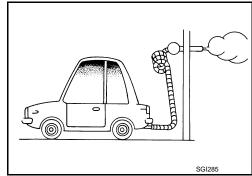
The removal of 12V battery may cause a DTC detection error.

General Precautions

Do not operate the engine for an extended period of time without

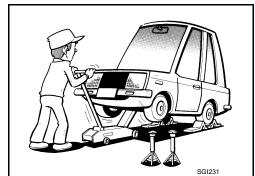
proper exhaust ventilation.
Keep the work area well ventilated and free of any inflammable materials. Special care should be taken when handling any inflammable or poisonous materials, such as gasoline, refrigerant gas, etc. When working in a pit or other enclosed area, be sure to properly ventilate the area before working with hazardous materials.

Do not smoke while working on the vehicle.



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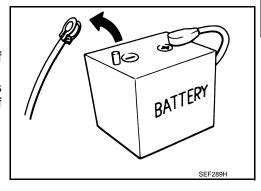
- Before jacking up the vehicle, apply wheel chocks or other tire blocks to the wheels to prevent the vehicle from moving. After jacking up the vehicle, support the vehicle weight with safety stands at the points designated for proper lifting before working on the vehicle.
 - These operations should be done on a level surface.
- When removing a heavy component such as the engine or transaxle/transmission, be careful not to lose your balance and drop them. Also, do not allow them to strike adjacent parts, especially the brake tubes and master cylinder.



PRECAUTIONS

< PRECAUTION >

- Before starting repairs which do not require battery power:
 Turn off ignition switch.
 - Disconnect the negative battery terminal.
- If the battery terminals are disconnected, recorded memory of radio and each control unit is erased.
- For vehicles with two batteries, be sure to remove both batteries when instructed to remove 12V battery in the service manual. If specified as main battery of sub battery, then do as instructed.

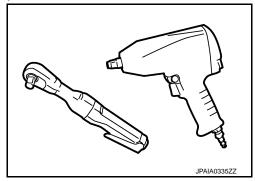


To prevent serious burns:

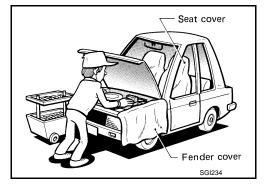
Avoid contact with hot metal parts.

Do not remove the radiator cap when the engine is hot.

- Dispose of drained oil or the solvent used for cleaning parts in an appropriate manner.
- 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.
- Clean all disassembled parts in the designated liquid or solvent prior to inspection or assembly.
- Replace oil seals, gaskets, packings, O-rings, locking washers, cotter pins, self-locking nuts, etc. with new ones.
- Replace inner and outer races of tapered roller bearings and needle bearings as a set.
- Arrange the disassembled parts in accordance with their assembled locations and sequence.
- Do not touch the terminals of electrical components which use microcomputers (such as ECM).
 Static electricity may damage internal electronic components.
- After disconnecting vacuum or air hoses, attach a tag to indicate the proper connection.
- Use only the fluids and lubricants specified in this manual.
- Use approved bonding agent, sealants or their equivalents when required.
- Use hand tools, power tools (disassembly only) and recommended special tools where specified for safe and efficient service repairs.
- When repairing the fuel, oil, water, vacuum or exhaust systems, check all affected lines for leakage.



Before servicing the vehicle:
 Protect fenders, upholstery and carpeting with appropriate covers.
 Take caution that keys, buckles or buttons do not scratch paint.



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WARNING:

< PRECAUTION >

To prevent ECM from storing the diagnostic trouble codes, never carelessly disconnect the harness connectors which are related to the engine control system and TCM (transmission control module) system. The connectors should be disconnected only when working according to the WORK FLOW of TROUBLE DIAGNOSES in EC and TM sections.

Three Way Catalyst

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If a large amount of unburned fuel flows into the catalyst, the catalyst temperature will be excessively high. To prevent this, follow the instructions.

- Use unleaded gasoline only. Leaded gasoline will seriously damage the three way catalyst.
- When checking for ignition spark or measuring engine compression, make tests quickly and only when necessary.
- Do not run engine when the fuel tank level is low, otherwise the engine may misfire, causing damage to the catalyst.

Do not place the vehicle on flammable material. Keep flammable material off the exhaust pipe and the three way catalyst.

Multiport Fuel Injection System or Engine Control System

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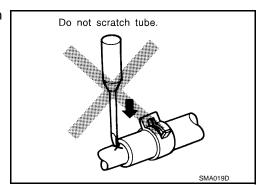
- Before connecting or disconnecting any harness connector for the multiport fuel injection system or ECM:
 - Turn ignition switch to "OFF" position.
 - Disconnect negative battery terminal.
 - Otherwise, there may be damage to ECM.
- Before disconnecting pressurized fuel line from fuel pump to injectors, be sure to release fuel pressure.
- Be careful not to jar components such as ECM and mass air flow sensor.



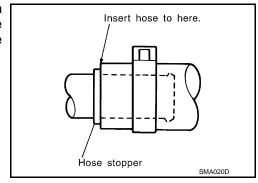
Hoses

HOSE REMOVAL AND INSTALLATION

 To prevent damage to rubber hose, do not pry off rubber hose with tapered tool or screwdriver.



 To reinstall the rubber hose securely, check that hose insertion length and orientation is correct. (If tube is equipped with hose stopper, insert rubber hose into tube until it butts up against hose stopper.)

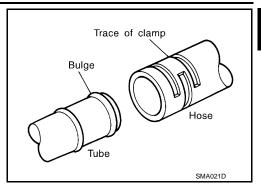


HOSE CLAMPING

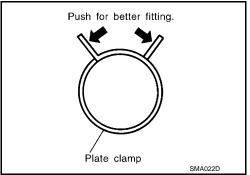
PRECAUTIONS

< PRECAUTION >

- If old rubber hose is re-used, install hose clamp in its original position (at the indentation where the old clamp was). If there is a trace of tube bulging left on the old rubber hose, align rubber hose at that position.
- Discard old clamps; replace with new ones.



 After installing plate clamps, apply force to them in the direction of the arrow, tightening rubber hose equally all around.



Engine Oils

Prolonged and repeated contact with used engine oil may cause skin cancer. Try to avoid direct skin contact with used oil.

If skin contact is made, wash thoroughly with soap or hand cleaner as soon as possible.

HEALTH PROTECTION PRECAUTIONS

- Avoid prolonged and repeated contact with oils, particularly used engine oils.
- Wear protective clothing, including impervious gloves where practicable.
- Do not put oily rags in pockets.
- Avoid contaminating clothes, particularly underpants, with oil.
- Heavily soiled clothing and oil-impregnated footwear should not be worn. Overalls must be cleaned regularly.
- First aid treatment should be obtained immediately for open cuts and wounds.
- Use barrier creams, applying them before each work period, to help the removal of oil from the skin.
- Wash with soap and water to ensure all oil is removed (skin cleansers and nail brushes will help). Preparations containing lanolin replace the natural skin oils which have been removed.
- Do not use gasoline, kerosene, diesel fuel, gas oil, thinners or solvents for cleaning skin.
- If skin disorders develop, obtain medical advice without delay.
- Where practical, degrease components prior to handling.
- Where there is a risk of eye contact, eye protection should be worn, for example, chemical goggles or face shields; in addition an eye wash facility should be provided.

ENVIRONMENTAL PROTECTION PRECAUTIONS

Dispose of used oil and used oil filters through authorized waste disposal contractors to licensed waste disposal sites, or to the waste oil reclamation trade. If in doubt, contact the local authority for advice on disposal facilities.

It is illegal to pour used oil on to the ground, down sewers or drains, or into water sources.

The regulations concerning pollution vary between regions.

Air Conditioning

Use an approved refrigerant recovery unit any time the air conditioning system must be discharged. Refer to HA section "REFRIGERANT" for specific instructions.

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PRECAUTIONS

< PRECAUTION >

Fuel INFOID:0000000000652468

Use unleaded regular gasoline with an octane rating of at least 87 AKI (Anti-Knock Index) number (Research octane number 91).

CAUTION:

- Using a fuel other than that specified could adversely affect the emission control system, and may also affect warranty coverage.
- Under no circumstances should a leaded gasoline be used, because this will damage the three-way catalyst.
- Do not use E-15 or E-85 fuel in the vehicle. The vehicle is not designed to run on E-15 or E-85 fuel.
 Using E-15 or E-85 fuel in a vehicle not specifically designed for E-15 or E-85 fuel can adversely
 affect the emission control devices and systems of the vehicle. Damage caused by such fuel is not
 covered by the NISSAN new vehicle limited warranty.
- U.S government regulations require ethanol dispensing pumps to be identified by a small, square, orange and black label with the common abbreviation or the appropriate percentage for that region.

LIFTING POINT

Commercial Service Tools

INFOID:0000000009652469

Tool name	Description
Board on attachment	S-NT001
Safety stand attachment	S-NT002

CAUTION:

- Every time the vehicle is lifted up, maintain the complete vehicle curb condition.
- Since the vehicle's center of gravity changes when removing main parts on the front side (engine, transmission, suspension etc.), support a jack up point on the rear side garage jack with a mission jack or equivalent.
- Since the vehicle's center of gravity changes when removing main parts on the rear side (rear axle, suspension, etc.), support a jack up point on the front side garage jack with a mission jack or equivalent.
- Be careful not to smash or never do anything that would affect piping parts.

Garage Jack and Safety Stand and 2-Pole Lift

WARNING:

- Park the vehicle on a level surface when using the jack. Check to avoid damaging pipes, tubes, etc. under the vehicle.
- Never get under the vehicle while it is supported only by the jack. Always use safety stands when you have to get under the vehicle.
- Place wheel chocks at both front and back of the wheels on the ground.
- When lifting the vehicle, open the lift arms as wide as possible and ensure that the front and rear of the vehicle are well balanced.
- When setting the lift arm, never allow the arm to contact the brake tubes, brake cable, fuel lines and sill spoiler.

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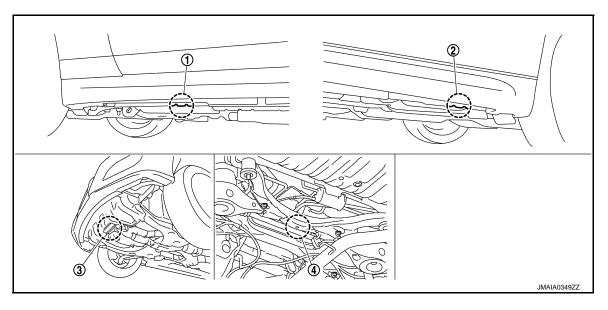
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- Safety stand point and lift up point (front)
 Safety stand point and lift up point 3. Garage jack point (front) (rear)
- 4. Garage jack point (rear)

CAUTION

There is canister just behind Garage jack point rear. Jack up carefully.

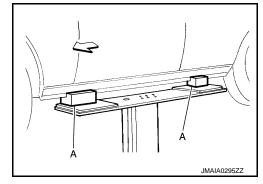
Board-On Lift

CAUTION:

Check vehicle is empty when lifting.

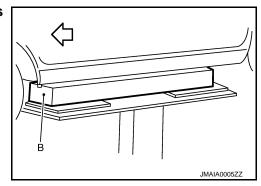
- The board-on lift attachment (A) set at front end of vehicle should be set on the front of the sill under the front door opening.
- · Position attachments at front and rear ends of board-on lift.

Size of attachment L: 200 mm (7.87 in), W: 90 mm (3.54 in), H: 110 mm (4.33 in)



• When using lift attachment (B), set lift attachment so that its width center contacts to side sill as shown in the figure.

Size of attachment L: 1400 mm (55.12 in), W: 120 mm (4.72 in), H: 100 mm (3.94 in)



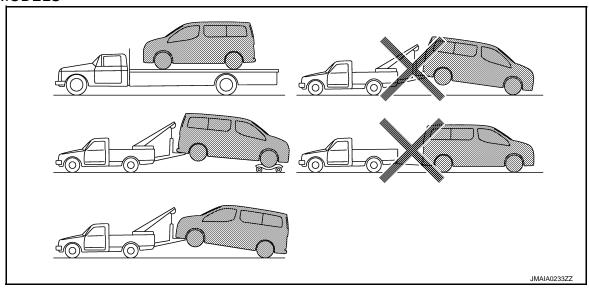
TOW TRUCK TOWING

Tow Truck Towing

CAUTION:

- All applicable state or Provincial (in Canada) laws and local laws regarding the towing operation must be obeyed.
- It is necessary to use proper towing equipment to avoid possible damage to the vehicle during towing operation. Towing is in accordance with Towing Procedure Manual at dealer.
- Always attach safety chains before towing.
- When towing, check that the transmission, steering system and powertrain are in good order. If any unit is damaged, dollies must be used.
- Never tow a CVT model from the rear (that is backward) with four wheels on the ground. This may cause serious and expensive damage to the transmission.

2WD MODELS



NISSAN recommends that vehicle be towed with the driving (front) wheels off the ground or that a dolly be used as illustrated.

CAUTION:

- Never tow CVT models with the front wheels on the ground or four wheels on the ground (forward or backward), as this may cause serious and expensive damage to the transmission. If it is necessary to tow the vehicle with the rear wheels raised, always use towing dollies under the front wheels.
- When towing CVT models with the front wheels on towing dollies:
- Turn the ignition switch to the OFF position, and secure the steering wheel in a straight ahead position with a rope or similar device. Never secure the steering wheel by turning the ignition switch to the LOCK position. This may damage the steering lock mechanism.
- Move the selector lever to the N (Neutral) position.
- When the battery of vehicle equipped with the Intelligent Key system is discharged, your vehicle should be towed with the front wheels on towing dollies or place the vehicle on a flat bed truck.
- When towing two wheel drive CVT model with the rear wheels on the ground (if you do not use towing dollies): Always release the parking brake.

Vehicle Recovery (Freeing a Stuck Vehicle)

FRONT

Securely install the vehicle recovery hook stored with jacking tools. Check that the hook is properly secured in the stored place after use.

WARNING:

Stand clear of a stuck vehicle.

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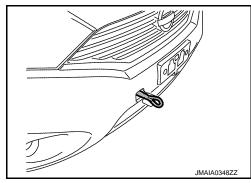
TOW TRUCK TOWING

< PRECAUTION >

• Never spin your tires at high speed. This could cause them to explode and result in serious injury. Parts of your vehicle could also overheat and be damaged.

CAUTION

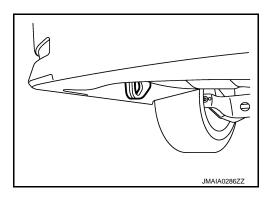
- Tow chains or cables must be attached only to the vehicle recovery hooks or main structural members of the vehicle. Otherwise, the vehicle body will be damaged.
- Never use the vehicle tie downs to free a vehicle stuck in sand, snow, mud, etc. Never tow the vehicle using the vehicle tie downs or recovery hooks.
- Always pull the cable straight out from the front of the vehicle. Never pull on the hook at an angle.
- Pulling devices should be routed so they never touch any part of the suspension, steering, brake or cooling systems.
- Pulling devices such as ropes or canvas straps are not recommended for use in vehicle towing or recovery.



REAR

WARNING:

· Rear hook is not available.



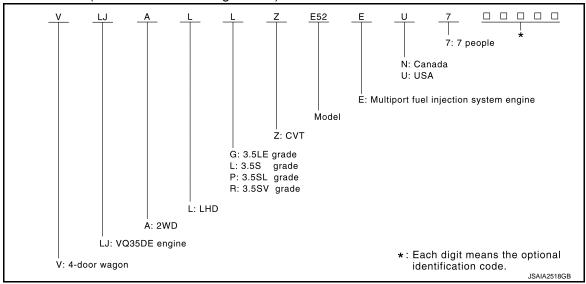
VEHICLE INFORMATION

IDENTIFICATION INFORMATION

Model Variation INFOID:0000000009652474 В

Destination	Body	Engine	Axle	Handle	Transmission	Grade	Model												
							3.5\$	VLJALLZ-EU7											
USA		-door wagon VQ35DE		D LHD CVT		3.5SV	VLJALRZ-EU7												
OOA					3.5SL	VLJALPZ-EU7													
	4-door wagon		2WD		CVT	3.5LE	VLJALGZ-EU7												
	4-door wagon			LIID		3.5\$	VLJALLZ-EN7												
Canada																			3.5SV
						3.5SL	VLJALPZ-EN7												
						3.5LE	VLJALGZ-EN7												

Model variation code (Prefix and suffix designations)



Information About Identification or Model Code

IDENTIFICATION NUMBER

INFOID:0000000009652475

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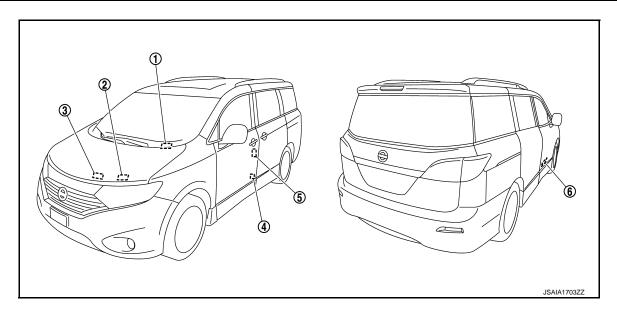
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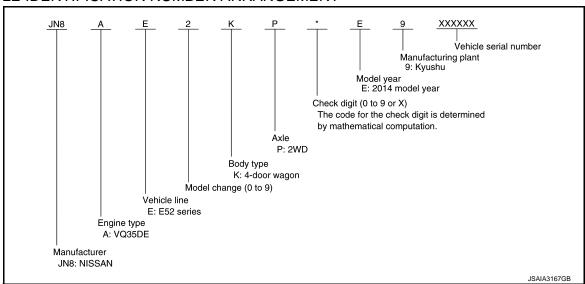
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- 1. Vehicle identification number plate
- FMVSS certification label (For USA)
 CMVSS certification label (For Canada)
- 2. Emission control information label
- . Tire and loading information label
- 3. Air conditioner specification label
- Vehicle identification number (Chassis number)

VEHICLE IDENTIFICATION NUMBER ARRANGEMENT

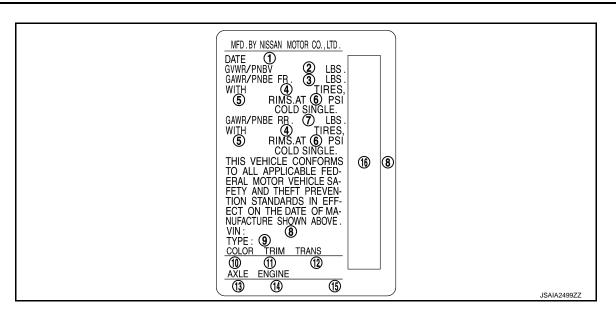


CERTIFICATION LABEL

FMVSS certification label

IDENTIFICATION INFORMATION

< VEHICLE INFORMATION >

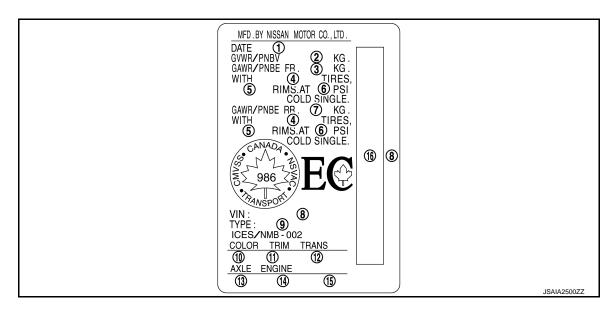


- 1. MFR Month/Year
- 4. Tire size
- 7. Gross axle weight rating (Rear)
- 10. Body color number
- 13. Axle type
- 16. VIN bar code

- 2. Gross vehicle weight rating
- 5. Wheel size
- 8. Vehicle identification number
- 11. Trim color number
- 14. Engine type

- 3. Gross axle weight rating (Front)
- 6. Tire inflation pressure
- 9. Verification model code
- 12. Transmission type
- 15. Engine displacement

CMVSS certification label



- MFR Month/Year
- 4. Tire size
- 7. Gross axle weight rating (Rear)
- 10. Body color number
- Axle type
- 16. VIN bar code

- 2. Gross vehicle weight rating
- 5. Wheel size
- 8. Vehicle identification number
- 11. Trim color number
- 14. Engine type

- 3. Gross axle weight rating (Front)
- 6. Tire inflation pressure
- 9. Verification model code
- 12. Transmission type
- 15. Engine displacement

ENGINE SERIAL NUMBER

Revision: 2014 May GI-35 2014 QUEST

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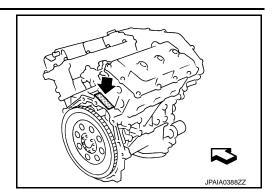
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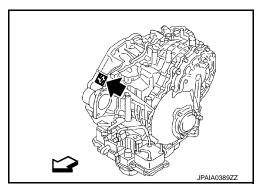
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IDENTIFICATION INFORMATION

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AUTOMATIC TRANSMISSION NUMBER



Dimensions INFOID:00000000009652476

	Unit: mm (
Overall length	5,100 (200.8) ^{*1} 5,110 (201.2) ^{*2}
Overall width	1,970 (77.6)
Overall height	1,815 (71.5) ^{*3} 1,855 (73.0) ^{*4}
Front tread	1,730 (68.1) ^{*5} 1,720 (67.7) ^{*6}
Rear tread	1,730 (68.1) ^{*5} 1,720 (67.7) ^{*6}
Wheelbase	3,000 (118.1)

^{*1:} Without front licence plate bracket

Wheels & Tires

^{*2:} With front licence plate bracket

^{*3:} Without roof rail

^{*4:} With roof rail

^{*5: 16-}inch tire equipped models

^{*6: 18-}inch tire equipped models

IDENTIFICATION INFORMATION

< VEHICLE INFORMATION >

		Tire		P225/65R16 99T		
		Road wheel	Size	16 × 6-1/2JJ	G	
	16 inch	(Steel)	Inset	50 mm (1.97 in)		
Conventional		Road wheel	Size	16 × 7J		
Conventional		(Aluminum)	Inset	50 mm (1.97 in)		
		Tire		P235/55R18 99T		
	18 inch	Road wheel	Size	18 × 7J	(
		(Aluminum)	Inset	55 mm (2.17 in)	 -	
		Tire		T135/80D16 101M T135/90D16 102M		
Spare	16 inch		Road wheel	Size	16 × 4T	
		(Steel)	Inset	30 mm (1.18 in)		

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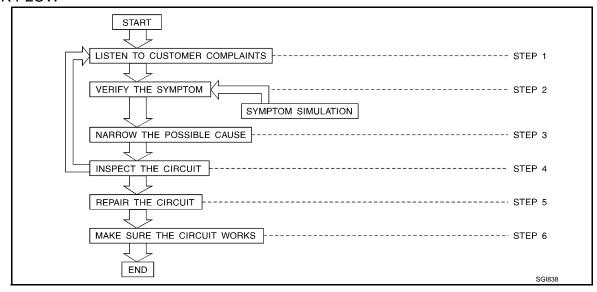
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BASIC INSPECTION

SERVICE INFORMATION FOR ELECTRICAL INCIDENT

Work Flow

WORK FLOW



STEP		DESCRIPTION
		formation about the conditions and the environment when the incident occurred. are key pieces of information required to make a good analysis:
	WHAT	Vehicle Model, Engine, Transmission/Transaxle and the System (i.e. Radio).
STEP 1	WHEN	Date, Time of Day, Weather Conditions, Frequency.
	WHERE	Road Conditions, Altitude and Traffic Situation.
	ном	System Symptoms, Operating Conditions (Other Components Interaction). Service History and if any After Market Accessories have been installed.
STEP 2	Verify the para	rstem, road test if necessary. meter of the incident. cannot be duplicated, refer to "Incident Simulation Tests".
STEP 3	Power SuppSystem OpeApplicable SCheck for ar	diagnosis materials together including: ly Routing ration Descriptions lervice Manual Sections ly Service Bulletins to begin diagnosis based upon your knowledge of the system operation and the customer comments.
STEP 4	,	stem for mechanical binding, loose connectors or wiring damage. ch circuits and components are involved and diagnose using the Power Supply Routing and Harness Lay-
STEP 5	Repair or repla	ice the incident circuit or component.
STEP 6		stem in all modes. Verify the system works properly under all conditions. Check you have not inadvert- new incident during your diagnosis or repair steps.

Control Units and Electrical Parts

INFOID:0000000009652479

PRECAUTIONS

- Never reverse polarity of battery terminals.
- Install only parts specified for a vehicle.
- Before replacing the control unit, check the input and output and functions of the component parts.
- Do not apply excessive force when disconnecting a connector.

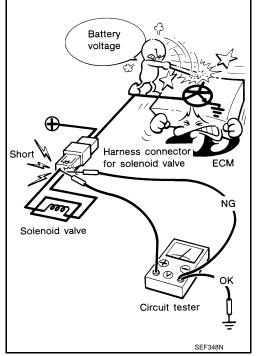
< BASIC INSPECTION >

- Do not apply excessive shock to the control unit by dropping or hitting it.
- Be careful to prevent condensation in the control unit due to rapid temperature changes and do not let water or rain get on it. If water is found in the control unit, dry it fully and then install it in the vehicle
- Be careful not to let oil to get on the control unit connector.
- Avoid cleaning the control unit with volatile oil.
- Do not disassemble the control unit, and do not remove the upper and lower covers.



 When using a DMM, be careful not to let test probes get close to each other to prevent the power transistor in the control unit from damaging battery voltage because of short circuiting.

 When checking input and output signals of the control unit, use the specified check adapter.



How to Check Terminal

CONNECTOR AND TERMINAL PIN KIT

- Use the connector and terminal pin kits listed below when replacing connectors or terminals.
- The connector and terminal pin kits contain some of the most commonly used NISSAN/INFINITI connectors and terminals. For detailed connector and terminal pin replacement procedures, refer to the latest NISSAN/ INFINITI CONNECTOR AND TERMINAL PIN SERVICE MANUAL.

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Revision: 2014 May GI-39 2014 QUEST

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Tool number (Kent-Moore No.) Tool name		Desc	ription	
- (J38751-95NI) Connector and terminal pin kit (NISSAN)	J38751-95NI	J38751-95INF	J <u>42</u> 992-98KIT	J42992-2000UPD
(J38751-95INF) Connector and terminal pin kit (INFINITI) - (J42992-98KIT) OBD and terminal repair kit				
(J42992-2000UPD) OBD-II Connector Kit Update		WAIA0004E		WAIA0005E

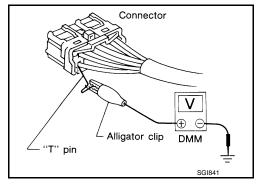
HOW TO PROBE CONNECTORS

- Connector damage and an intermittent connection can result from improperly probing of the connector during circuit checks.
- The probe of a digital multimeter (DMM) may not correctly fit the connector cavity. To correctly probe the connector, follow the procedures below using a "T" pin. For the best contact grasp the "T" pin using an alligator clip.

Probing from Harness Side

Standard type (not waterproof type) connector should be probed from harness side with "T" pin.

- If the connector has a rear cover such as a ECM connector, remove the rear cover before probing the terminal.
- Do not probe waterproof connector from harness side. Damage to the seal between wire and connector may result.

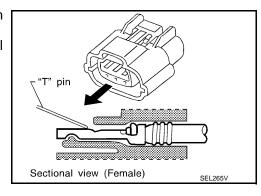


Probing from Terminal Side

FEMALE TERMINAL

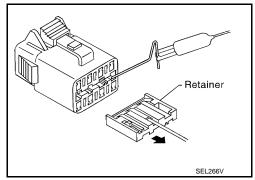
 There is a small notch above each female terminal. Probe each terminal with the "T" pin through the notch.
 Do not insert any object other than the same type male terminal

into female terminal.



< BASIC INSPECTION >

 Some connectors do not have a notch above each terminal. To probe each terminal, remove the connector retainer to make contact space for probing.

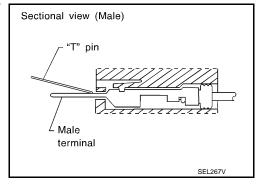


MALE TERMINAL

 Carefully probe the contact surface of each terminal using a "T" pin.

CAUTION:

Never bend terminal.

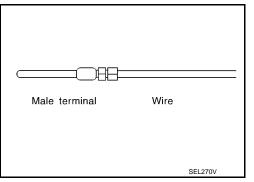


How to Check Enlarged Contact Spring of Terminal

- An enlarged contact spring of a terminal may create intermittent signals in the circuit.
- If the intermittent open circuit occurs, follow the procedure below to inspect for open wires and enlarged contact spring of female terminal.
- 1. Assemble a male terminal and approx. 10 cm (3.9 in) of wire. **NOTE:**

Use a male terminal which matches the female terminal.

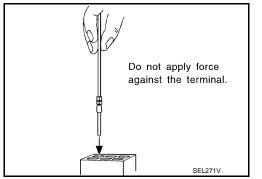
2. Disconnect the suspected faulty connector and hold it terminal side up.



3. While holding the wire of the male terminal, try to insert the male terminal into the female terminal.

CAUTION:

Never force the male terminal into the female terminal with your hands.



Revision: 2014 May GI-41 2014 QUEST

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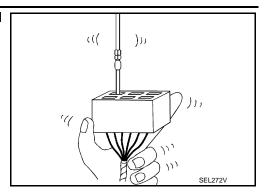
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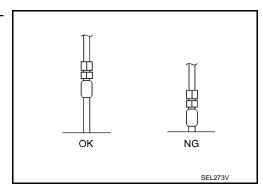
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4. While moving the connector, check whether the male terminal can be easily inserted or not.



If the male terminal can be easily inserted into the female terminal, replace the female terminal.



Waterproof Connector Inspection

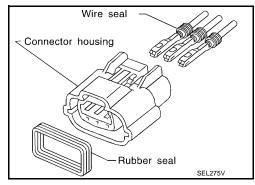
If water enters the connector, it can short interior circuits. This may lead to intermittent problems. Check the following items to maintain the original waterproof characteristics.

RUBBER SEAL INSPECTION

- Most waterproof connectors are provided with a rubber seal between the male and female connectors. If the seal is missing, the waterproof performance may not meet specifications.
- The rubber seal may come off when connectors are disconnected. Whenever connectors are reconnected, check the rubber seal is properly installed on either side of male or female connector.

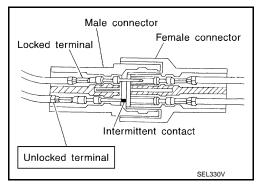
WIRE SEAL INSPECTION

 The wire seal must be installed on the wire insertion area of a waterproof connector. Be sure that the seal is installed properly.



Terminal Lock Inspection

Check for unlocked terminals by pulling wire at the end of connector. An unlocked terminal may create intermittent signals in the circuit.



Intermittent Incident

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DESCRIPTION

Sometimes the symptom is not present when the vehicle is brought in for service. If possible, re-create the conditions present at the time of the incident. Doing so may help avoid a No Trouble Found Diagnosis. The fol-

< BASIC INSPECTION >

lowing section illustrates ways to simulate the conditions/environment under which the owner experiences an electrical incident.

The section is broken into the six following topics:

- Vehicle vibration
- Heat sensitive
- Freezing
- Water intrusion
- Electrical load
- Cold or hot start up

Get a thorough description of the incident from the customer. It is important for simulating the conditions of the problem.

VEHICLE VIBRATION

The problem may occur or become worse while driving on a rough road or when engine is vibrating (idle with A/C on). In such a case, you will want to check for a vibration related condition. Refer to the following illustration.

Connector & Harness

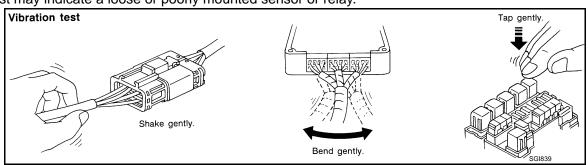
Determine which connectors and wiring harness would affect the electrical system you are inspecting. Gently shake each connector and harness while monitoring the system for the incident you are trying to duplicate. This test may indicate a loose or poor electrical connection.

Hint

Connectors can be exposed to moisture. It is possible to get a thin film of corrosion on the connector terminals. A visual inspection may not reveal this without disconnecting the connector. If the problem occurs intermittently, perhaps the problem is caused by corrosion. It is a good idea to disconnect, inspect and clean the terminals on related connectors in the system.

Sensor & Relay

Gently apply a slight vibration to sensors and relays in the system you are inspecting. This test may indicate a loose or poorly mounted sensor or relay.



Engine Compartment

There are several reasons a vehicle or engine vibration could cause an electrical complaint. Some of the things to check for are:

- Connectors not fully seated.
- Wiring harness not long enough and is being stressed due to engine vibrations or rocking.
- Wires laying across brackets or moving components.
- Loose, dirty or corroded ground wires.
- Wires routed too close to hot components.

To inspect components under the hood, start by verifying the integrity of ground connections. (Refer to Ground Inspection described later.) First check that the system is properly grounded. Then check for loose connection by gently shaking the wiring or components as previously explained. Using the wiring diagrams inspect the wiring for continuity.

Behind the Instrument Panel

An improperly routed or improperly clamped harness can become pinched during accessory installation. Vehicle vibration can aggravate a harness which is routed along a bracket or near a screw.

Under Seating Areas

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< BASIC INSPECTION >

An unclamped or loose harness can cause wiring to be pinched by seat components (such as slide guides) during vehicle vibration. If the wiring runs under seating areas, inspect wire routing for possible damage or pinching.

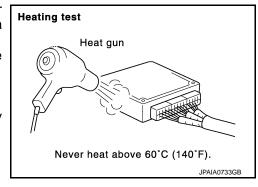
HEAT SENSITIVE

- The customer's concern may occur during hot weather or after car has sat for a short time. In such cases you will want to check for a heat sensitive condition.
- To determine if an electrical component is heat sensitive, heat the component with a heat gun or equivalent.

CAUTION:

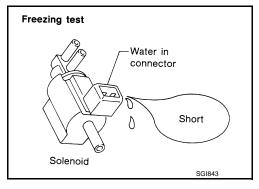
Never heat components above 60°C (140°F).

 If incident occurs while heating the unit, either replace or properly insulate the component.



FREEZING

- The customer may indicate the incident goes away after the car warms up (winter time). The cause could be related to water freezing somewhere in the wiring/electrical system.
- There are two methods to check for this. The first is to arrange for the owner to leave his car overnight. Check it will get cold enough to demonstrate his complaint. Leave the car parked outside overnight. In the morning, do a quick and thorough diagnosis of those electrical components which could be affected.
- The second method is to put the suspect component into a freezer long enough for any water to freeze. Reinstall the part into the car and check for the reoccurrence of the incident. If it occurs, repair or replace the component.

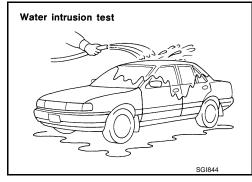


WATER INTRUSION

The incident may occur only during high humidity or in rainy/snowy weather. In such cases the incident could be caused by water intrusion on an electrical part. This can be simulated by soaking the car or running it through a car wash.

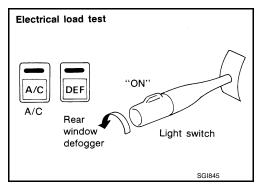
CAUTION:

Never spray water directly on any electrical components.



ELECTRICAL LOAD

The incident may be electrical load sensitive. Perform diagnosis with all accessories (including A/C, rear window defogger, radio, fog lamps) turned on.



COLD OR HOT START UP

On some occasions an electrical incident may occur only when the car is started cold, or it may occur when the car is restarted hot shortly after being turned off. In these cases you may have to keep the car overnight to make a proper diagnosis.

< BASIC INSPECTION >

Circuit Inspection

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DESCRIPTION

- In general, testing electrical circuits is an easy task if it is approached in a logical and organized method. Before beginning it is important to have all available information on the system to be tested. Also, get a thorough understanding of system operation. Then you will be able to use the appropriate equipment and follow the correct test procedure.
- You may have to simulate vehicle vibrations while testing electrical components. Gently shake the wiring harness or electrical component to do this.

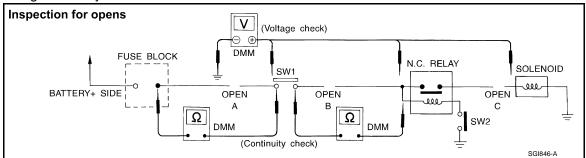
OPEN	A circuit is open when there is no	continuity through a section of the circuit.
	There are two types of shorts.	
SHORT	SHORT CIRCUIT	When a circuit contacts another circuit and causes the normal resistance to change.
	SHORT TO GROUND	When a circuit contacts a ground source and grounds the circuit.

NOTE:

Refer to GI-39, "How to Check Terminal" to probe or check terminal.

TESTING FOR "OPENS" IN THE CIRCUIT

Before you begin to diagnose and test the system, you should rough sketch a schematic of the system. This will help you to logically walk through the diagnosis process. Drawing the sketch will also reinforce your working knowledge of the system.



Continuity Check Method

The continuity check is used to find an open in the circuit. The digital multimeter (DMM) set on the resistance function will indicate an open circuit as over limit (no beep tone or no ohms symbol). Check to always start with the DMM at the highest resistance level.

To help in understanding the diagnosis of open circuits, please refer to the previous schematic.

- Disconnect the battery negative cable.
- Start at one end of the circuit and work your way to the other end. (At the fuse block in this example)
- Connect one probe of the DMM to the fuse block terminal on the load side.
- Connect the other probe to the fuse block (power) side of SW1. Little or no resistance will indicate that portion of the circuit has good continuity. If there were an open in the circuit, the DMM would indicate an over limit or infinite resistance condition. (point A)
- Connect the probes between SW1 and the relay. Little or no resistance will indicate that portion of the circuit
 has good continuity. If there were an open in the circuit, the DMM would indicate an over limit or infinite resistance condition. (point B)
- Connect the probes between the relay and the solenoid. Little or no resistance will indicate that portion of the
 circuit has good continuity. If there were an open in the circuit, the DMM would indicate an over limit or infinite resistance condition. (point C)

Any circuit can be diagnosed using the approach in the previous example.

Voltage Check Method

To help in understanding the diagnosis of open circuits please refer to the previous schematic.

In any powered circuit, an open can be found by methodically checking the system for the presence of voltage. This is done by switching the DMM to the voltage function.

- Connect one probe of the DMM to a known good ground.
- Begin probing at one end of the circuit and work your way to the other end.
- With SW1 open, probe at SW1 to check for voltage. voltage: open is further down the circuit than SW1.

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Revision: 2014 May

< BASIC INSPECTION >

no voltage: open is between fuse block and SW1 (point A).

Close SW1 and probe at relay.

voltage: open is further down the circuit than the relay.

no voltage: open is between SW1 and relay (point B).

Close the relay and probe at the solenoid.

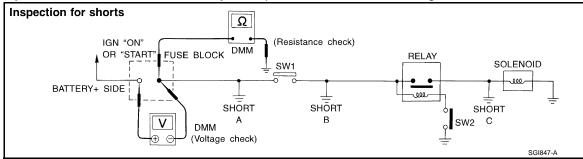
voltage: open is further down the circuit than the solenoid.

no voltage: open is between relay and solenoid (point C).

Any powered circuit can be diagnosed using the approach in the previous example.

TESTING FOR "SHORTS" IN THE CIRCUIT

To simplify the discussion of shorts in the system, please refer to the following schematic.



Resistance Check Method

- Disconnect the battery negative cable and remove the blown fuse.
- Disconnect all loads (SW1 open, relay disconnected and solenoid disconnected) powered through the fuse.
- Connect one probe of the DMM to the load side of the fuse terminal. Connect the other probe to a known good ground.
- With SW1 open, check for continuity.
 - continuity: short is between fuse terminal and SW1 (point A).
 - no continuity: short is further down the circuit than SW1.
- Close SW1 and disconnect the relay. Put probes at the load side of fuse terminal and a known good ground.
 Then, check for continuity.
- continuity: short is between SW1 and the relay (point B).
- no continuity: short is further down the circuit than the relay.
- Close SW1 and jump the relay contacts with jumper wire. Put probes at the load side of fuse terminal and a known good ground. Then, check for continuity.

continuity: short is between relay and solenoid (point C).

no continuity: check solenoid, retrace steps.

Voltage Check Method

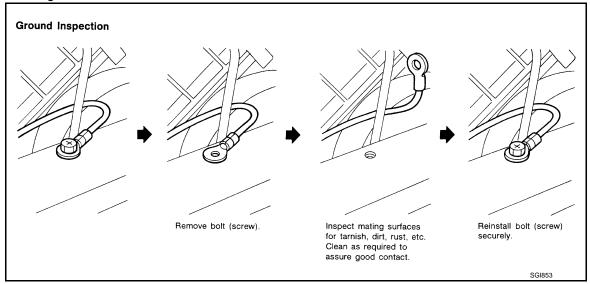
- Remove the blown fuse and disconnect all loads (i.e. SW1 open, relay disconnected and solenoid disconnected) powered through the fuse.
- Turn the ignition switch to the ON or START position. Verify battery voltage at the battery + side of the fuse terminal (one lead on the battery + terminal side of the fuse block and one lead on a known good ground).
- With SW1 open and the DMM leads across both fuse terminals, check for voltage.
 - voltage: short is between fuse block and SW1 (point A).
 - no voltage: short is further down the circuit than SW1.
- With SW1 closed, relay and solenoid disconnected and the DMM leads across both fuse terminals, check for voltage.
 - voltage: short is between SW1 and the relay (point B).
 - no voltage: short is further down the circuit than the relay.
- With SW1 closed, relay contacts jumped with fused jumper wire check for voltage.
 voltage: short is down the circuit of the relay or between the relay and the disconnected solenoid (point C).
 no voltage: retrace steps and check power to fuse block.

GROUND INSPECTION

- Ground connections are very important to the proper operation of electrical and electronic circuits. Ground connections are often exposed to moisture, dirt and other corrosive elements. The corrosion (rust) can become an unwanted resistance. This unwanted resistance can change the way a circuit works.
- Electronically controlled circuits are very sensitive to proper grounding. A loose or corroded ground can drastically affect an electronically controlled circuit. A poor or corroded ground can easily affect the circuit. Even when the ground connection looks clean, there can be a thin film of rust on the surface.

< BASIC INSPECTION >

- When inspecting a ground connection follow these rules:
- Remove the ground bolt or screw.
- Inspect all mating surfaces for tarnish, dirt, rust, etc.
- Clean as required to assure good contact.
- Reinstall bolt or screw securely.
- Inspect for "add-on" accessories which may be interfering with the ground circuit.
- If several wires are crimped into one ground eyelet terminal, check for proper crimps. Check all of the wires are clean, securely fastened and providing a good ground path. If multiple wires are cased in one eyelet check no ground wires have excess wire insulation.
- For detailed ground distribution information, refer to "Ground Distribution" in PG section.



VOLTAGE DROP TESTS

- Voltage drop tests are often used to find components or circuits which have excessive resistance. A voltage drop in a circuit is caused by a resistance when the circuit is in operation.
- Check the wire in the illustration. When measuring resistance with DMM, contact by a single strand of wire will give reading of 0 ohms. This would indicate a good circuit. When the circuit operates, this single strand of wire is not able to carry the current. The single strand will have a high resistance to the current. This will be picked up as a slight voltage drop.
- Unwanted resistance can be caused by many situations as follows:
- Undersized wiring (single strand example)
- Corrosion on switch contacts
- Loose wire connections or splices.
- If repairs are needed always use wire that is of the same or larger gauge.

Measuring Voltage Drop — Accumulated Method

- Connect the DMM across the connector or part of the circuit you want to check. The positive lead of the DMM should be closer to power and the negative lead closer to ground.
- Operate the circuit.
- The DMM will indicate how many volts are being used to "push" current through that part of the circuit.

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Revision: 2014 May GI-47 2014 QUEST

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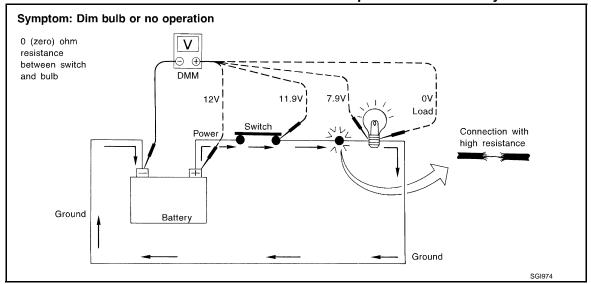
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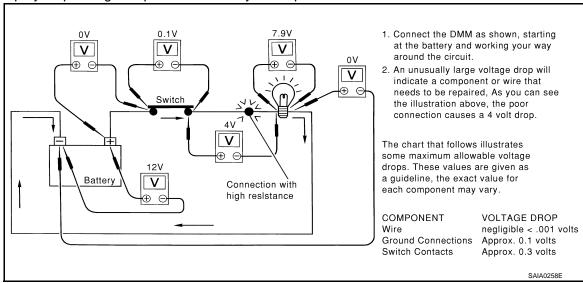
< BASIC INSPECTION >

Note in the illustration that there is an excessive 4.1 volt drop between the battery and the bulb.



Measuring Voltage Drop — Step-by-Step

- The step-by-step method is most useful for isolating excessive drops in low voltage systems (such as those in "Computer Controlled Systems").
- Circuits in the "Computer Controlled System" operate on very low amperage.
- The (Computer Controlled) system operations can be adversely affected by any variation in resistance in the system. Such resistance variation may be caused by poor connection, improper installation, improper wire gauge or corrosion.
- The step by step voltage drop test can identify a component or wire with too much resistance.

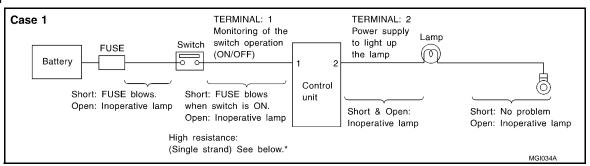


CONTROL UNIT CIRCUIT TEST

System Description

When the switch is ON, the control unit lights up the lamp.

CASE 1

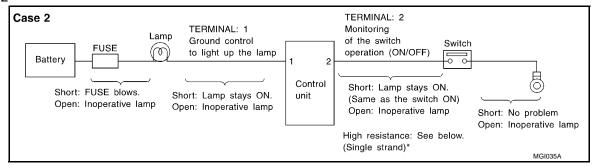


< BASIC INSPECTION >

INPUT-OUTPUT VOLTAGE CHART Terminal No. Description In case of high resistance such as single Condition Value (Approx.) Input/ strand (V) * Signal name Output Lower than battery voltage Approx. 8 (Ex-Switch ON Battery voltage Body ample) Switch 1 Input ground Switch OFF 0 V Approx. 0 Switch ON Battery voltage Approx. 0 (Inoperative lamp) Body 2 Output Lamp ground Switch OFF 0 V Approx. 0

- The voltage value is based on the body ground.
- *: If high resistance exists in the switch side circuit (caused by a single strand), terminal 1 does not detect battery voltage. Control unit does not detect the switch is ON even if the switch does not turn ON. Therefore, the control unit does not supply power to light up the lamp.

CASE 2



INPUT-OUTPUT VOLTAGE CHART

Tern	ninal No.	Descrip	tion			In case of high resistance such as single
+	_	Signal name	Input/ Output	Condition	Value (Approx.)	strand (V) *
	Body	Lomp	Output	Switch ON	0 V	Battery voltage (Inoperative lamp)
1	ground	Lamp	Output	Switch OFF	Battery voltage	Battery voltage
2	Body	Switch	Innut	Switch ON	0 V	Higher than 0 Approx. 4 (Example)
2	ground	Switch	Input	Switch OFF	5 V	Approx. 5

- · The voltage value is based on the body ground.
- *: If high resistance exists in the switch side circuit (caused by a single strand), terminal 2 does not detect approx. 0 V. Control unit does not detect the switch is ON even if the switch does not turn ON. Therefore, the control unit does not control ground to light up the lamp.

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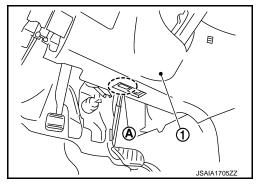
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CONSULT/GST CHECKING SYSTEM

CONSULT/GST CHECKING SYSTEM

Description INFOID:0000000009652483

- When CONSULT/GST is connected with a data link connector (A) equipped on the vehicle side, it will communicate with the control unit equipped in the vehicle and then enable various kinds of diagnostic tests.
 - 1 : Instrument lower panel LH
- Refer to "CONSULT Software Operation Manual" for more information.



INFOID:0000000009652484

CONSULT Function and System Application*1

FUNCTION

Mode	Function
All DTC Reading	Display all DTCs or diagnostic items that all ECUs are recording and judging.
Work Support	This mode enables a technician to adjust some devices faster and more accurately.
Self Diagnostic Results	Retrieve DTC from ECU and display diagnostic items.
Data Monitor	Monitor the input/output signal of the control unit in real time.
CAN Diagnosis	This mode displays a network diagnosis result about CAN by diagram.
CAN Diagnosis Support Monitor	It monitors the status of CAN communication.
Active Test	Send the drive signal from CONSULT to the actuator. The operation check can be performed.
ECU Identification	Display the ECU identification number (part number etc.) of the selected system.
Configuration	Function to READ/WRITE vehicle configuration.
SRT&P-DTC Confirmation	The state of System Readiness Test (SRT) items, the presence or absence of permanent DTC*, and driving conditions can be checked.
DTC work support	DTC reproduction procedure can be performed speedily and precisely.
Others	Other results or histories, etc. that are recorded in ECU are displayed.

^{*:} Permanent DTC is not applied for regions where it is not mandated.

SYSTEM APPLICATION*1

System	All DTC Reading	Work Support	Self Diagnostic Results	Data Monitor	CAN Diagnosis	CAN Diagnosis Support Monitor	Active Test	ECU Identification	Configuration	SRT&P-DTC Confirmation	DTC work support	Others
ENGINE	Х	х	х	х	х	х	х	х	-	x*2	х	-
TRANSMISSION	х	х	х	х	х	х	-	х	-	-	-	CALIB DATA
ABS	Х	х	х	Х	х	х	х	х	-	-	-	-

CONSULT/GST CHECKING SYSTEM

< BASIC INSPECTION >

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	ling	ort	Results	or	Sis	Support Monitor	+-	ttion	U	Confirmation	port		GI
System	All DTC Reading	Work Support	Self Diagnostic F	Data Monitor	CAN Diagnosis	Diagnosis	Active Test	ECU Identification	Configuration	SRT&P-DTC Conf	DTC work support	Others	В
						CAN							
AIR BAG	x	-	х	-	х	-	-	х	-	-	-	TROUBLE DIAG RECORD SELF-DIAG RESULT [CAN] CAUSE OF WARNING	D
IPDM E/R	х	-	х	х	х	х	х	х	-	-	-	-	Е
BCM	х	х	х	х	Х	х	х	х	х	-	-	-	
MULTI AV	-	х	х	х	Х	х	-	х	х	-	-	-	
METER / M&A	х	х	х	х	Х	х	-	-	-	-	-	Warning History	F
AUTO BACK DOOR	х	-	х	х	Х	х	-	х	-	-	-	-	
AUTO SLIDE DOOR	х	-	Х	х	х	Х	х	х	-	-	-	-	G
AUTO SLIDE DOOR RIGHT	х	-	Х	х	х	Х	х	х	-	-	-	-	
AUTO DRIVE POS.	х	х	х	х	х	Х	х	Х	-	-	-	-	
EPS	х	-	х	х	Х	х	-	х	-	-	-	-	Н
OCCUPANT DETECTION	-	х	-	-	-	-	-	-	-	-	-	-	
AVM	х	х	Х	х	х	Х	-	х	х	-	-	-	ı
BSW	х	-	х	х	х	х	х	х	-	-	-	-	1
SIDE RADAR LEFT	х	-	х	х	х	х	х	х	-	-	-	-	
SIDE RADAR RIGHT	Х	-	х	х	х	х	Х	Х	-	-	-	-	J

x: Applicable

CONSULT/GST Data Link Connector (DLC) Circuit

INSPECTION PROCEDURE

If the CONSULT/GST cannot diagnose the system properly, check the following items.

Symptom	Check item
CONSULT/GST cannot access any system.	CONSULT/GST DLC power supply circuit (Terminal 8 and 16) and ground circuit (Terminal 4 and 5)
CONSULT cannot access individual system. (Other systems can be accessed.)	 Power supply and ground circuit for the control unit of the system (For detailed circuit, refer to wiring diagram for each system.) Open or short circuit between the system and CONSULT DLC (For detailed circuit, refer to wiring diagram for each system.) Open or short circuit CAN communication line. Refer to LAN-17, "Trouble Diagnosis Flow Chart".

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NOTE:

The DDL1 and DDL2 circuits from DLC pins 12, 13, 14 and 15 may be connected to more than one system. A short in a DDL circuit connected to a control unit in one system may affect CONSULT access to other systems. If the GST cannot operate properly, check the circuit based on the information of SAE J1962 and ISO 15031-3.

Revision: 2014 May GI-51 2014 QUEST

^{*1:} If GST application is equipped, functions in accordance with SAE J1979 and ISO 15031-5 can be used.

^{*2:} Permanent DTC is not applied for regions where it is not mandated.

Wiring Diagram - CONSULT/GST CHECKING SYSTEM -

INFOID:0000000009652486 BSW CONTROL MODULE (M61): (NV) IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM) (E11) SIDE RADAR RH (B317) CPU ž AROUND VIEW MONITOR CONTROL UNIT SIDE RADAR LH
(B57) TCM (TRANSMISSION CONTROL MODULE) (F23) ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT) ★: This connector is not shown in "Harness Layout". DATA LINK CONNECTOR M4 FUSE BLOCK (J/B) (M1), (M2) OCCUPANT DETECTION SYSTEM CONTROL UNIT (B209) IGNITION SWITCH ON or START 10A BCM (BODY CONTROL I MODULE) 15A 6 BATTERY AIR BAG DIAGNOSIS SENSOR UNIT (M59) COMBINATION METER (M34) AV CONTROL UNIT (M180): (NV) AV CONTROL UNIT (M174): ON NO (ON) : Without NAVI (AB) : With automatic back door CONSULT CHECKING SYSTEM SLIDING DOOR CONTROL UNIT AUTOMATIC BACK DOOR CONTROL MODULE BB): AB B45 : (AS) AS ===: CAN communication line for diagnosis
===: DDL2 communication line

RE: With rear entertainment

AS: With automatic slide door

(AB: With NAVI DRIVER SEAT CONTROL UNIT SLIDING DOOR CONTROL UNIT RH (B247): AS FRONT SEAT (DRIVER SIDE) AS 2012/07/19

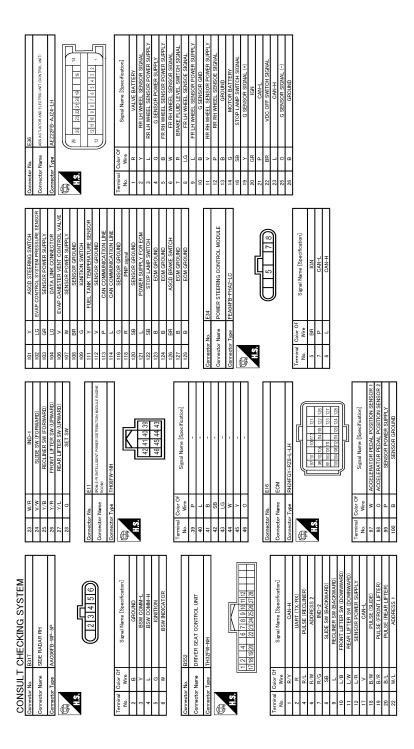
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CONSULT/GST CHECKING SYSTEM

			GI
0. UNIT RH	SW SW SW AND COOK CAL CAL CAL A A A A A A A A A A A A A A		В
ВВА7 SLIDING DOOR CONTROL UNIT RH TH22FW-NH [12 3 4 5 6 8 9 10 11 12 11 18 18 20 21 22 23 24 28 27 28 28 28 28 28 28 28 28 28 28 28 28 28	Signal Mane [Secoifration]		С
Connector No. Connector Type A.S. H.S.	Teaminal Color Of		D
	arbon J Al M N N N N N N N N N N N N N N N N N N		Е
BS7 ANCORFB-WP-SP	Signal Name Specification		F
Corrector No. BS7. Corrector Name SIDE Corrector Type AAO H.S.	Terminal Color Of		G
NIT LH	ER ER		
2FW-NH 2 4 5 8 9 9 1 1 1 1 1 1 1 1	Signal Mane [Secoification] MAN SW B-PLR SW HALF LATGH HARDLE SW GAD HALF LATGH SW GAD HARDLE SW GAD HARD		J
ector No.	Ferring Color		K
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			L
CONSULT CHECKING SYSTEM Connector No. Bit Connector Name Autrolatic acceptance of the control, wodule Connector Types TH26PW-TB6 TH 9 8 7 6 4 3 2 TH26PW-TB6 TH 9 8 7 6 5 4 3 2	Signal Mane (Speelfrador)		
			M
CONSUL Connector No. Connector Name Connector Type	Terminal Color Of No. Wire Physics Color Of Colo		Ν
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GI-53 Revision: 2014 May **2014 QUEST**



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00 00	SULT	CONSULT CHECKING SYSTEM									
Connector No.	or No.	F23	Connector No.	r No.	M1	Connector No.	No.	M4	15	BR	AIR BAG SIGNAL
Connecto	Connector Name	TCM (TRANSMISSION CONTROL MODULE)	Connector Name	yr Name	FUSE BLOCK (J/B)	Connector Name		DATA LINK CONNECTOR	16	ے د	ENGINE COOLANT TEMPERATURE SIGNAL AMBIENT SENSOR SIGNAL
Connector Type	or Type	RH40FB-RZ8-L-RH	Connector Type	r Type	NS06FW-M2	Connector Type	Т	BD16FW	19	T	A/C AUTO AMP. CONNECTION RECOGNITION SIGNAL
ą			ą	_		ģ			20	\	AMBIENT SENSOR GROUND
厚		1	医			医			21	_	CAN-H
H.S.		31 22 33 34 37 38 39 40 47 48	H.S.		3A 3A 1A	¥.S			22	٠.	CAN-L
		19 20			24000			11 14 16	24		FUEL LEVEL SENSOR GROUND
		2 3			8A /A 6A 3A 4A			3 4 5 6 7 8	25	BR	ALTERNATOR SIGNAL
]				26	BR >	PARKING BRAKE SWITCH SIGNAL
Termina	Terminal Color Of	ě	Terminal	Color Of		Terminal	Color Of	3	28	- >	SECURITY SIGNAL
No.	Wire	Signal Name [Specification]	No.	Wire	Signal Name [Specification]	No.	Wire	Signal Name [Specification]	59	ŋ	WASHER LEVEL SWITCH SIGNAL
-	B/B		14	≻	-	9	ΓC	-	31	SB	VEHICLE SPEED SIGNAL (8-PULSE)
2	P/L		2A	g	-	4	B/R	-	32	Ь	OVERDRIVE CONTROL SWITCH SIGNAL
es	0/9	TRANSMIS	3A	٦	-	2	B/R	-	34	0	FUEL LEVEL SENSOR SIGNAL
4	GR.	TRANSMISSION F	44	æ		9	_	•	35	1	SEAT BELT BUCKLE SWITCH SIGNAL (DRIVER SIDE)
2	В	GROUND	2A	>	1	7	œ	1	36	BR	PASSENGER SEAT BELT WARNING SIGNAL
7	≥		6A	œ	1	00	G	1			
00	W/S		Α.	ğ		=	g	1			
6	Z	ROM ASSY (SEL 1)	8A	_	-	14	۵	-	Connector No.	1	M59
10	BR/R					16	0		Connector Name		AIR BAG DIAGNOSIS SENSOR LINIT
11	BR/W	TRANSMIS							10000	П	
13	>	CVT FLUID	Connector No.	or No.	M2				Connector Type	Ī	NH28FY-EX
14	R/W		Connecto	Connector Name	FLISE BLOCK (L/B)	Connector No.		M34	ģ		
15	W/W	SEC	000	o la	(a/b) (a/b)	Companion Name		COMBINATION METER	医		7
19	G/B	BA	Connector Type		NS10FW-CS			COMPLETE METERS	Ę		0 0
20	R/B		4			Connector Type		TH40FW-NH			1 X T
25	W/R		逐			ģ					40 60 64 03
26	0/7	SENSOR POWER				F					37
27	R/G				48 38	\ \frac{1}{2}					18 51 53 60 59 25 57 1
28	α	STEP MOTOR C			-		L	7			
59	0/B	STEP MOTOR B			10g 3g 3g ag		13	2 3 4 5 8 1011 1213 1415 16 1819 20	lar.	Color Of	Simul Nama [Specification]
30	G/R						2	1 22 25 24 25 26 26 26 26 26 31 32 32 32 32 36 36	No.	Wire	Programme and a section
31	۵	CAN-L							-	>	IGN
32	_	CAN-H	Terminal	O	Signal Name [Specification]				2	B/R	GROUND
33	FC	PRIMA	No.	Wire	Disconnected of the second	al	Color Of	Simal Nama [Spacification]	3	9	DR1 (+)
34	LG/R		10B	œ	-	No.	Wire	Disconnected arranged	4	٨	DR1 (-) DR2 (-)
37	V/R		38	>	-	-	0	BATTERY POWER SUPPLY	2	^	DR 2 (+)
38	r/w	H	48	W		2	Υ	IGNITION SIGNAL	9	SB	AS1 (+)
39	M/B	SECONDARY PRESSURE SOLENOID VALVE	2B	BR	-	3	В	GROUND	7	BR	AS1 (-)
40	R/Y	LINE PRESSURE SOLENOID VALVE	99	0	-	4	В	GROUND	89	9	AS 2 (+)
42	В	GROUND	8B	R/L	1	2	B/P	ILLUMINATION CONTROL SIGNAL	6	ď	AS 2 (-)
46	Υ	IGNITION POWER SUPPLY	96	GR	-	89	SB	TRIP RESET SWITCH SIGNAL	18	T/M	ECZS (+)
47	L/R	BATTERY POWER SUPPLY (MEMORY BUCK-UP)				10	Ь	METER CONTROL SWITCH GROUND	16	W/R	ECZS (-)
48	Υ	IGNITION POWER SUPPLY				11	5	ENTER SWITCH SIGNAL	22	GR	GROUND
						12	BR	SELECT SWITCH SIGNAL	23	BR	AIRBAG W/L
						13	>	ILLUMINATION CONTROL SWITCH SIGNAL (+)	Н	BR	SEATBELT W/L
						**	,	(1) INDICATION CONTROL PRINTED INCIDENTIAL	üc		OUTOER TELL TALE

Revision: 2014 May GI-55 2014 QUEST

	80 G IGNITION	81 BR REVERSE	82 Y VEHICLE SPEED SIGNAL (8-PULSE)	83 SHIELD SHIELD	84 B COMPOSITE IMAGE SYNC	87 BR MICROPHONE SIGNAL	88 SHELD SHELD	R		91 SB AV COMM (H)	92 V AV COMM (H)			Connector No. M253	Comment of the state of the sta		Connector Type TH40FW-NH	đ.	1000			2 4 8 10 12 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8			Torminal Orlan Of		- B	2 Y BATTERY	4 G IGNITION SIGNAL	8 V REVERSE SIGNAL	10 P CAN-L	7	Z3 SHELD	24 Y CAMERA IMAGE SIGNAL	REAR	27 SHIELD SHIELD	28 W REAR CAMERA IMAGE SIGNAL	29 B SIDE CAMERA DRIVER SIDE GND	30 R SIDE CAMERA DRIVER SIDE POWER SUPPLY	31 SHIELD SHIELD	32 W SIDE CAMERA DRIVER SIDE IMAGE SIGNAL	33 B SIDE CAMERA PASSENGER SIDE GND	34 R SIDE CAMERA PASSENGER SIDE POWER SUPPLY	9	36 W SIDE CAMERA PASSENGER SIDE IMAGE SIGNAL	9 0	2 1
	Signal Name [Specification]	Officer Hause Copportionation	AV COMM (L)	AV COMM (H)	AV COMM (L)	AV COMM (H)	CAN-L	CAN-H	SW GND	SOUND SIGNAL (+)	SOUND SIGNAL (-)	HEADPHONE SOUND SIGNAL RH (+)	HEADPHONE SOUND SIGNAL RH (-)	VEHICLE SPEED SIGNAL (8-PULSE)	PARKING BRAKE	REVERSE	IGNITION	DISK EJECT SIGNAL	AUX SOUND SIGNAL GND	AUX SOUND SIGNAL LH (+)	AUX SOUND SIGNAL RH (+)	SHIELD	HEADPHONE SOUND SIGNAL LH (+)	HEADPHONE SOUND SIGNAL LH (=)		Miso		AV CONTROL UNIT	TH32FW-NH				2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	w or oc oc oc oc		Signal Name [Specification]	officer ivarie Lopecinication	PARKING BRAKE	COMPOSITE IMAGE SIGNAL GND	COMPOSITE IMAGE SIGNAL	SHIELD	MICROPHONE VCC	COMM (CONT-DISP)	CAN-L	AV COMM (L)	AV COMM (L)
	lal C	No. Wire	76 LG	77 V	78 LG	9S 6/	80 P	81 L	82 W	87 R	88 W	90 BR	91 Y	92 Y	93 W	94 BR	95 G	96 BR	102 W	103 B	104 R	+	106 P	107 L		Connector No.	Ι	Connector Name	Connector Type		逐	H.S.		<u></u>	-11		Terminal Color Of	No. Wire	65 W	67 W	68 R	71 SHIELD	72 Y	+	74 P	+	+
	O COMBI SW INPUT 3	G COMBI SW INPUT 2	L COMBI SW INPUT 1	W KEY CYL UNLOCK SW	GR PW SW COMM [With automatic sliding door]	Y KEY CYL LOCK SW [Without automatic sliding door]	V STOP LAMP SW 1	GR DOOR LK & UNLK SW LOCK	Ĺ	L OPTICAL SENS	W REAR WINDOW DEF SW	Y DIMMER	0 SENS PWR SPLY	R RECEIV/SENS GND	R NATS ANT AMP.	V SECURITY IND CONT	B DONGLE LINK	W NATS ANT AMP.	O A/C ON	BR BLOWER FAN ON	P HAZARD SW		O DR DOOR UNLK SENS	Y COMBI SW OUTPUT 5	W COMBLSW OUTPUL 4			G DETENT SW	SB RECEIVER COMM	L CAN-H	P CAN-L			Τ	r Name AV CONTROL UNIT	Connector Type TH32FW-NH					76 77 78 79 80 81 82 87 88 99 91	92 93 94 95 96 100 1002 1003 1004 106 106 107					
	4	5	9	7	8	89	6	12	13	41	15	91	17	18	21	23	24	25	27	28	59	30	31	32	33	± 35	38	37	38	39	40			Connector No.	Connector Name	Connector	ģ	F	Š								
CONSULT CHECKING SYSTEM	SIDE SENS RH2+	SIDE SENS RH2-	SIDE SENS LH2+	SIDE SENS LH2-	DEPLOYMENT INFORMATION OUTPUT	CAN-H	CAN-L			M61	BILIDOM IODINOS MISO	BSW CONTROL MODOLE	TH16FW-NH			7		8 7 6 4 1	16 15 14			Signal Name [Specification]		BSW SWITCH	GNI NO MSB	BSW COMM-H	BSW COMM=L	CAN-H	CAN-L	IGNITION			MT21	BCM (BODY CONTROL MODULE)	TH40FB-NH				2 3 4 5 8 7 8 0 C C C C C C C C C C C C C C C C C C	20 24 25 20 20 20 20 20 20 20 20 20 20 20 20 20				Signal Name [Specification]	TIMOS VALIDO TIPO MODIMAN DA 10	COMPLEM MINDER CON	COMBL SW INFOL 3
CONSULT	51 B/Y	52 LG	53 L/R	54 L/G	57 0	7 69	9 o			connector No.	Consoster Mone	ormector Name	Connector Type		Æ	۳	2					la D	No. wire	HE:	4 4 6 D/W	2	× 8	14 L	15 P	16 G			connector No.	Connector Name	Connector Type		偃	ŭ.		16	1			la O	No. Wire	× -	7

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CONSULT/GST CHECKING SYSTEM

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40 | W | FRONT CAMERA IMAGE SIGNAL M Ν 0 JRAWC0621GB Ρ

Revision: 2014 May GI-57 2014 QUEST

INSPECTION AND ADJUSTMENT

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL

ADDITIONAL SERVICE WHEN REMOVING BATTERY NEGATIVE TERMINAL : Required Procedure After Battery Disconnection

SYSTEM	ITE	REFERENCE						
	Temperature setting trimmer (Fro	HAC-82, "Temperature Setting Trimmer (Front)"						
	Temperature setting trimmer (Rea	HAC-83, "Temperature Setting Trimmer (Rear)"						
	Foot position setting trimmer	HAC-84, "Foot Position Setting <u>Trimmer"</u>						
	Inlet port memory function	HAC-84, "Inlet Port Memory Func- tion"						
Automatic air conditioning system	Inlet port memory function (FRE)	_						
oyoto	Inlet port memory function (REC)	_						
	Exhaust gas / outside odor detection justment function *2	HAC-85, "Exhaust Gas/Outside Odor Detecting Sensor Sensitivity Adjustment Function"						
	Auto intake switch interlocking m	HAC-85, "AUTO Intake Switch Interlocking Movement Change Function"						
	Clean switch interlocking movem	_						
Automatic drive positioner	Automatic drive positioner system	ADP-46, "Description"						
Power window control	Power window control system	FRONT WINDOW ANTI- PINCH	PWC-92, "Description"					
r ower window control	Tower window control system	DRIVER SIDE WINDOW ANTI-PINCH	PWC-32, "Description"					
Sunroof system	Sunroof system	_						
Sunshade system	Sunshade system	_						
Rear view monitor	Rear view monitor predictive coument	_						
Around view monitor	Predictive course line center pos	_						
Automatic sliding door system*1	Automatic sliding door system	DLK-168, "AUTOMATIC SLIDING DOOR SYSTEM : Description"						
Automatic back door system*1	Automatic back door system	DLK-168, "AUTOMATIC BACK DOOR SYSTEM : Description"						
Engine oil level read*1	Engine oil level read	_						

^{*1:} Not equipped.

^{*2:} With ACCS (Advanced climate control system)