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TM

SECTION

TRANSAXLE & TRANSMISSION

TM

CONTENTS

CVT: RE0F09B		E
PRECAUTION	5	F
PRECAUTIONS	5	G
Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	5	H
Precaution for Battery Service	5	
Precaution for Procedure without Cowl Top Cover.....	5	
Precaution for On Board Diagnosis (OBD) System of CVT and Engine	5	I
Precaution for TCM and Transaxle Assembly Replacement	6	J
Removal and Installation Procedure for CVT Unit Connector	6	K
Precaution	7	
Service Notice or Precaution	8	L
PREPARATION	9	
PREPARATION	9	M
Special Service Tools	9	
Commercial Service Tools	9	
SYSTEM DESCRIPTION	11	N
COMPONENT PARTS	11	
CVT CONTROL SYSTEM	11	O
CVT CONTROL SYSTEM : Component Parts Location	11	
CVT CONTROL SYSTEM : TCM	12	
CVT CONTROL SYSTEM : ROM Assembly	13	
CVT CONTROL SYSTEM : Transmission Range Switch	13	P
CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor	13	
CVT CONTROL SYSTEM : Primary Speed Sensor	13	
CVT CONTROL SYSTEM : Secondary Speed Sensor	14	
CVT CONTROL SYSTEM : Primary Pressure Sensor	14	
CVT CONTROL SYSTEM : Secondary Pressure Sensor	15	
CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve	15	
CVT CONTROL SYSTEM : Line Pressure Solenoid Valve	15	
CVT CONTROL SYSTEM : Torque Converter Clutch Solenoid Valve	16	
CVT CONTROL SYSTEM : Lock-up Select Solenoid Valve	16	
CVT CONTROL SYSTEM : Step Motor	16	
CVT CONTROL SYSTEM : Manual Mode Switch.....	16	
CVT CONTROL SYSTEM : Shift Position Indicator	16	
SHIFT LOCK SYSTEM	16	K
SHIFT LOCK SYSTEM : Component Parts Location	17	
STRUCTURE AND OPERATION	18	L
TRANSAXLE	18	M
TRANSAXLE : Sectional View	18	
TRANSAXLE : Main Component Elements	18	
TRANSAXLE : Oil Pressure System	22	
TRANSAXLE : Component Description	23	N
SYSTEM	25	
CVT CONTROL SYSTEM	25	O
CVT CONTROL SYSTEM : System Diagram	25	
CVT CONTROL SYSTEM : Circuit Diagram	26	
CVT CONTROL SYSTEM : Fail-safe	28	P
LINE PRESSURE AND SECONDARY PRESSURE CONTROL	30	
LINE PRESSURE AND SECONDARY PRESSURE CONTROL : System Description	31	
SHIFT CONTROL	32	
SHIFT CONTROL : System Description	33	

SELECT CONTROL	35	Work Procedure	80
SELECT CONTROL : System Description	36		
LOCK-UP CONTROL	37	ROAD TEST	82
LOCK-UP CONTROL : System Description	38	Description	82
INFINITI DRIVE MODE SELECTOR	39	Check before Engine Is Started	82
Infiniti Drive Mode Selector : System Description...	39	Check at Idle	82
SHIFT LOCK SYSTEM	39	Cruise Test	83
SHIFT LOCK SYSTEM : System Description	39	CVT POSITION	85
ON BOARD DIAGNOSTIC (OBD) SYSTEM	41	Inspection and Adjustment	85
Diagnosis Description	41	DTC/CIRCUIT DIAGNOSIS	87
GST (Generic Scan Tool)	41	U0100 LOST COMMUNICATION (ECM A)	87
DIAGNOSIS SYSTEM (TCM)	42	Description	87
DIAGNOSIS DESCRIPTION	42	DTC Logic	87
DIAGNOSIS DESCRIPTION : System Description	42	Diagnosis Procedure	87
... 42	42	U1000 CAN COMM CIRCUIT	88
DIAGNOSIS DESCRIPTION : DTC	42	Description	88
DIAGNOSIS DESCRIPTION : Malfunction Indica-	42	DTC Logic	88
tor Lamp (MIL)	42	Diagnosis Procedure	88
CONSULT Function	42	U1010 CONTROL UNIT (CAN)	89
ATFTEMP COUNT Conversion Table	46	DTC Logic	89
ECU DIAGNOSIS INFORMATION	47	Diagnosis Procedure	89
TCM	47	P0615 STARTER RELAY	90
Reference Value	47	DTC Logic	90
Fail-safe	53	Diagnosis Procedure	90
DTC Inspection Priority Chart	54	P0703 BRAKE SWITCH B	92
DTC Index	55	DTC Logic	92
WIRING DIAGRAM	57	Diagnosis Procedure	92
CVT CONTROL SYSTEM	57	Component Inspection (Stop Lamp Switch)	94
Wiring Diagram	57	P0705 TRANSMISSION RANGE SWITCH A ...	95
CVT SHIFT LOCK SYSTEM	70	DTC Logic	95
Wiring Diagram	70	Diagnosis Procedure	96
BASIC INSPECTION	74	Component Inspection (Transmission Range	97
DIAGNOSIS AND REPAIR WORK FLOW	74	Switch)	97
Work Flow	74	P0710 TRANSMISSION FLUID TEMPERA-	98
Diagnostic Work Sheet	75	TURE SENSOR A	98
ADDITIONAL SERVICE WHEN REPLACING		DTC Logic	98
TCM	76	Diagnosis Procedure	99
Description	76	Component Inspection (CVT Fluid Temperature	99
Procedure	76	Sensor)	99
ADDITIONAL SERVICE WHEN REPLACING		P0715 INPUT SPEED SENSOR A	101
TRANSAXLE ASSEMBLY	77	DTC Logic	101
Description	77	Diagnosis Procedure	101
Procedure	77	P0720 OUTPUT SPEED SENSOR	103
STALL TEST	79	DTC Logic	103
Work Procedure	79	Diagnosis Procedure	103
LINE PRESSURE TEST	80	P0725 ENGINE SPEED	106
		Description	106
		DTC Logic	106
		Diagnosis Procedure	106

P0740 TORQUE CONVERTER	107	P0868 TRANSMISSION FLUID PRESSURE .	129	
DTC Logic	107	Description	129	A
Diagnosis Procedure	107	DTC Logic	129	
Component Inspection (Torque Converter Clutch Solenoid Valve)	108	Diagnosis Procedure	130	B
P0744 TORQUE CONVERTER	109	Component Inspection (Line Pressure Solenoid Valve)	131	
Description	109	Component Inspection (Secondary Pressure Solenoid Valve)	131	C
DTC Logic	109	P1701 TCM	132	
Diagnosis Procedure	109	Description	132	TM
P0745 PRESSURE CONTROL SOLENOID A .	111	DTC Logic	132	
DTC Logic	111	Diagnosis Procedure	132	
Diagnosis Procedure	111	P1705 TP SENSOR	135	E
Component Inspection (Line Pressure Solenoid Valve)	112	DTC Logic	135	
P0746 PRESSURE CONTROL SOLENOID A .	113	Diagnosis Procedure	135	F
Description	113	P1709 INCOMPLETED DATA WRITING	136	
DTC Logic	113	Description	136	G
Diagnosis Procedure	114	DTC Logic	136	
Component Inspection (Line Pressure Solenoid Valve)	114	Diagnosis Procedure	136	H
P0776 PRESSURE CONTROL SOLENOID B .	115	P1722 VEHICLE SPEED	138	
Description	115	Description	138	I
DTC Logic	115	DTC Logic	138	J
Diagnosis Procedure	116	Diagnosis Procedure	138	K
Component Inspection (Secondary Pressure Solenoid Valve)	116	P1723 SPEED SENSOR	139	L
P0778 PRESSURE CONTROL SOLENOID B .	117	Description	139	
DTC Logic	117	DTC Logic	139	M
Diagnosis Procedure	117	Diagnosis Procedure	139	
Component Inspection (Secondary Pressure Solenoid Valve)	118	P1726 THROTTLE CONTROL SIGNAL	140	N
P0826 UP AND DOWN SHIFT SW	119	Description	140	
DTC Logic	119	DTC Logic	140	O
Diagnosis Procedure	119	Diagnosis Procedure	140	P
Component Inspection (Manual Mode Switch)	121	P1740 SELECT SOLENOID	141	
P0840 TRANSMISSION FLUID PRESSURE SEN/SW A	122	DTC Logic	141	
DTC Logic	122	Diagnosis Procedure	141	
Diagnosis Procedure	122	Component Inspection (Lock-up Select Solenoid Valve)	142	
P0841 TRANSMISSION FLUID PRESSURE SEN/SW A	124	P1777 STEP MOTOR	143	
Description	124	DTC Logic	143	
DTC Logic	124	Diagnosis Procedure	143	
Diagnosis Procedure	124	Component Inspection (Step Motor)	144	
Component Inspection (Line Pressure Solenoid Valve)	125	P1778 STEP MOTOR	146	
Component Inspection (Secondary Pressure Solenoid Valve)	125	Description	146	
P0845 TRANSMISSION FLUID PRESSURE SEN/SW B	127	DTC Logic	146	
DTC Logic	127	Diagnosis Procedure	146	
Diagnosis Procedure	127	SHIFT POSITION INDICATOR CIRCUIT	148	
		Component Function Check	148	
		Diagnosis Procedure	148	
		SHIFT LOCK SYSTEM	149	
		Component Function Check	149	
		Diagnosis Procedure	149	

Component Inspection (Stop Lamp Switch)	151	DIFFERENTIAL SIDE OIL SEAL	180
SYMPTOM DIAGNOSIS	152	Exploded View	180
SYSTEM SYMPTOM	152	Removal and Installation	180
Symptom Table	152	Inspection	181
PERIODIC MAINTENANCE	164	AIR BREATHER HOSE	182
CVT FLUID	164	Exploded View	182
Inspection	164	Removal and Installation	182
Changing	165	CVT FLUID COOLER	183
CVT FLUID COOLER SYSTEM	166	Exploded View	183
Cleaning	166	Removal and Installation	183
REMOVAL AND INSTALLATION	169	UNIT REMOVAL AND INSTALLATION ...	184
TCM	169	TRANSAXLE ASSEMBLY	184
Exploded View	169	Exploded View	184
Removal and Installation	169	Removal and Installation	185
Adjustment	170	Inspection and Adjustment	187
CVT SHIFT SELECTOR	171	UNIT DISASSEMBLY AND ASSEMBLY ..	189
Exploded View	171	TORQUE CONVERTER	189
Removal and Installation	171	Exploded View	189
Inspection and Adjustment	173	Disassembly	189
CONTROL CABLE	175	Assembly	189
Exploded View	175	Inspection	190
Removal and Installation	175	SERVICE DATA AND SPECIFICATIONS	
OIL PAN	177	(SDS)	191
Exploded View	177	SERVICE DATA AND SPECIFICATIONS	
Removal and Installation	177	(SDS)	191
Inspection	178	General Specification	191
SECONDARY SPEED SENSOR	179	Shift Characteristics	191
Exploded View	179	Stall Speed	191
Removal and Installation	179	Line Pressure	191
Inspection	179	Torque Converter	192

< PRECAUTION >

PRECAUTION

PRECAUTIONS

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

INFOID:000000008487439

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 dual stage front air bag modules. The SRS system may only deploy one front air bag, depending on the severity of a collision and whether the front passenger seat is occupied. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which 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 the SR section.
- Do not 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:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT 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 Battery Service

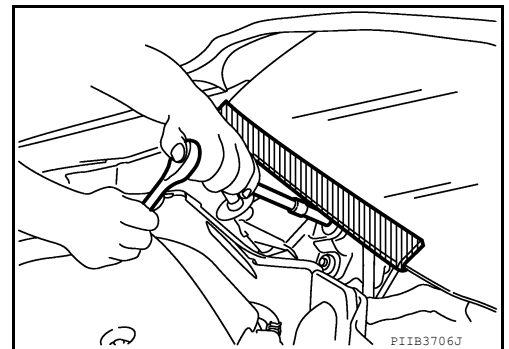
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Before disconnecting the battery, lower both the driver and passenger windows. This will prevent any interference between the window edge and the vehicle when the door is opened/closed. During normal operation, the window slightly raises and lowers automatically to prevent any window to vehicle interference. The automatic window function will not work with the battery disconnected.

Precaution for Procedure without Cowl Top Cover

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



Precaution for On Board Diagnosis (OBD) System of CVT and Engine

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

CAUTION:

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C
TM
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PRECAUTIONS

[CVT: RE0F09B]

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- Be sure to turn the ignition switch OFF and disconnect the battery cable from the negative terminal before any repair or inspection work. The open/short circuit of related switches, sensors, solenoid valves, etc. will cause the MIL to light up.
- Be sure to connect and lock the connectors securely after work. A loose (unlocked) connector will cause the MIL to light up due to an open circuit. (Be sure the connector is free from water, grease, dirt, bent terminals, etc.)
- Be sure to route and secure the harnesses properly after work. Interference of the harness with a bracket, etc. may cause the MIL to light up due to a short circuit.
- Be sure to connect rubber tubes properly after work. A misconnected or disconnected rubber tube may cause the MIL to light up due to a malfunction of the EVAP system or fuel injection system, etc.
- Be sure to erase the unnecessary malfunction information (repairs completed) from the TCM and ECM before returning the vehicle to the customer.

Precaution for TCM and Transaxle Assembly Replacement

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CAUTION:

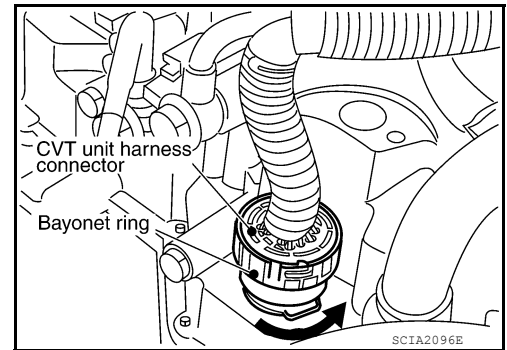
- To replace TCM, refer to [TM-76, "Description"](#).
- To replace transaxle assembly, refer to [TM-77, "Description"](#).

Removal and Installation Procedure for CVT Unit Connector

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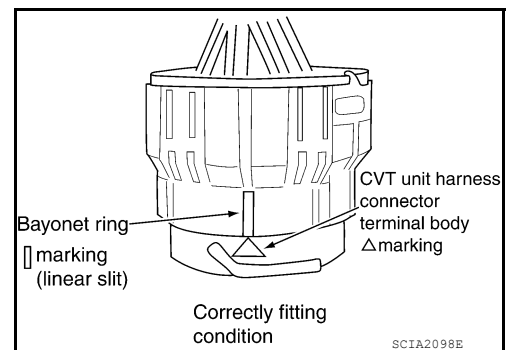
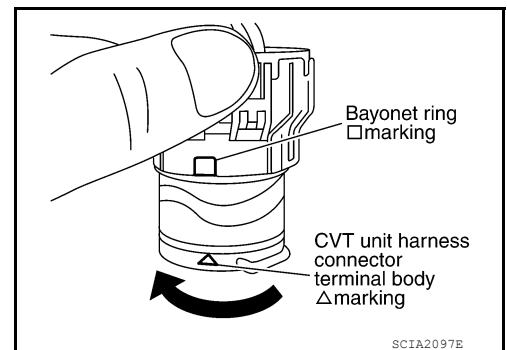
REMOVAL

Rotate bayonet ring counterclockwise. Pull out CVT unit harness connector upward and remove it.



INSTALLATION

1. Align Δ marking on CVT unit harness connector terminal body with \square marking on bayonet ring. Insert CVT unit harness connector. Then rotate bayonet ring clockwise.
2. Rotate bayonet ring clockwise until Δ marking on CVT unit harness connector terminal body is aligned with the slit on bayonet ring as shown in the figure (correctly fitting condition). Install CVT unit harness connector to CVT unit harness connector terminal body.



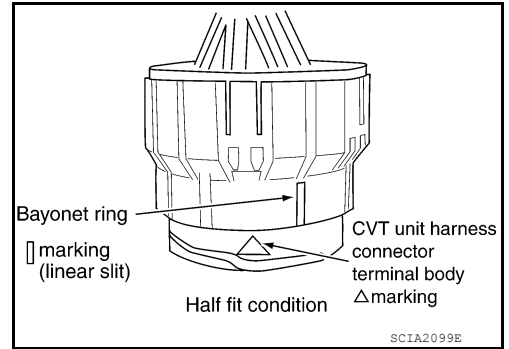
CAUTION:

PRECAUTIONS

[CVT: RE0F09B]

< PRECAUTION >

- Securely align Δ marking on CVT unit harness connector terminal body with bayonet ring slit. Then, be careful not to make a half fit condition as shown in the figure.
- Never mistake the slit of bayonet ring for other dent portion.



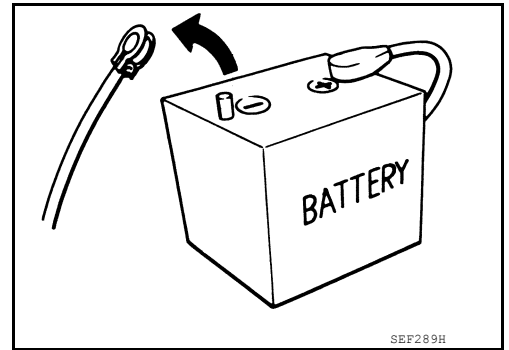
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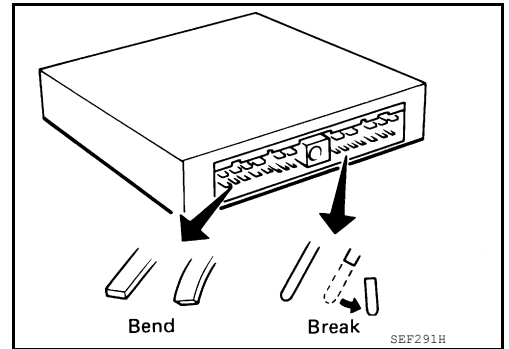
Precaution

- Turn ignition switch OFF and disconnect negative battery cable before connecting or disconnecting the TCM harness connector. Because battery voltage is applied to TCM even if ignition switch is turned OFF.



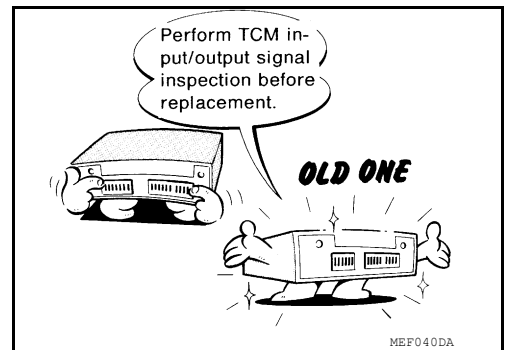
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- When connecting or disconnecting pin connectors into or from TCM, do not damage pin terminals (bend or break). Check that there are not any bends or breaks on TCM pin terminal, when connecting pin connectors.



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- Perform TCM input/output signal inspection and check whether TCM functions normally or not before replacing TCM. [TM-47. "Reference Value"](#).



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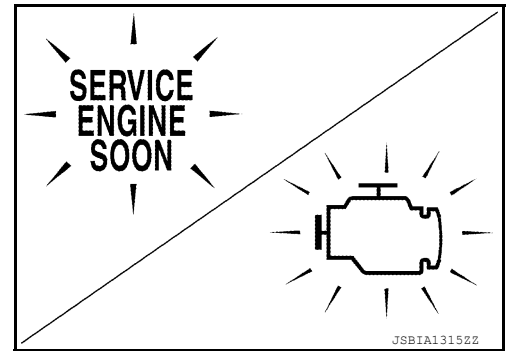
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PRECAUTIONS

[CVT: RE0F09B]

< PRECAUTION >

- Perform “DTC Confirmation Procedure” after performing each TROUBLE DIAGNOSIS.
If the repair is completed the DTC should not be displayed in the “DTC Confirmation Procedure”.
- Always use the specified brand of CVT fluid. Refer to [MA-11, "Fluids and Lubricants"](#).
- Use lint-free paper, not cloth rags, during work.
- Dispose of the waste oil using the methods prescribed by law, ordinance, etc. after replacing the CVT fluid.



Service Notice or Precaution

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OBD SELF-DIAGNOSIS

- CVT self-diagnosis is performed by the TCM in combination with the ECM. The results can be read through the blinking pattern of the Malfunction Indicator Lamp (MIL). Refer to the table on [TM-55, "DTC Index"](#) for the indicator used to display each self diagnostic results.
- The self diagnostic results indicated by the MIL are automatically stored in both the ECM and TCM memories.

Always perform the procedure on [TM-41, "Diagnosis Description"](#) to complete the repair and avoid unnecessary blinking of the MIL.

For details of OBD, refer to [EC-67, "Diagnosis Description"](#).

- **Certain systems and components, especially those related to OBD, may use the new style slide-locking type harness connector. For description and how to disconnect, refer to [PG-4, "Harness Connector"](#).**

PREPARATION

[CVT: RE0F09B]

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PREPARATION

PREPARATION

Special Service Tools

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The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description
— (OTC3492) Oil pressure gauge set	Measuring line pressure
— (J-47244) Drift a: 65.83 mm (2.59 in) dia. b: 53.85 mm (2.12 in) dia.	Installing differential side oil seal (transaxle case side)
— (J-47005) Drift a: 69.85 mm (2.75 in) dia. b: 49.53 mm (1.95 in) dia.	Installing differential side oil seal (converter housing side) (2WD)
KV40100621 (J-25273) Drift a: 76 mm (2.99 in) dia. b: 69 mm (2.72 in) dia.	Installing side oil seal (transfer joint) (AWD)

Commercial Service Tools

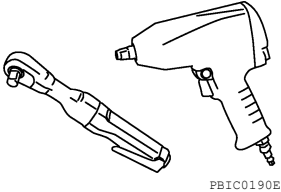
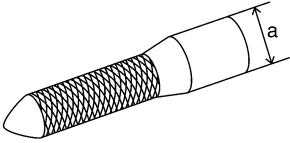
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PREPARATION

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Tool number Tool name	Description
Power tool  PBIC0190E	Loosening nuts and bolts
31197CA000 Drive plate location guide a: 14 mm (0.55 in) dia.  SCTA2013E	Installing transaxle assembly

COMPONENT PARTS

[CVT: RE0F09B]

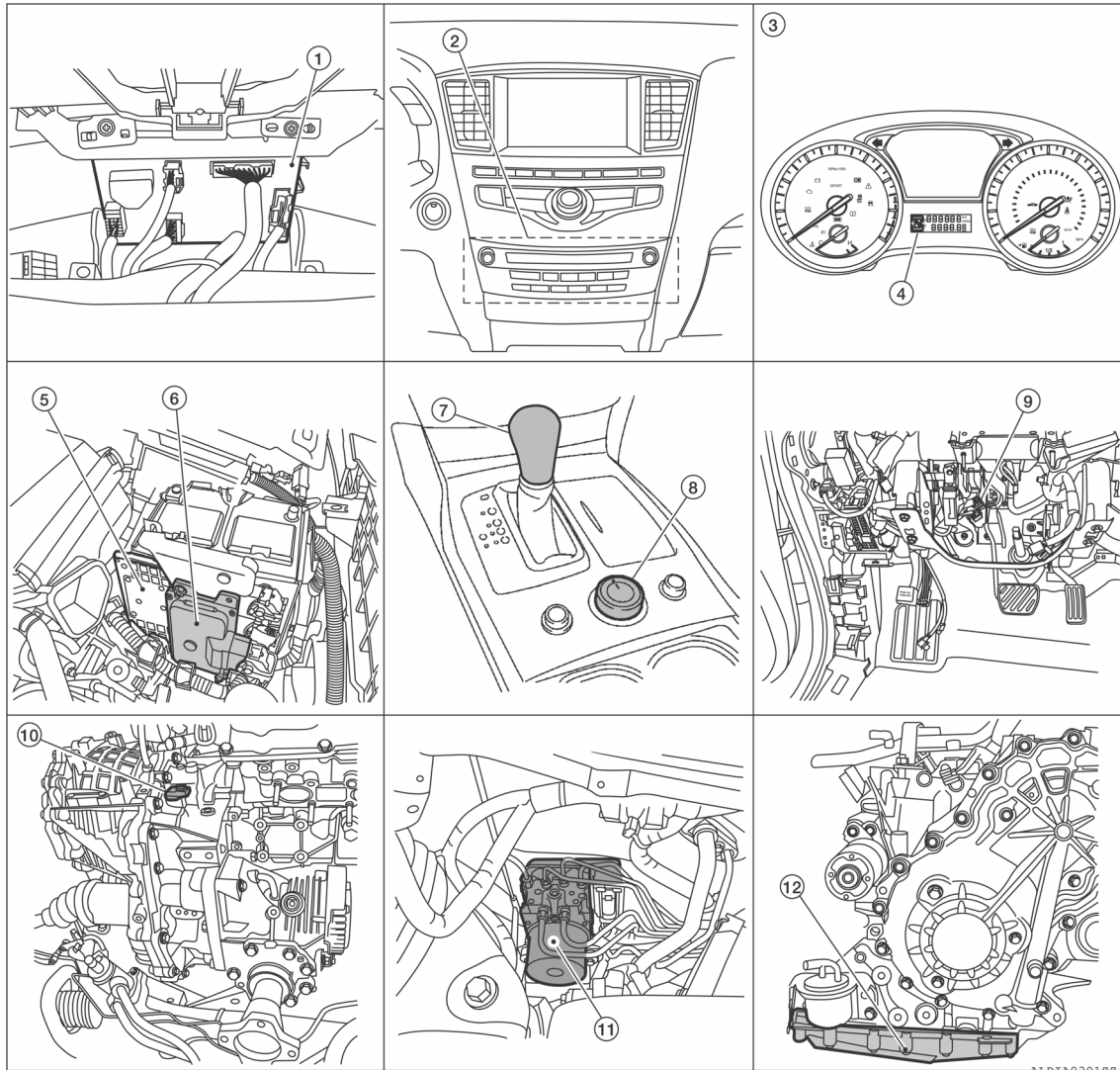
< SYSTEM DESCRIPTION >

SYSTEM DESCRIPTION

COMPONENT PARTS CVT CONTROL SYSTEM

CVT CONTROL SYSTEM : Component Parts Location

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COMPONENT DESCRIPTION

No.	Component	Function
1.	BCM (view with combination meter removed)	The TCM receives the following signal via CAN communications from the BCM for judging the vehicle driving conditions. <ul style="list-style-type: none"> • Stop lamp switch signal
2.	A/C auto Amp.	The TCM receives the following signal via CAN communications from the combination meter for judging the driving request from the driver. <ul style="list-style-type: none"> • STANDARD mode signal • ECO mode signal • SPORT mode signal • SNOW mode signal

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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

No.	Component		Function	
3.	Combination meter		The TCM receives the following signal via CAN communications from the combination meter for judging the driving request from the driver. <ul style="list-style-type: none"> • Manual mode signal • Non-manual mode signal • Manual mode shift up signal • Manual mode shift down signal 	
4.	Shift position indicator		TM-16, "CVT CONTROL SYSTEM : Shift Position Indicator"	
5.	TCM		TM-12, "CVT CONTROL SYSTEM : TCM"	
6.	ECM		<ul style="list-style-type: none"> • For purposes including improving the feeling when shifting speeds and preventing drops in engine speed, control signals are exchanged between the ECM and TCM, and real-time cooperative control is performed according to the vehicle driving conditions. (Engine and CVT integrated control) - Engine and CVT integrated control signal <p>NOTE: General term for the communication (torque-down permission, torque down request, etc.) exchanged between the ECM and TCM.</p> <ul style="list-style-type: none"> • The TCM receives the following signal via CAN communications from the ECM for judging the vehicle driving conditions. - Engine speed signal - Accelerator pedal position signal - Closed throttle position signal - ASCD operation signal 	
7.	CVT shift selector	Manual mode switch	TM-16, "CVT CONTROL SYSTEM : Manual Mode Switch"	
8.	Drive mode select switch		DMS-4, "Drive Mode Select Switch"	
9.	Stop lamp switch		BRC-10, "Stop Lamp Switch"	
10.	Secondary speed sensor		TM-14, "CVT CONTROL SYSTEM : Secondary Speed Sensor"	
11.	ABS actuator and electronic unit (control unit)		The TCM receives the following signal via CAN communications from the ECM for judging the vehicle driving conditions. <ul style="list-style-type: none"> • Vehicle speed signal • ABS operation signal • TCS operation signal • VDC operation signal 	
12.	CVT unit	Control valve	Transmission range switch	TM-13, "CVT CONTROL SYSTEM : Transmission Range Switch"
			CVT fluid temperature sensor	TM-13, "CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor"
			Secondary pressure sensor	TM-15, "CVT CONTROL SYSTEM : Secondary Pressure Sensor"
			Primary pressure sensor	TM-14, "CVT CONTROL SYSTEM : Primary Pressure Sensor"
			Primary speed sensor	TM-13, "CVT CONTROL SYSTEM : Primary Speed Sensor"
			Line pressure solenoid valve	TM-15, "CVT CONTROL SYSTEM : Line Pressure Solenoid Valve"
			Secondary pressure solenoid valve	TM-15, "CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve"
			Torque converter clutch solenoid valve	TM-16, "CVT CONTROL SYSTEM : Torque Converter Clutch Solenoid Valve"
			Lock-up select solenoid valve	TM-16, "CVT CONTROL SYSTEM : Lock-up Select Solenoid Valve"
			Step motor	TM-16, "CVT CONTROL SYSTEM : Step Motor"
			ROM assembly	TM-13, "CVT CONTROL SYSTEM : ROM Assembly"

CVT CONTROL SYSTEM : TCM

INFOID:000000008180300

Judges driving condition according to signals from each sensor, and optimally controls variable speed mechanism.

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

CVT CONTROL SYSTEM : ROM Assembly

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The ROM assembly stores the calibration data (characteristic value) of each solenoid valve. TCM enables accurate hydraulic control by obtaining the calibration data.

CVT CONTROL SYSTEM : Transmission Range Switch

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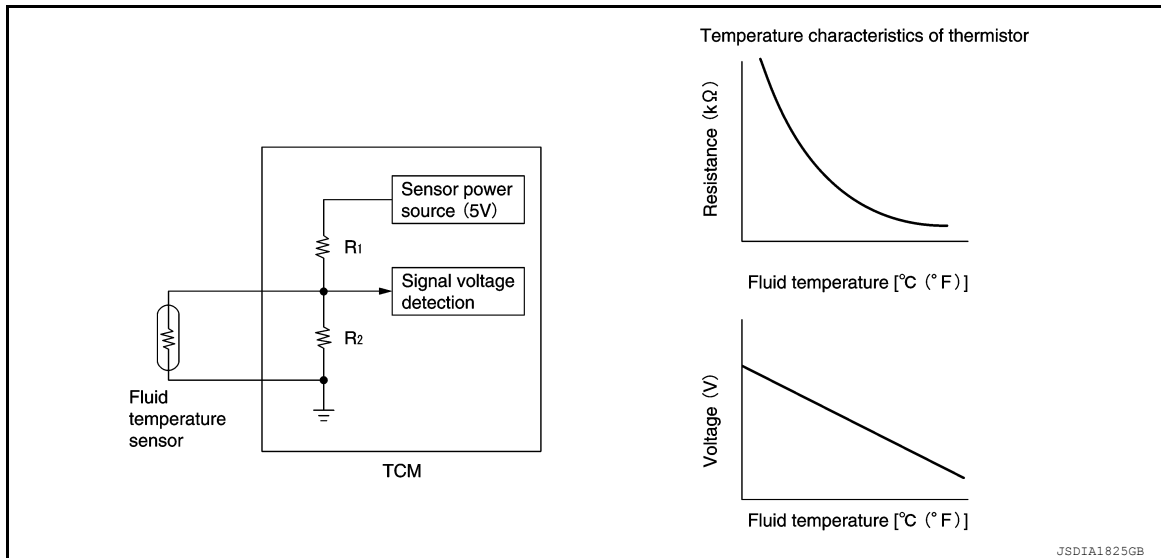
- The transmission range switch is included in the control valve assembly.
- The transmission range switch includes 4 transmission position switches.
- TCM judges the selector lever position by the transmission range switch signal.

Shift position	Transmission rangeswitch 1	Transmission rangeswitch 2	Transmission rangeswitch 3	Transmission rangeswitch 4	Transmission rangeswitch 3 (monitor)
P	OFF	OFF	OFF	OFF	OFF
R	ON	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF	OFF
D	ON	ON	ON	ON	ON
L	OFF	ON	ON	OFF	ON

CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor

INFOID:000000008180302

- The CVT fluid temperature sensor is included in the control valve assembly.
- The CVT fluid temperature sensor detects the CVT fluid temperature and sends a signal to the TCM.
- The fluid temperature sensor uses a thermistor, and changes the signal voltage by converting changes in the CVT fluid temperature to a resistance value. TCM evaluates the CVT fluid temperature from the signal voltage value.



CVT CONTROL SYSTEM : Primary Speed Sensor

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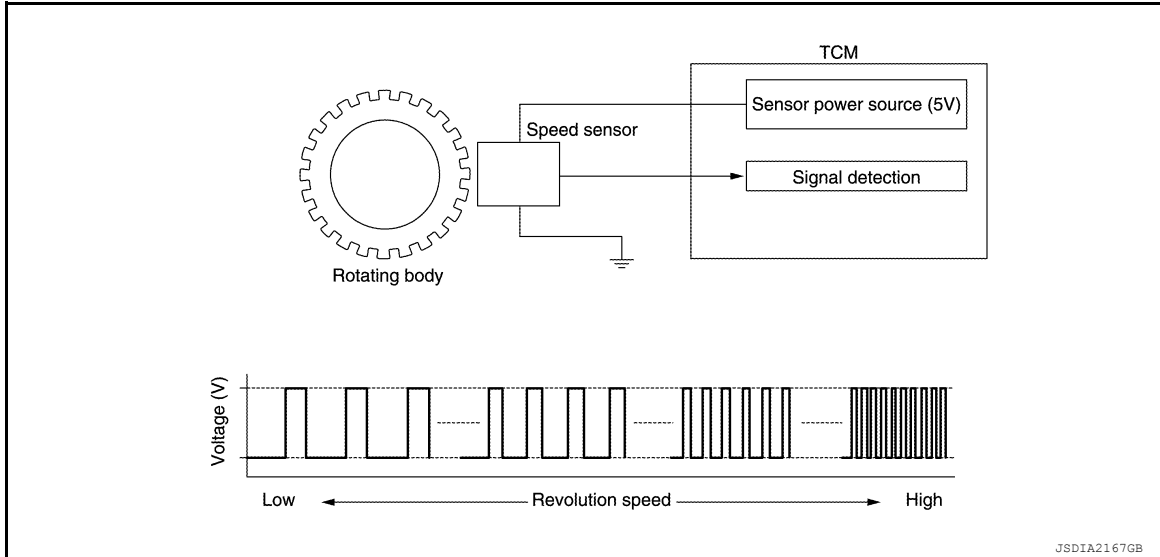
- The primary speed sensor is included in the control valve assembly.
- The primary speed sensor detects the primary pulley revolution speed and sends a signal to the TCM.

COMPONENT PARTS

[CVT: RE0F09B]

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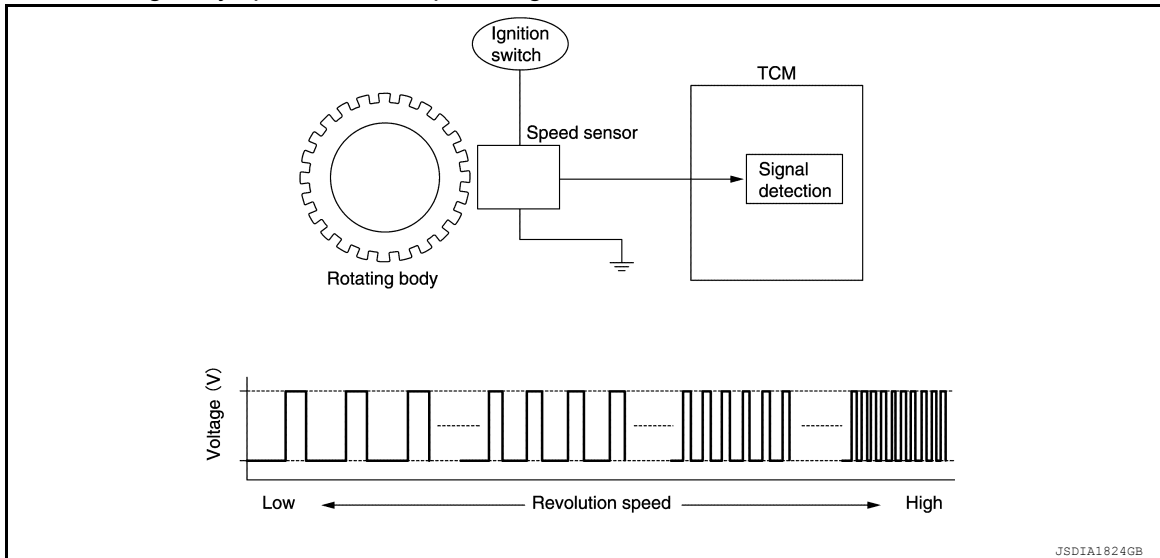
- The primary speed sensor generates an ON-OFF pulse signal according to the rotating body speed. TCM judges the rotating body speed from the pulse signal.



CVT CONTROL SYSTEM : Secondary Speed Sensor

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- The secondary speed sensor is installed in the rear of transaxle assembly.
- The secondary speed sensor detects the secondary pulley revolution speed and sends a signal to the TCM.
- The secondary speed sensor generates an ON-OFF pulse signal according to the rotating body speed. TCM judges the rotating body speed from the pulse signal.



CVT CONTROL SYSTEM : Primary Pressure Sensor

INFOID:000000008180305

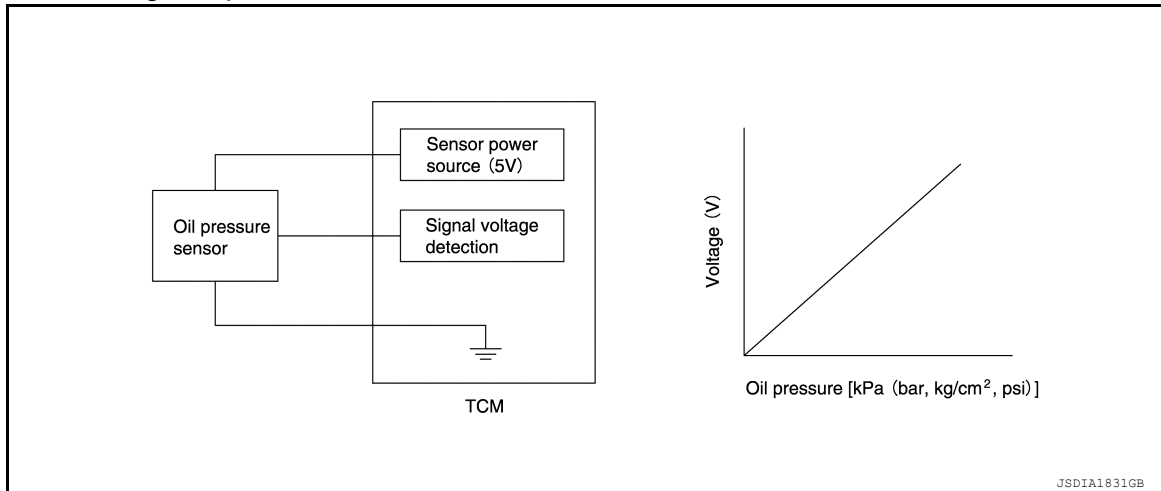
- The primary pressure sensor is included in the transaxle assembly.
- The primary pressure sensor detects primary pressure of CVT and sends a signal to the TCM.

COMPONENT PARTS

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

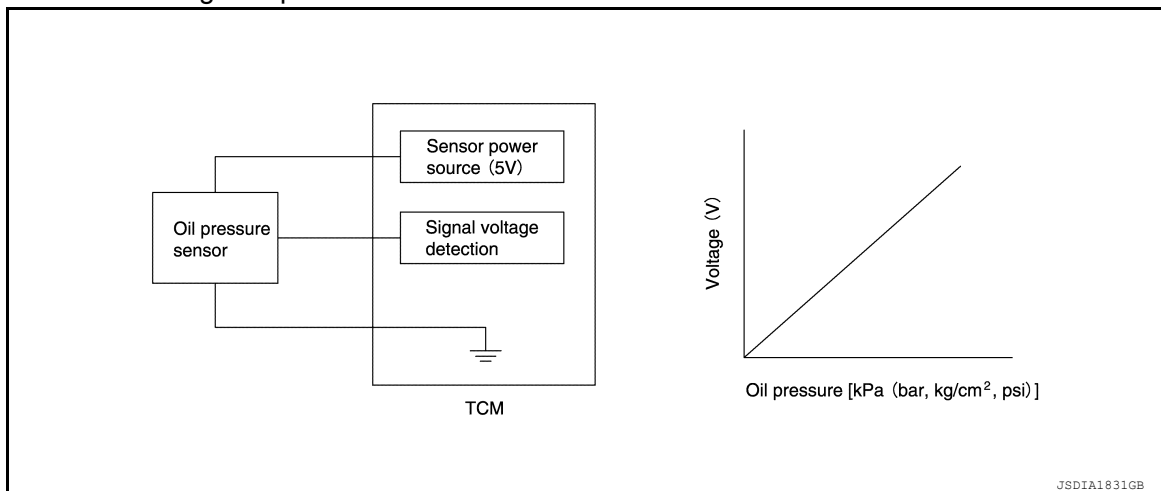
- When pressure is applied to the ceramic device in the primary pressure sensor, the ceramic device is deformed, resulting in voltage change. TCM evaluates the primary pressure from its voltage change. Voltage is increased along with pressure increase.



CVT CONTROL SYSTEM : Secondary Pressure Sensor

INFOID:000000008180306

- The secondary pressure sensor is included in the control valve assembly.
- The secondary pressure sensor detects secondary pressure of CVT and sends a signal to the TCM.
- When pressure is applied to the ceramic device in the secondary pressure sensor, the ceramic device is deformed, resulting in voltage change. TCM evaluates the secondary pressure from its voltage change. Voltage is increased along with pressure increase.



CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve

INFOID:000000008180307

- The secondary pressure solenoid valve is included in the control valve assembly.
- The secondary pressure solenoid valve controls secondary valve. For detailed secondary valve, refer to [TM-23. "TRANSAXLE : Component Description"](#).
- The secondary pressure solenoid valve contains a linear solenoid valve [N/H (Normal High) type].

NOTE:

- The principle of the linear solenoid valve utilizes the fact that the force pressing on the valve spool installed inside the coil increases nearly in proportion to the current. This allows it to produce a fluid pressure that is proportional to this pressing force.
- The N/H (Normal High) produces hydraulic control when the coil is not energized.

CVT CONTROL SYSTEM : Line Pressure Solenoid Valve

INFOID:000000008180308

- The line pressure solenoid valve is included in the control valve assembly.
- Line pressure solenoid valve controls pressure regulator valve. For detailed pressure regulator valve, refer to [TM-23. "TRANSAXLE : Component Description"](#).
- The line pressure solenoid valve contains a linear solenoid valve [N/H (Normal High) type].

< SYSTEM DESCRIPTION >

NOTE:

- The principle of the linear solenoid valve utilizes the fact that the force pressing on the valve spool installed inside the coil increases nearly in proportion to the current. This allows it to produce a fluid pressure that is proportional to this pressing force.
- The N/H (Normal High) produces hydraulic control when the coil is not energized.

CVT CONTROL SYSTEM : Torque Converter Clutch Solenoid Valve

INFOID:000000008180309

- The torque converter clutch solenoid valve is included in the control valve assembly.
- The torque converter clutch solenoid valve controls TCC control valve. For detailed TCC control valve, refer to [TM-23. "TRANSAXLE : Component Description"](#).
- The torque converter clutch solenoid valve contains a linear solenoid valve [N/L (Normal Low) type].

NOTE:

- The principle of the linear solenoid valve utilizes the fact that the force pressing on the valve spool installed inside the coil increases nearly in proportion to the current. This allows it to produce a fluid pressure that is proportional to this pressing force.
- The N/L (Normal Low) type does not produce hydraulic control when the coil is not energized.

CVT CONTROL SYSTEM : Lock-up Select Solenoid Valve

INFOID:000000008180310

- The lock-up select solenoid valve is included in the control valve assembly.
- The lock-up select solenoid valve controls the select switch valve. For detailed secondary valve, refer to [TM-23. "TRANSAXLE : Component Description"](#).
- The lock-up select solenoid valve contains an ON/OFF solenoid valve.

NOTE:

- The only operations of the valve spool installed inside the coil are pressing or not pressing the ball which seals the hydraulic supply section into the seat. This A/T uses N/L (Normal Low) type.
- When voltage is not applied to the coil, the force of the pilot pressure presses the ball against the seat, stopping the pilot pressure at that point.
- When voltage is applied to the coil, the valve is pulled in the direction of the coil, disengaging the hydraulic seal which the ball creates. This supplies pilot pressure to the operating locations.

CVT CONTROL SYSTEM : Step Motor

INFOID:000000008180311

The step motor changes the step by turning 4 coils ON/OFF according to the signal from TCM. As a result, the flow of line pressure to primary pulley is changed and pulley ratio is controlled.

CVT CONTROL SYSTEM : Manual Mode Switch

INFOID:000000008180314

- The manual mode switch is installed in the CVT shift selector assembly.
- The manual mode switch detects the position (the main shift gate side or manual shift gate side) of the selector lever and transmits a manual mode signal or a not manual mode signal to the combination meter. Then, the TCM receives a manual mode signal or non-manual mode signal from the combination meter.
- The manual mode switch detects that the selector lever is shifted to the shift-up side of the manual shift gate and transmits a manual mode shift up signal to the combination meter. Then, the TCM receives a manual mode shift up signal from the combination meter.
- The manual mode switch detects that the selector lever is shifted to the shift-down side of the manual shift gate and transmits a manual mode shift down signal to the combination meter. Then, the TCM receives a manual mode shift down signal from the combination meter.

CVT CONTROL SYSTEM : Shift Position Indicator

INFOID:000000008180313

- The shift position indicator is located in the combination meter.
- TCM transmits shift position signal to combination meter via CAN communication. The actual shift position is displayed on combination meter according to the signal.

SHIFT LOCK SYSTEM

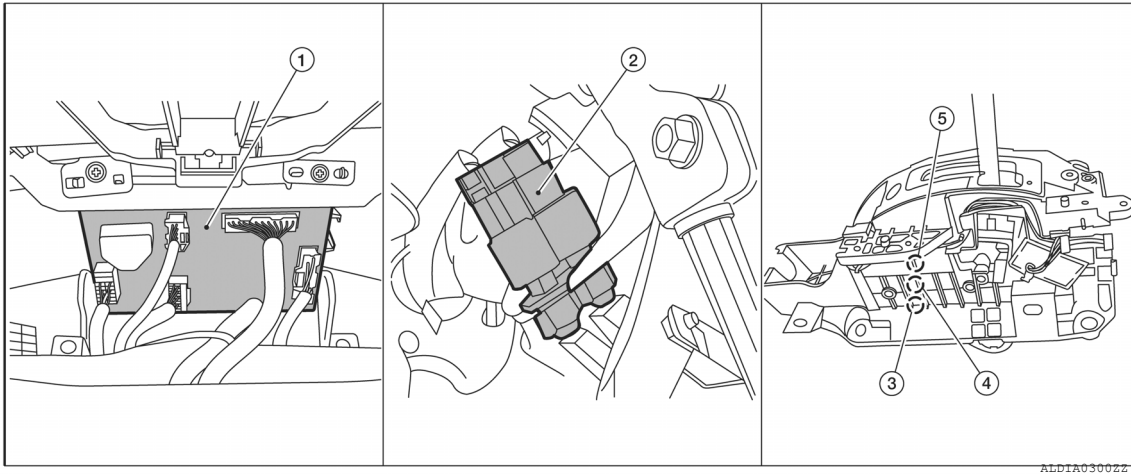
COMPONENT PARTS

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

SHIFT LOCK SYSTEM : Component Parts Location

INFOID:000000008180298



- | | | |
|---|-------------------------|------------------------------|
| 1. BCM (shown with combination meter removed) | 2. Stop lamp switch | 3. Shift lock release button |
| 4. Shift lock solenoid | 5. Park position switch | |

COMPONENT DESCRIPTION

Component	Function
Stop lamp switch	<ul style="list-style-type: none"> The stop lamp switch turns ON when the brake pedal is depressed. When the stop lamp switch turns ON, the shift lock solenoid is energized.
Shift lock release button	Forcibly releases the shift lock when pressed.
Shift lock solenoid	It operates according to the signal from the stop lamp switch and moves the lock lever.
Park position switch	It detects that the selector lever is in "P" position.

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STRUCTURE AND OPERATION

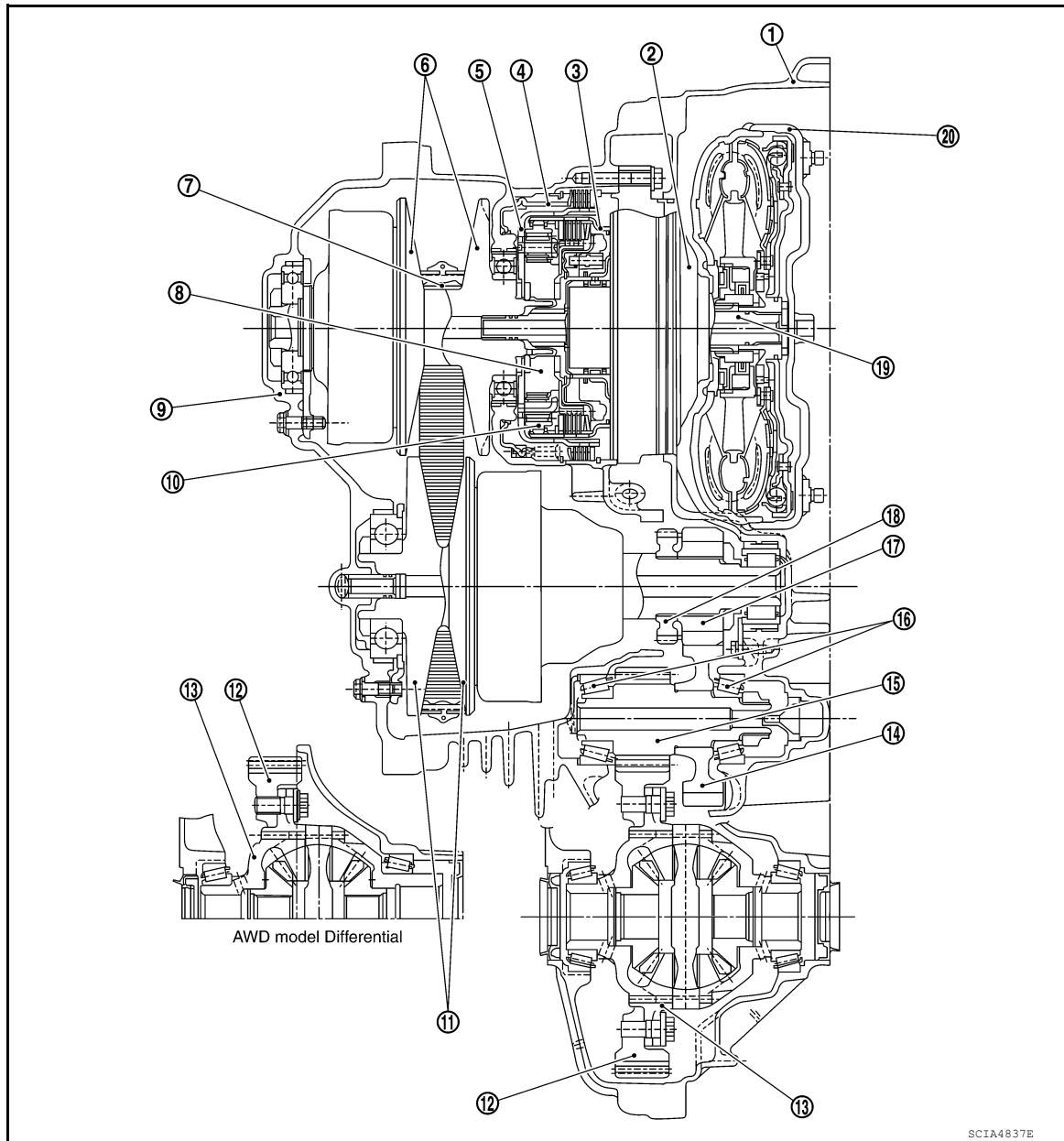
[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

STRUCTURE AND OPERATION TRANSAXLE

TRANSAXLE : Sectional View

INFOID:000000008180318



- | | | |
|--------------------------|----------------------|--------------------|
| 1. Converter housing | 2. Oil pump | 3. Forward clutch |
| 4. Reverse brake | 5. Planetary carrier | 6. Primary pulley |
| 7. Steel belt | 8. Sun gear | 9. Side cover |
| 10. Internal gear | 11. Secondary pulley | 12. Final gear |
| 13. Differential case | 14. Idler gear | 15. Reduction gear |
| 16. Taper roller bearing | 17. Output gear | 18. Parking gear |
| 19. Input shaft | 20. Torque converter | |

TRANSAXLE : Main Component Elements

INFOID:000000008266551

TORQUE CONVERTER (WITH LOCK-UP FUNCTION)

STRUCTURE AND OPERATION

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

In the same way as a conventional A/T, the torque converter is a system that increases the engine torque and transmits the torque to the transaxle. A symmetrical 3-element, 1-stage, 2-phase type is used here.

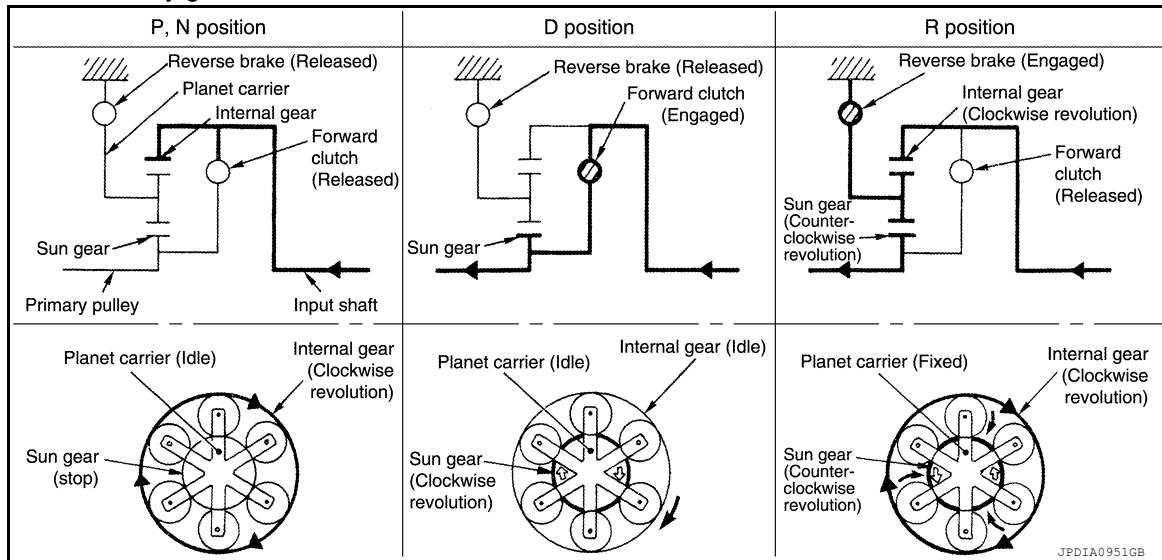
OIL PUMP

The adoption of a trochoidal oil pump with a flow control valve actuated directly by the engine enables the sufficient discharge from an oil pump in the low-rpm range and the adequate discharge adjustments in the high-rpm range. Discharged oil from oil pump is transmitted to control valve. It is used as the oil of primary and secondary pulley operation, the oil of clutch operation, and the lubricant for each part.

PLANETARY GEAR

- A planetary gear type of forward/reverse selector mechanism is installed between the torque converter and primary pulley.
- The power from the torque converter is input via the input shaft, operating a wet multi-plate clutch by means of hydraulic pressure to switch between forward and reverse driving.

Operation of Planetary gear



BELT & PULLEY

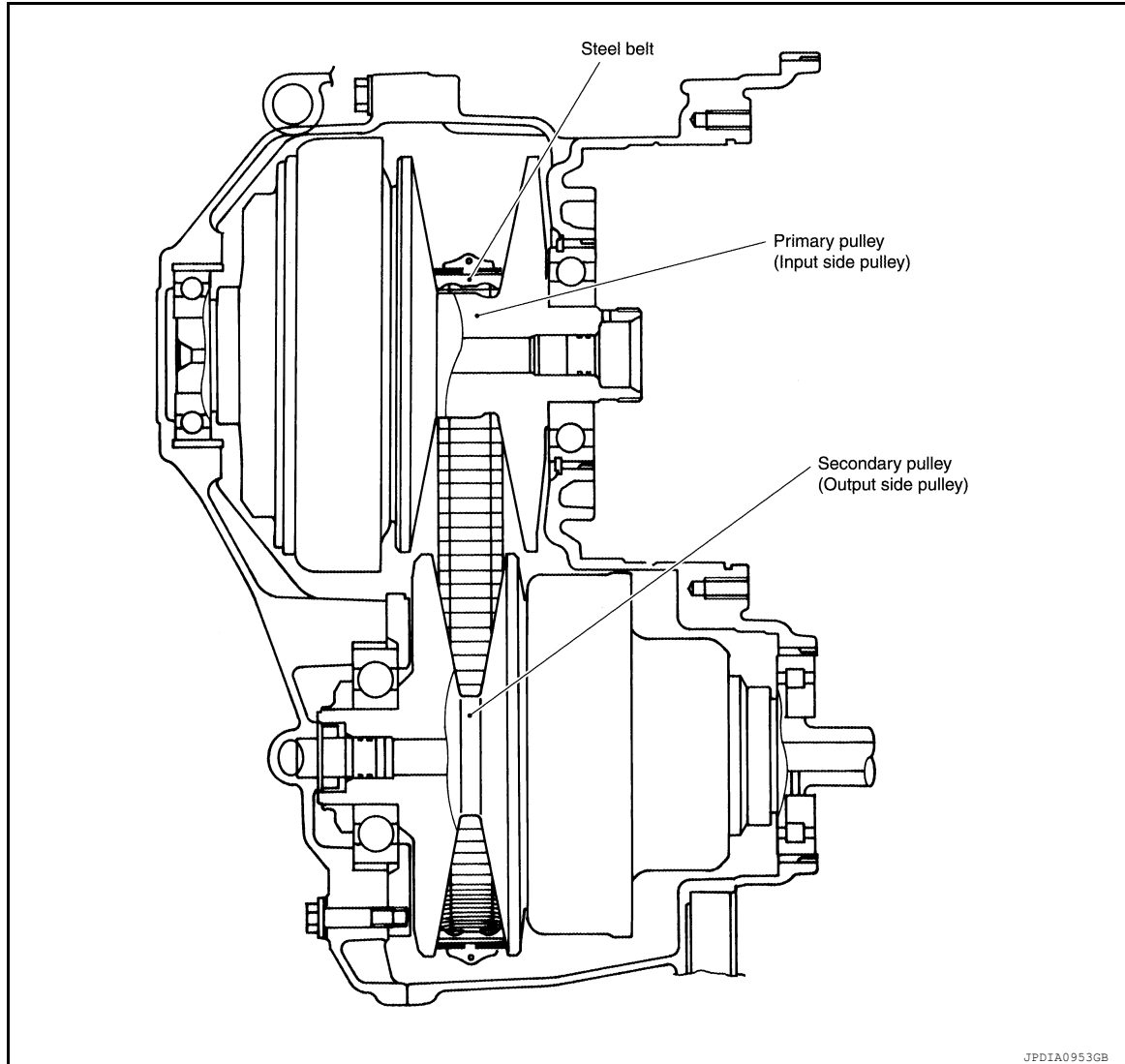
It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the steel belt (the steel plates are placed continuously and the belt is guided with the multilayer steel rings on both sides).

STRUCTURE AND OPERATION

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

The groove width changes according to wrapping radius of steel belt and pulley from low status to overdrive status continuously with non-step. It is controlled with the oil pressures of primary pulley and secondary pulley.



Steel Belt

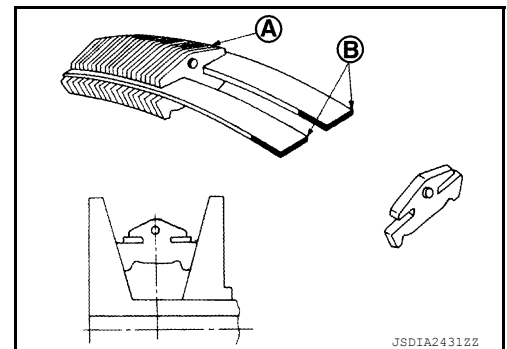
It is composed of multiple steel plates (A) and two steel rings (B) stacked to a several number. The feature of this steel belt transmits power with compression of the steel plate in contrast with transmission of power in pulling with a rubber belt. Friction force is required with the pulley slope to transmit power from the steel plate. The force is generated with the following mechanism:

Oil pressure applies to the secondary pulley to nip the plate. ⇒The plate is pushed and extended outward. ⇒The steel ring shows withstands. ⇒Pulling force is generated on the steel ring. ⇒The plate of the primary pulley is nipped between the pulley. ⇒Friction force is generated between the steel belt and the pulley.

Therefore, responsibilities are divided by the steel plate that transmits the power with compression and the steel ring that maintains necessary friction force. In this way, the tension of the steel ring is distributed on the entire surface and stress variation is limited, resulting in good durability.

Pulley

The primary pulley (input shaft side) and the secondary pulley (output shaft side) have the shaft with slope (fixed cone surface), movable sheave (movable cone surface that can move in the axial direction) and oil pressure chamber at the back of the movable sheave.

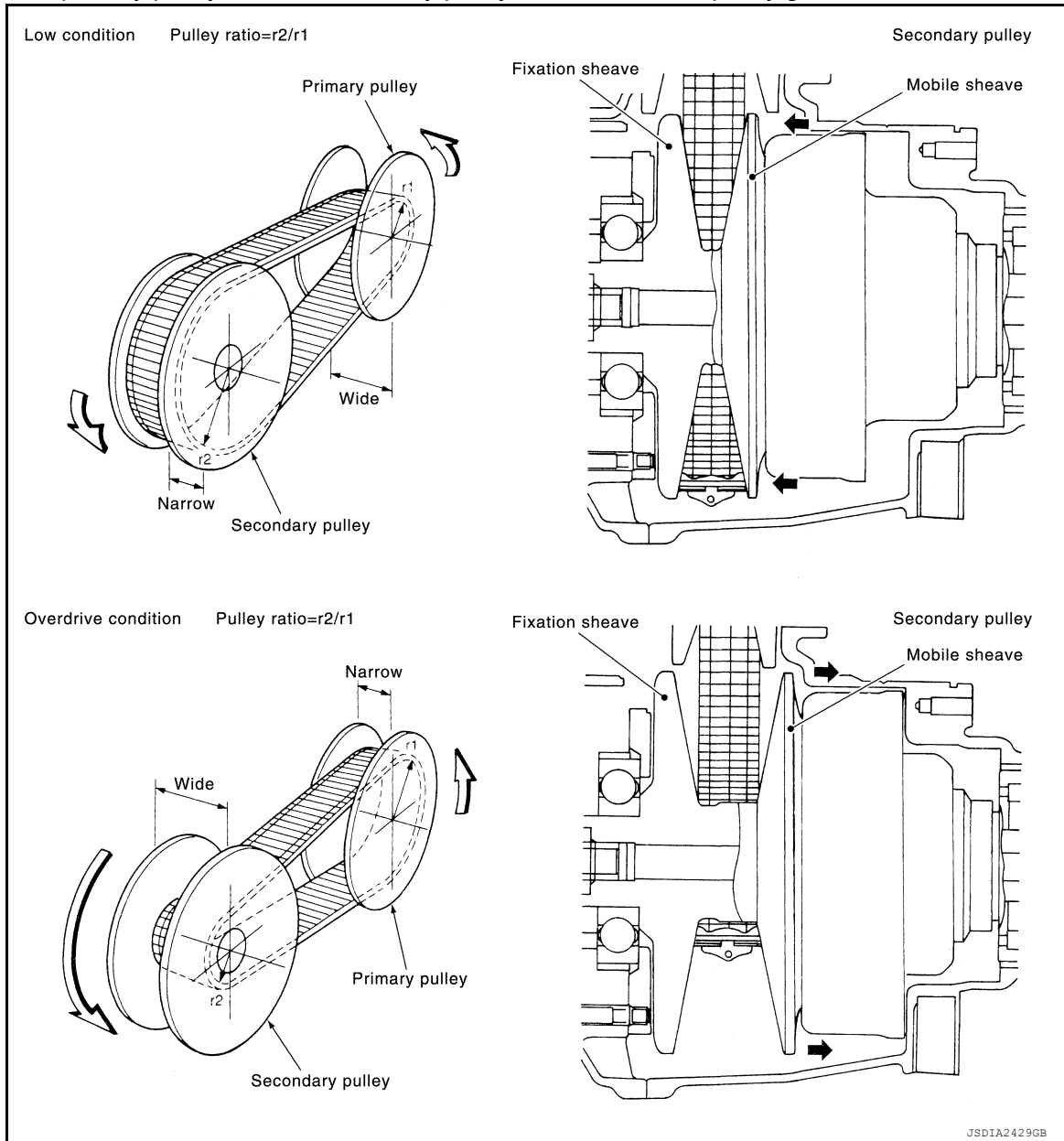


STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

The movable sheave slides on the shaft to change the groove width of the pulley. Input signals of engine load (accelerator pedal opening), primary pulley speed and secondary pulley speed change the operation pressures of the primary pulley and the secondary pulley, and controls the pulley groove width.



FINAL DRIVE AND DIFFERENTIAL

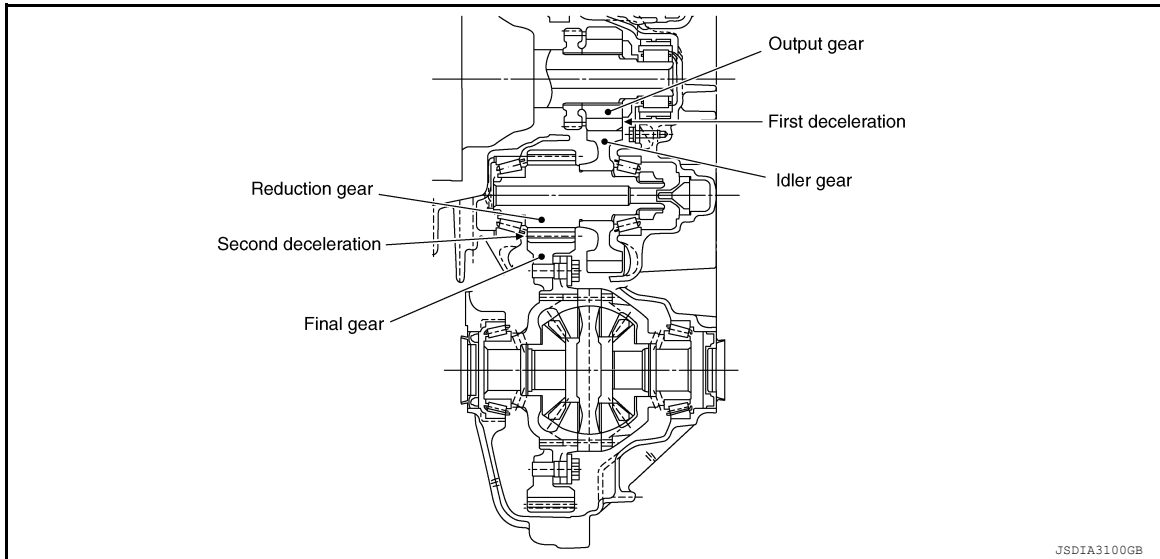
The deceleration gears are composed of 2 stages: primary deceleration (output gear, idler gear pair) and secondary deceleration (reduction gear, final gear pair). All of these gears are helical gears.

STRUCTURE AND OPERATION

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

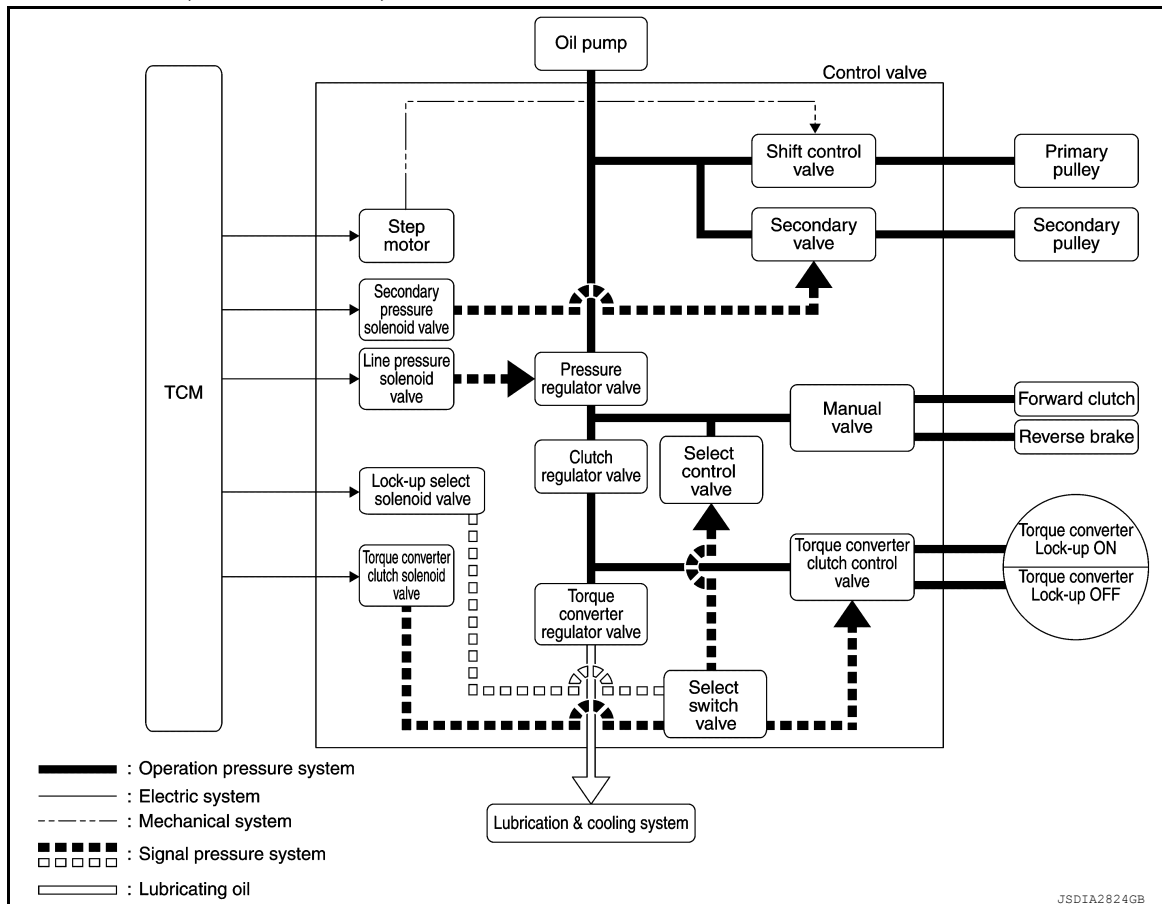
The lubrication oil is the same as the fluid (Genuine NISSAN CVT Fluid NS-3) which lubricates the entire transaxle.



TRANSAXLE : Oil Pressure System

INFOID:000000008266552

Oil pressure required for operation of the transaxle transmission mechanism is generated by oil pump, oil pressure control valve, solenoid valve, etc.



STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

TRANSAXLE : Component Description

INFOID:000000008180321

Part name	Function
Torque converter	<ul style="list-style-type: none"> Increases engine torque and transmits it to the transaxle. In the same way as a conventional A/T, the torque converter is a system that increases the engine torque and transmits the torque to the transaxle. A symmetrical 3-element, 1-stage, 2-phase type is used here.
Oil pump	The adoption of a trochoidal oil pump with a flow control valve actuated directly by the engine enables the sufficient discharge from an oil pump in the low-rpm range and the adequate discharge adjustments in the high-rpm range. Discharged oil from oil pump is transmitted to control valve. It is used as the oil of primary and secondary pulley operation, the oil of clutch operation, and the lubricant for each part.
Forward clutch	The forward clutch is wet and multiple plate type clutch that consists of clutch drum, piston, drive plate, and driven plate. It is a clutch to move the vehicle forward by activating piston hydraulically, engaging plates, and directly connecting sun gear and input shaft.
Reverse brake	The reverse brake is a wet multiple-plate type brake that consists of transaxle case, piston, drive plate, and driven plate. It is a brake to move the vehicle in reverse by activating piston hydraulically, engaging plates, and fixing planetary gear.
Internal gear	The internal gear is directly connected to forward clutch drum. It is a gear that moves the outer edge of pinion planet of planet carrier. It transmits power to move the vehicle in reverse when the planet carrier is fixed.
Planet carrier	Composed of a carrier, pinion planet, and pinion shaft. This gear fixes and releases the planet carrier in order to switch between forward and reverse driving.
Sun gear	Sun gear is a set part with planet carrier and internal gear. It transmits transmitted force to primary fixed sheave. It rotates in forward or reverse direction according to activation of either forward clutch or reverse brake.
Input shaft	The input shaft is directly connected to forward clutch drum and transmits traction force from torque converter. In shaft center, there are holes for hydraulic distribution to primary pulley and hydraulic distribution for lockup ON/OFF.
Primary pulley	It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the steel belt (the steel plates are placed continuously and the belt is guided with the multilayer steel rings on both sides). The groove width changes according to wrapping radius of steel belt and pulley from low status to overdrive status continuously with non-step. It is controlled with the oil pressures of primary pulley and secondary pulley.
Secondary pulley	
Steel belt	
Manual shaft	When the manual shaft is in the P position, the parking rod that is linked to the manual shaft rotates the parking pole. When the parking pole rotates, it engages with the parking gear, fixing the parking gear. As a result, the output shaft that is integrated with the parking gear is fixed.
Parking rod	
Parking pawl	
Parking gear	
Output gear	The deceleration gears are composed of 2 stages: primary deceleration (output gear, idler gear pair) and secondary deceleration (reduction gear, final gear pair). All of these gears are helical gears.
Idler gear	
Reduction gear	
Final gear	
Differential	
Torque converter regulator valve	Adjusts the feed pressure to the torque converter to the optimum pressure corresponding to the driving condition.
Pressure regulator valve	Adjusts the discharge pressure from the oil pump to the optimum pressure (line pressure) corresponding to the driving condition.
Torque converter clutch control valve	Adjusts the torque converter engage and disengage pressures.
Shift control valve	Controls the line pressure that is applied to the primary pulley according to the stroke difference between the step motor and primary pulley.
Secondary valve	Reduces the line pressure and adjusts the secondary pressure.
Clutch regulator valve	Adjusts the clutch operating pressure according to the driving conditions.

STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

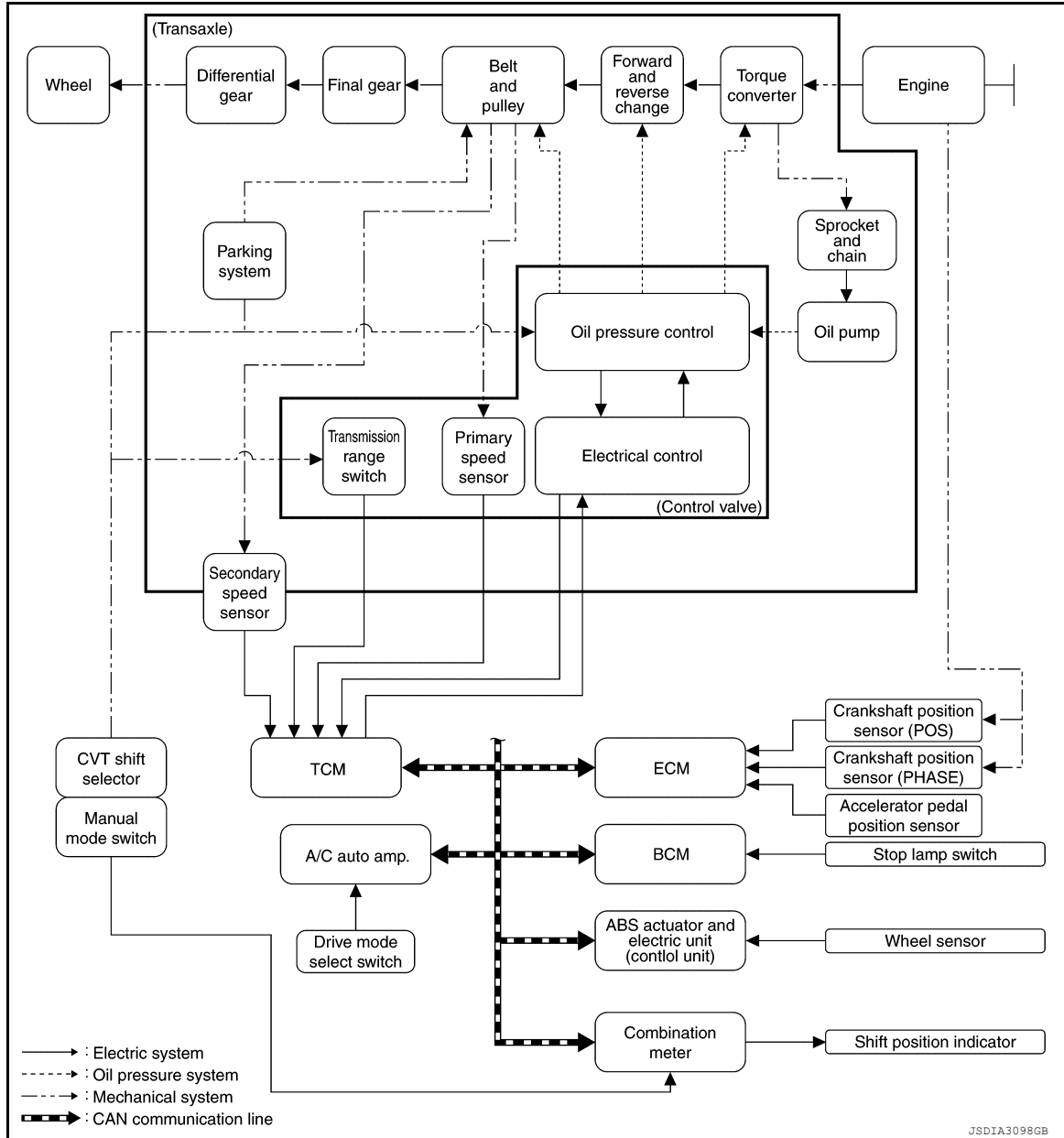
Part name	Function
Manual valve	Distributes the clutch operation pressure to each circuit according to the selector lever position.
Select control valve	Engages when selected. Adjusts the forward clutch pressure and reverse brake pressure.
Select switch valve	Performs switching control of the torque converter clutch solenoid valve control pressure when lock up is engaged/disengaged, and when the forward/reverse clutches (forward clutch and reverse brake) are engaged/disengaged.

SYSTEM
CVT CONTROL SYSTEM

CVT CONTROL SYSTEM : System Diagram

INFOID:000000008259589

SYSTEM DIAGRM



DESCRIPTION

The TCM senses vehicle operating conditions through various sensors or signals. It always controls the optimum shift position and reduces shifting and lock-up shocks.

TCM FUNCTION

The function of the TCM is to:

- Receive input signals transmitted from various switches and sensors.
- Determine required line pressure, shifting point, lock-up operation, etc.
- Transmit required output signals to the respective solenoids.

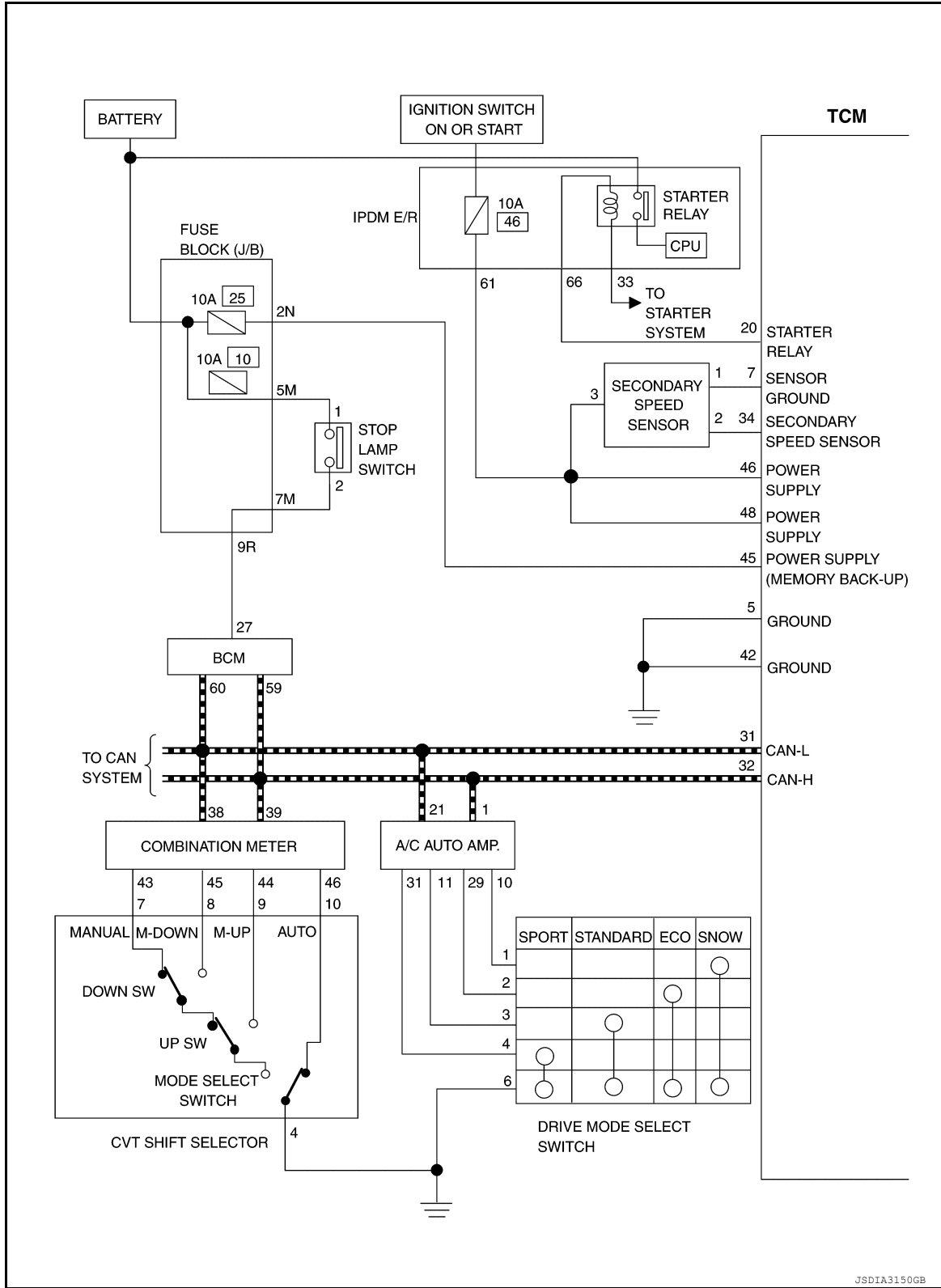
SYSTEM

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

CVT CONTROL SYSTEM : Circuit Diagram

INFOID:000000008259590

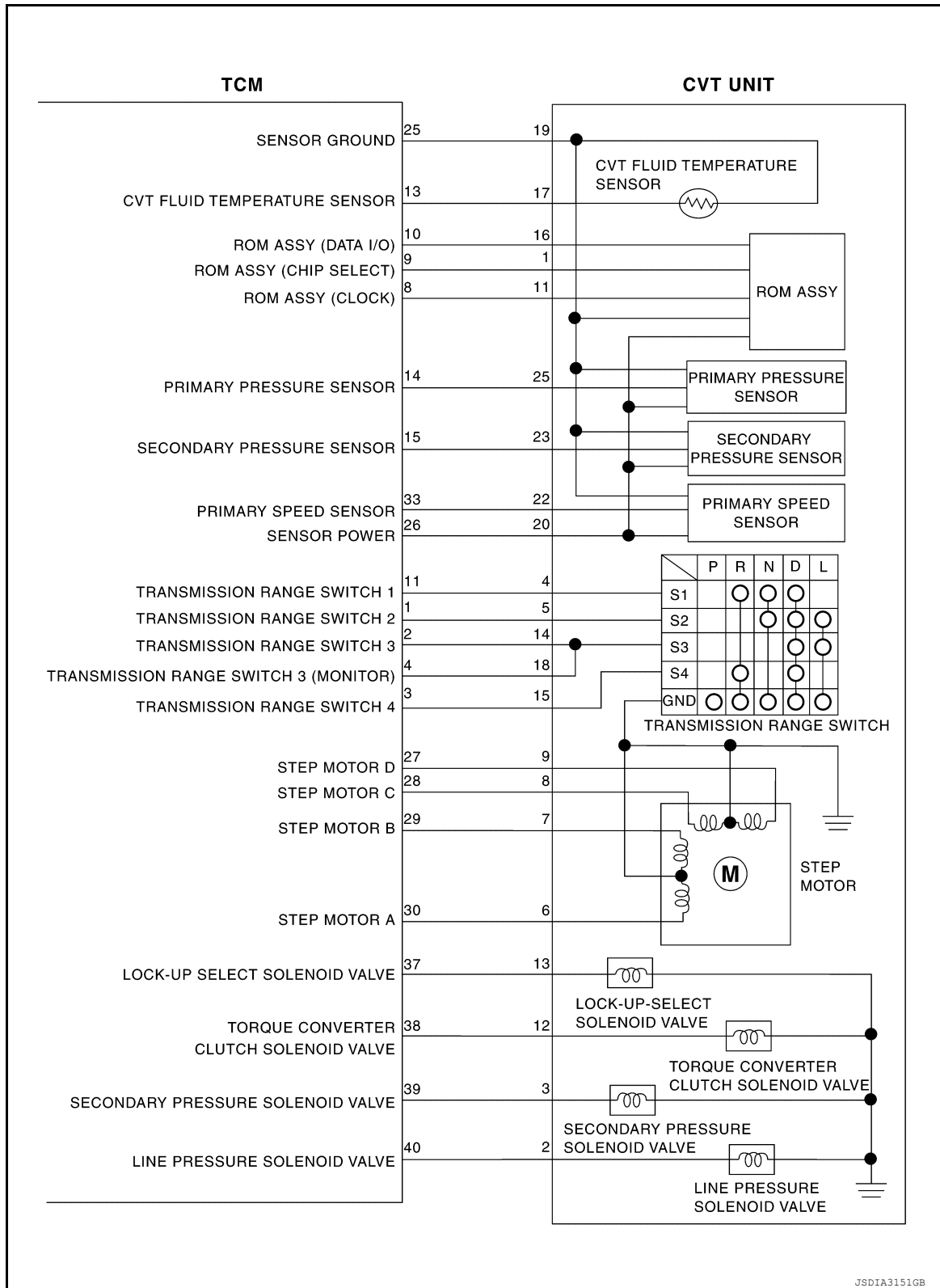


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SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

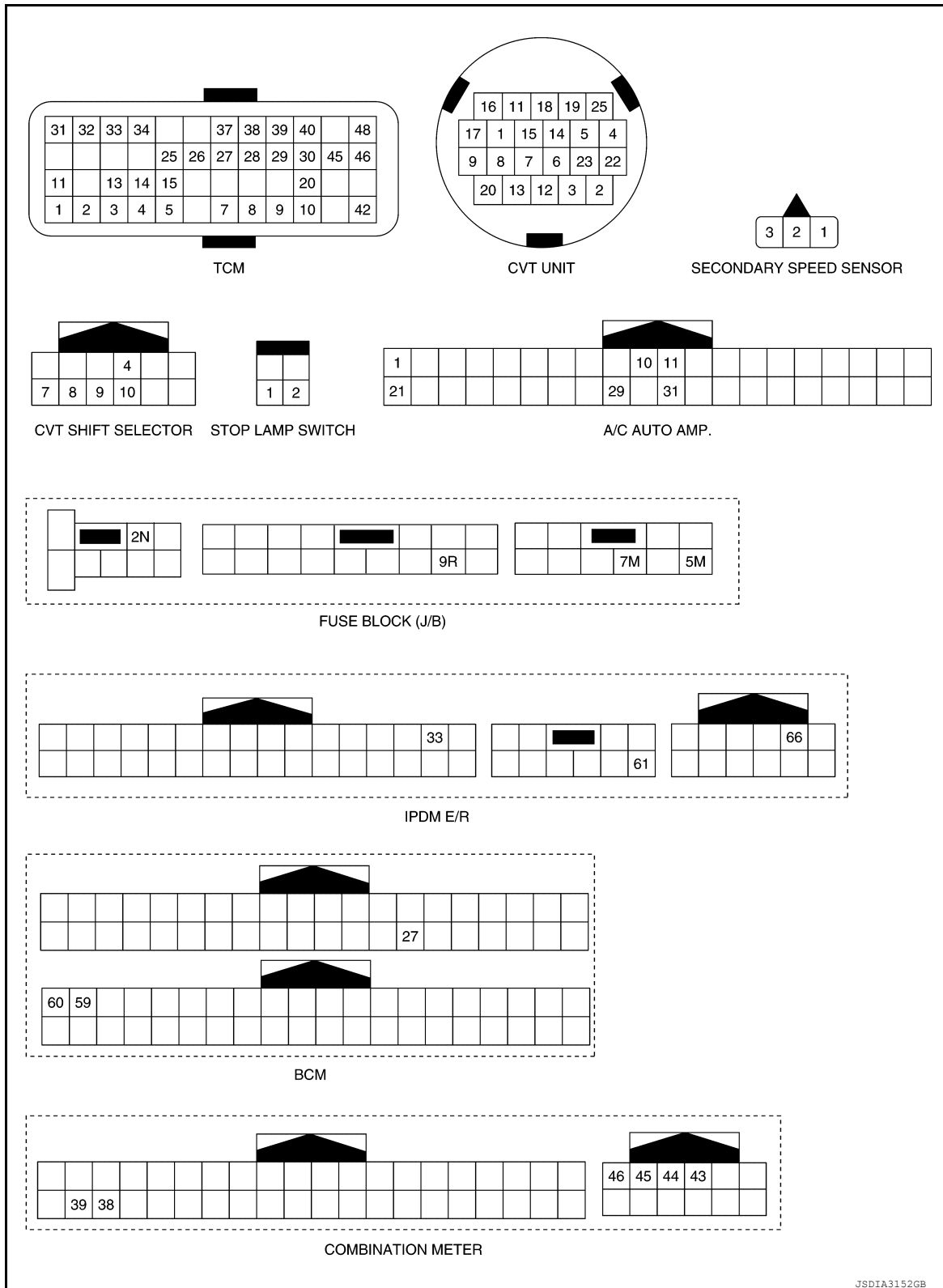


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SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]



JSDIA3152GB

CVT CONTROL SYSTEM : Fail-safe

INFOID:000000008180401

DESCRIPTION

TCM has a fail-safe mode. The mode functions so that operation can be continued even if the signal circuit of the main electronically controlled input/output parts is damaged.

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

DTC	Conditions of vehicle	Vehicle behavior	A
P0615	—	Does not start the engine	A
P0703	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow 	B
P0705	—	<ul style="list-style-type: none"> • Shift position indicator on combination meter is not displayed • Does not start the engine when TCM cannot recognize P range • Does not start the engine when TCM cannot recognize N range • Selector shock is large • Start is slow • Acceleration is slow • Manual mode is not activated • Lock-up is not performed 	C
P0710	Engine coolant temperature when engine starts is 10°C (50°F) or more.	Acceleration is slow	E
	Engine coolant temperature when engine starts is less than 10°C (50°F).	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Vehicle speed is not increased 	F
	Engine coolant temperature when engine starts is less than -35°C (-31°F).	Vehicle speed is not increased	F
P0715	—	<ul style="list-style-type: none"> • Acceleration is slow • Restart is slow after stopping with strong deceleration • Manual mode is not activated • Lock-up is not performed 	G
P0720	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Restart is slow after stopping with strong deceleration • Manual mode is not activated • Lock-up is not performed 	H
P0725	—	Lock-up is not performed	I
P0740	—	<ul style="list-style-type: none"> • Selector shock is large • Lock-up is not performed 	J
P0744	—	Lock-up is not performed	K
P0745	—	—	K
P0746	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Lock-up is not performed 	L
	Function deterioration is remarkable after detection of malfunction	<ul style="list-style-type: none"> • Start is difficulty • Driving is difficulty • Lock-up is not performed 	L
P0776	—	—	M
P0778	—	Vehicle speed is not increased	N
P0826	—	Manual mode is not activated	N
P0840	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow 	O
P0841	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow 	O
P0845	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow 	P
P0868	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow 	P
P1701	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow 	P
P1705	—	<ul style="list-style-type: none"> • Acceleration is slow • Lock-up is not performed 	P

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

DTC	Conditions of vehicle	Vehicle behavior
P1709	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Shift position indicator (P, N) is not displayed, or is displayed with delay
P1722	—	Lock-up is not performed in coast condition
P1723	When detected malfunction of primary speed sensor	<ul style="list-style-type: none"> • Acceleration is slow • Restart is slow after stopping with strong deceleration • Manual mode is not activated • Lock-up is not performed
	When detected malfunction of secondary speed sensor	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Restart is slow after stopping with strong deceleration • Manual mode is not activated • Lock-up is not performed
P1726	—	Acceleration is slow
P1740	—	<ul style="list-style-type: none"> • Selector shock is large • Lock-up is not performed
P1777	When detected malfunction of low side (stop the vehicle)	<ul style="list-style-type: none"> • Vehicle speed is not increased • Lock-up is not performed
	When detected malfunction of high side (driving the vehicle)	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Lock-up is not performed
U1000	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Vehicle speed is not increased
U1010	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Vehicle speed is not increased

LINE PRESSURE AND SECONDARY PRESSURE CONTROL

SYSTEM

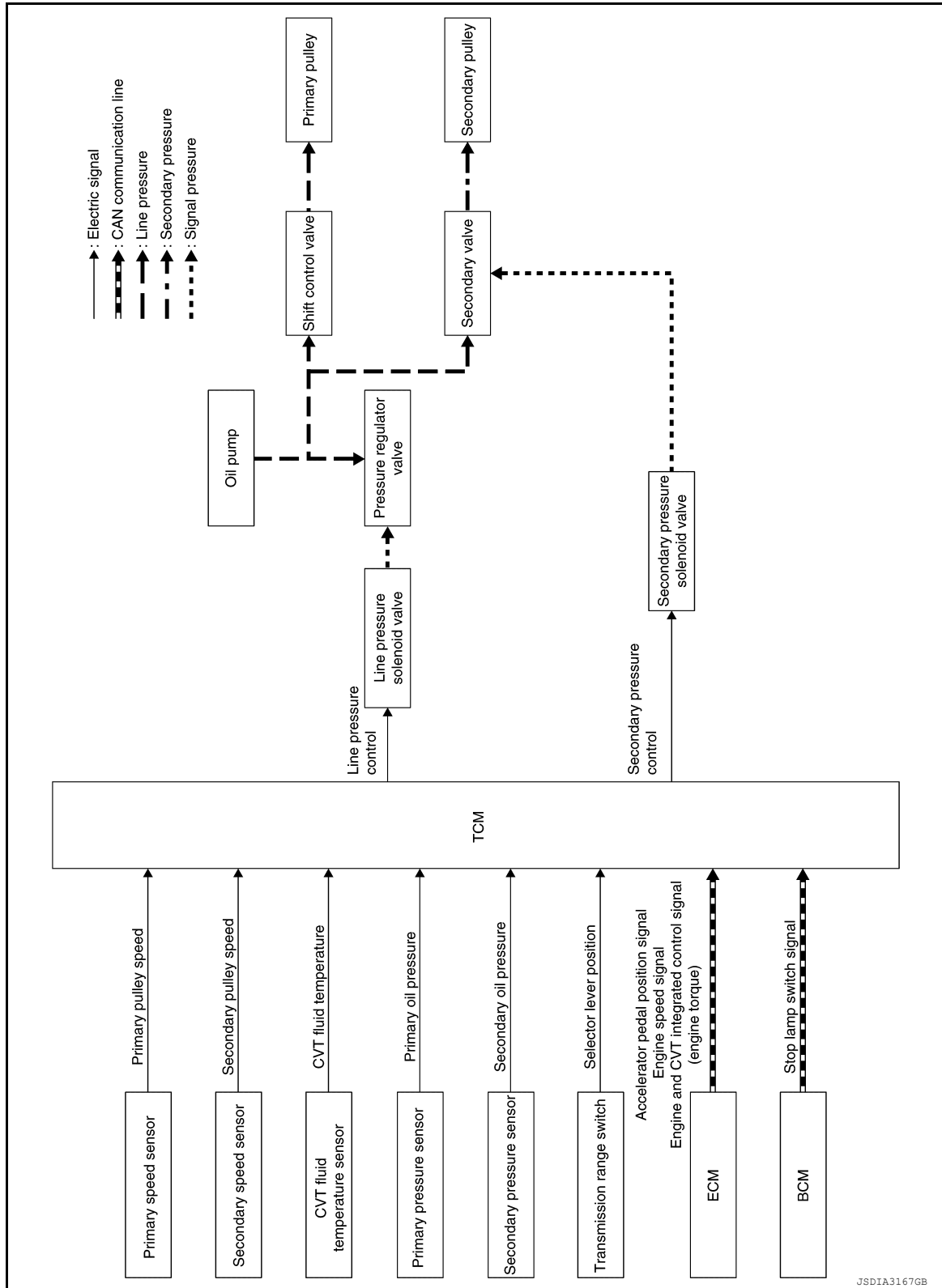
< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

LINE PRESSURE AND SECONDARY PRESSURE CONTROL : System Description

INFOID:000000008259592

SYSTEM DIAGRAM



DESCRIPTION

Highly accurate line pressure control and secondary pressure control reduces friction for improvement of fuel economy.

Normal Oil Pressure Control

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SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Appropriate line pressure and secondary pressure suitable for driving condition are determined based on the accelerator pedal position, engine speed, primary pulley (input) speed, secondary pulley (output) speed, input torque, stop lamp switch signal, transmission range switch signal, lock-up signal, power voltage, target shift ratio, oil temperature and oil pressure.

Secondary Pressure Feedback Control

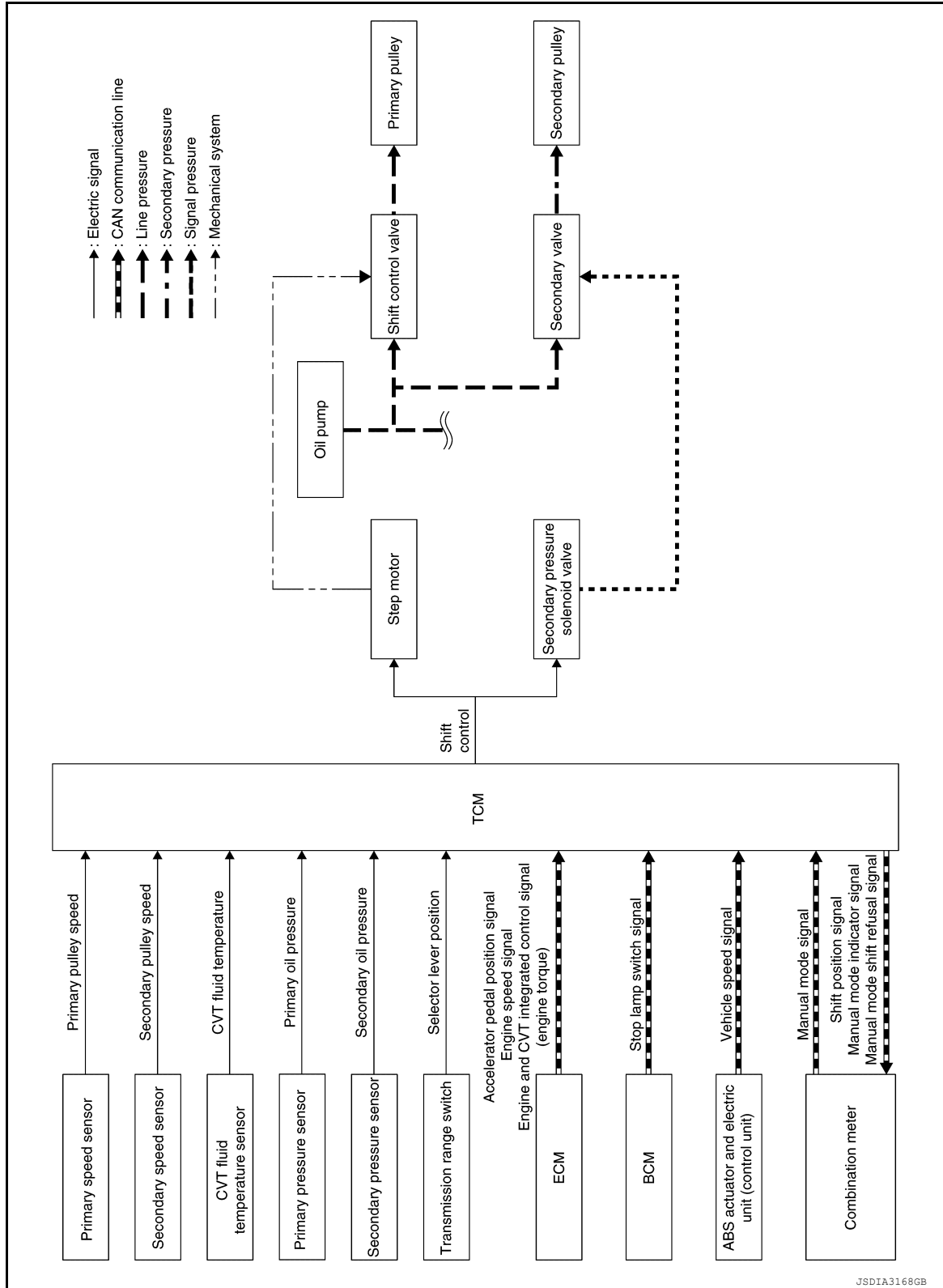
In normal oil pressure control and oil pressure control in shifting, highly accurate secondary pressure is determined by detecting the secondary pressure using an oil pressure sensor and by feedback control.

SHIFT CONTROL

SHIFT CONTROL : System Description

INFOID:000000008259593

SYSTEM DIAGRAM



DESCRIPTION

The shift control sets the shifting method conforming to the intention of the driver and gear ratio, providing traction force suitable to the vehicle conditions.

Gear ratio setting

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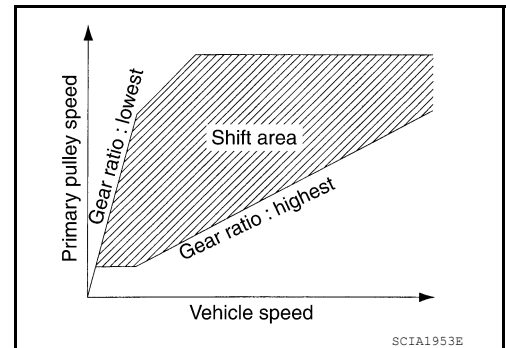
[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

- The TCM detects the driving status of vehicle according to the vehicle speed and the throttle position, and then the TCM calculates the most suitable gear ratio (target gear ratio) for driving the vehicle.
- The TCM calculates the actual gear ratio of the transaxle according to each sensor signal of the primary speed sensor, secondary speed sensor and, etc.
- The TCM transmits the drive signal to the step motor and the secondary pressure solenoid valve, so that the actual gear ratio becomes identical to the target gear ratio. Upon receipt of the drive signal, the step motor and the secondary pressure solenoid valve control the shift control valve and the secondary valve so that the outwards flow and the inward flow of the operating pressure to the primary pulley and the secondary pulley is controlled. By this operation, the variable position of the primary pulley and the secondary pulley is changed and the gear ratio is controlled to become identical to the target gear ratio.

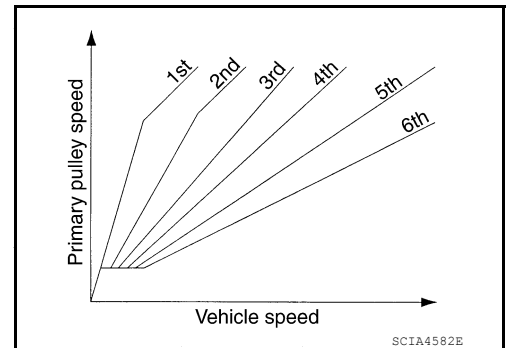
“D” Position

- Gear shifting is performed in all shifting ranges from the lowest to the highest gear ratio.
- Multiple shift schedules are set for D position. TCM automatically selects a shift schedule with consideration given to the balance between fuel economy and driving performance, according to drive conditions and driving tendencies.



“M” Position

When the selector lever is put in the manual shift gate side, the fixed changing gear line is set. By moving the selector lever to + side or - side, the manual mode switch is changed over, and shift change like M/T becomes possible following the changing gear set line step by step.



Manual Mode Information

The TCM transmits the manual mode shift refusal signal to the combination meter if the TCM refuses the transaxle from the driving status of vehicle when the selector lever shifts to “UP (+ side)” or “DOWN (- side)” side. The combination meter blinks shift position indicator on the combination meter and sounds the buzzer to indicate the driver that the shifting is not performed when receiving this signal. However, the TCM does not transmit the manual mode shift refusal signal in the conditions as per the following.

- When the selector lever shifts to “DOWN (- side)” side while driving in M1.
- When the selector lever shifts to “UP (+ side)” side while driving in M6.

Blipping Control

Using engine torque, the blipping control enables a faster and more responsive gear shifting by compensating inertia torque generated from the rotational change during gear shifting in real time.

Operation

- The blipping control is activated when shifting up/down in manual mode.

NOTE:

The blipping control is not activated when the vehicle is in the following conditions:

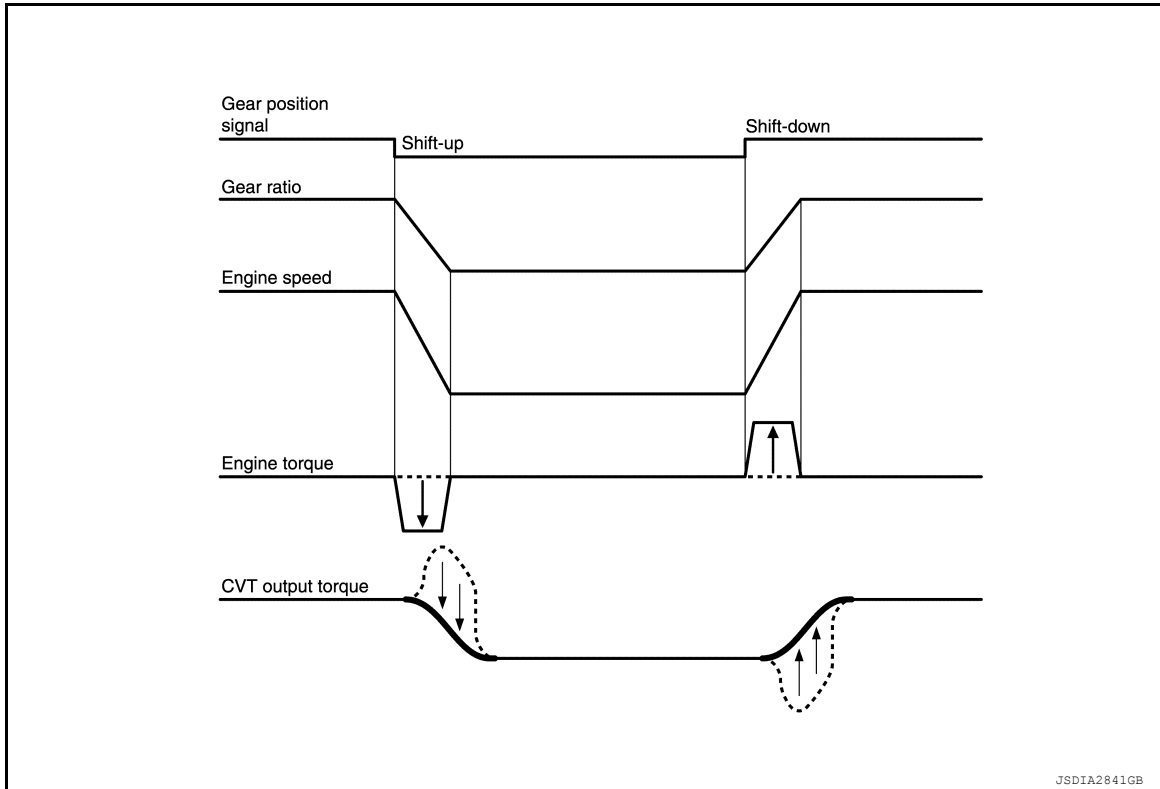
- When CAN communication is abnormal.
- During the retard inhibit signal transmission from ECM within the engine-CVT integrated control.
- Engine coolant temperature is less than 20°C (68°F).
- CVT fluid temperature is more than 120°C (248°F).
- Vehicle speed is less than 20 km/h (13 MPH).
- When ABS, TCS or VDC is active.
- During wheel spin.

SYSTEM

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

- ECM selects blipping control or normal shift control according to the gear position, the selector lever position, etc.
- The blipping control is activated when ECM judges it controllable after receiving a control permit signal from TCM.
- ECM controls engine torque, based on generated inertia torque.

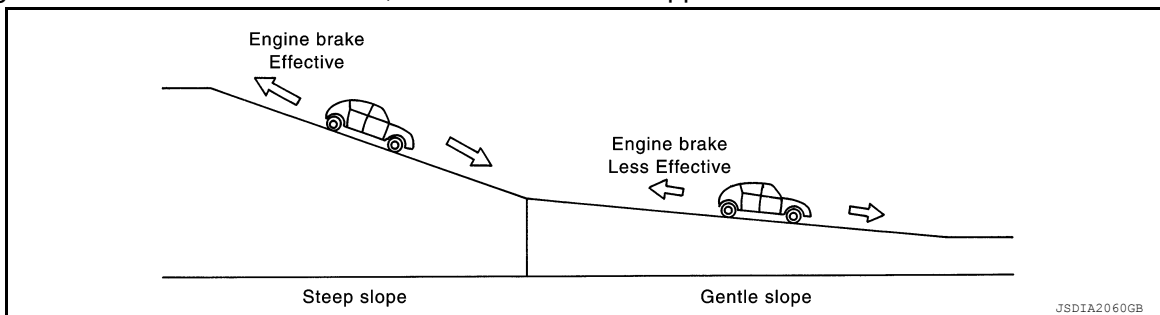


Hill Climbing And Descending Control

If a downhill is detected with the accelerator pedal is released, the system performs downshift to increase the engine brake force so that vehicle may not be accelerated more than necessary. If a climbing hill is detected, the system improves the driving performance in climbing hill by limiting the gear shift range on the high side.

NOTE:

For engine brake control on a downhill, the control can be stopped with CONSULT.

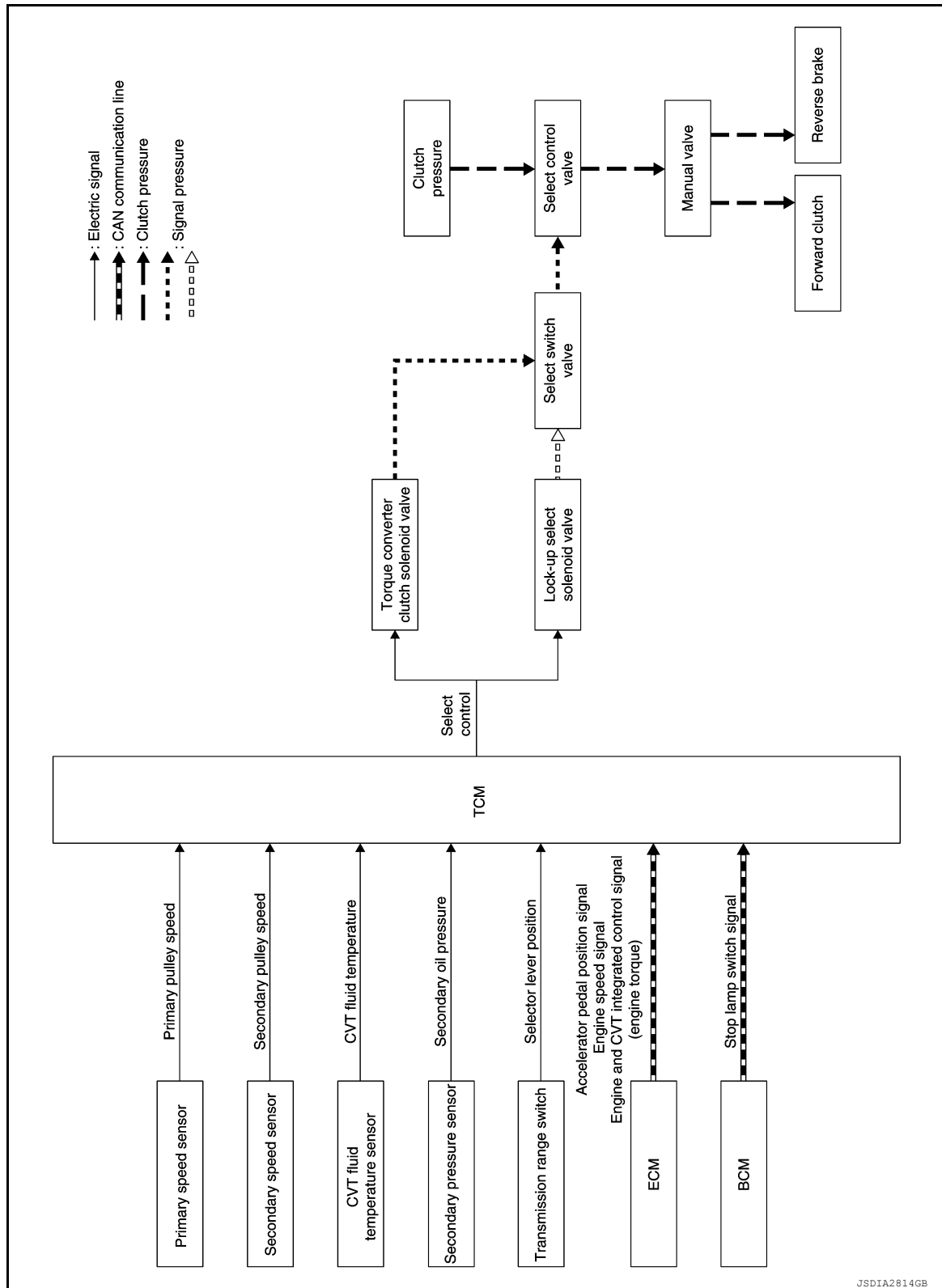


Control In Acceleration

From change of the vehicle speed or accelerator pedal position, the acceleration request level of the driver or driving scene is evaluated. In start or acceleration during driving, the gear shift characteristics with linearity of revolution increase and vehicle speed increase are gained to improve the acceleration feel.

SELECT CONTROL

SYSTEM DIAGRAM



DESCRIPTION

- When shifting between “N” (“P”) ⇒ “D” (“R”), optimize the operating pressure on the basis of the throttle position, the engine speed, and the secondary pulley (output) revolution speed to lessen the shift shock.
- Since the transaxle does not adopt the accumulator which absorbs the clutch engaging pressure when the clutch is engaged, the clutch engaging pressure is adjusted by the select control valve instead.

SYSTEM

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

- While the selector lever is in “P” or in “N”, the TCM operates the lock-up select solenoid valve and transmits the signal pressure to the select switch valve. By this signal pressure, the select switch valve switches the oil passage so that the signal pressure from the torque converter clutch solenoid valve is transmitted to the select control valve.

When selector lever is shifted from “N” (“P”) to “D” (“R”), the TCM operates the torque converter clutch solenoid valve for several seconds and transmits the signal pressure to the select control valve.

The select control valve adjusts the clutch pressure that is applied to the forward clutch and the reverse brake, according to the signal pressure from the torque converter clutch solenoid valve, so that engagement shock is absorbed.

- When CVT fluid temperature is low, it takes time for oil pressure to be applied. This may cause a delay in clutch engagement.

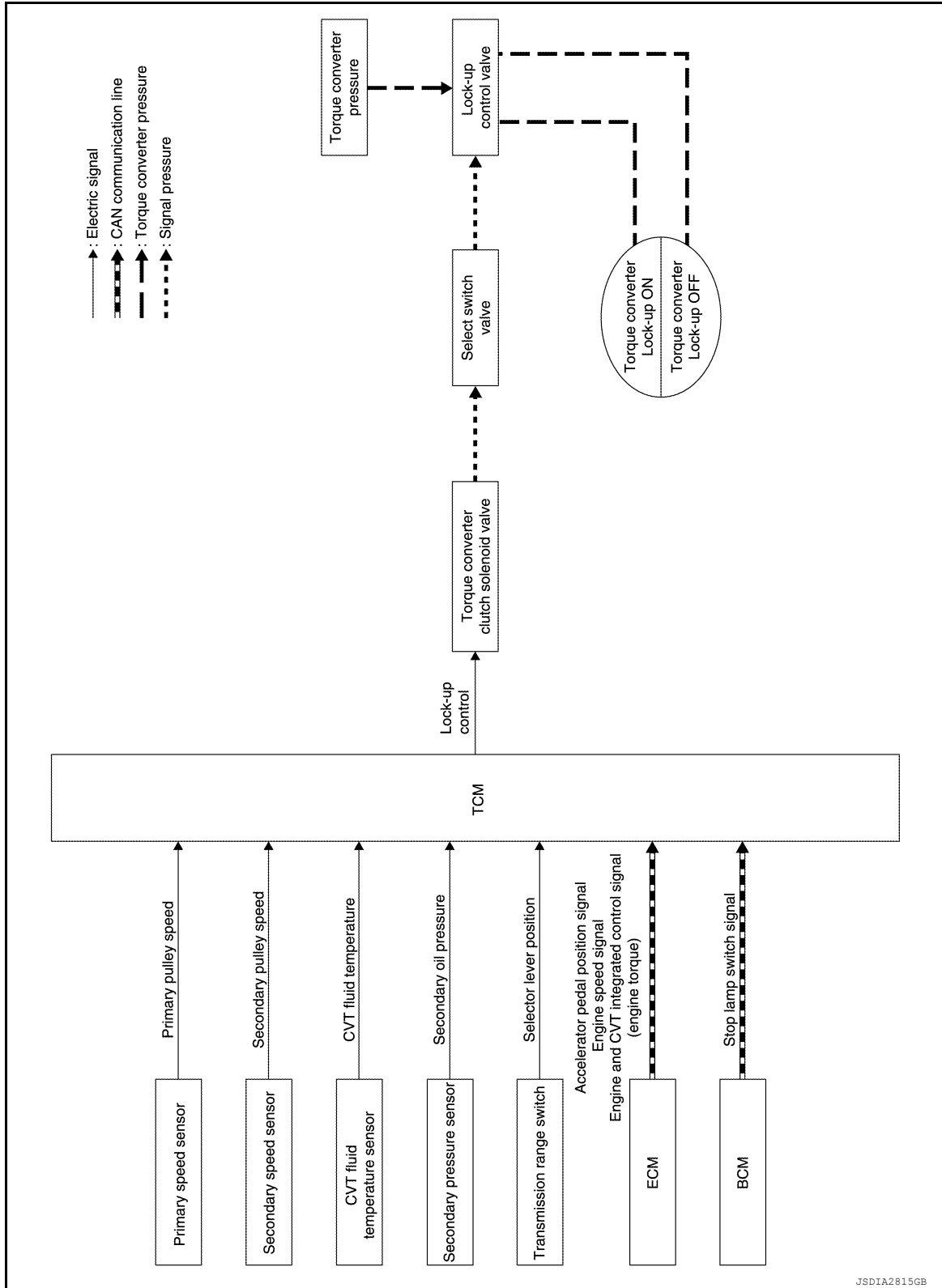
Oil pressure becomes higher than of normal select control for eraser clutch engagement. This may cause larger impact during the clutch engagement.

LOCK-UP CONTROL

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LOCK-UP CONTROL : System Description

SYSTEM DIAGRAM



DESCRIPTION

- The torque converter clutch piston in the torque converter is engaged to eliminate torque converter slip to increase power transmission efficiency.
- The engagement/release of the lock-up clutch is operated by the lock-up control valve by switching the operating hydraulic pressure feed circuit to the lock-up piston chamber.

SYSTEM

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

The switching of the lock-up control valve is operated by the torque converter clutch solenoid valve according to the drive signal from the TCM.

- If the CVT fluid temperature is low or the vehicle is in fail-safe mode due to malfunction, lock-up control is prohibited.

Lock-up Released

In the lock-up released state, the torque converter clutch control valve is set into the unlocked state by the torque converter clutch solenoid valve and the lock-up apply pressure is drained.

In this way, the torque converter clutch piston is not coupled.

Lock-up Applied

In the lock-up applied state, the torque converter clutch control valve is set into the locked state by the torque converter clutch solenoid valve and lock-up apply pressure is generated.

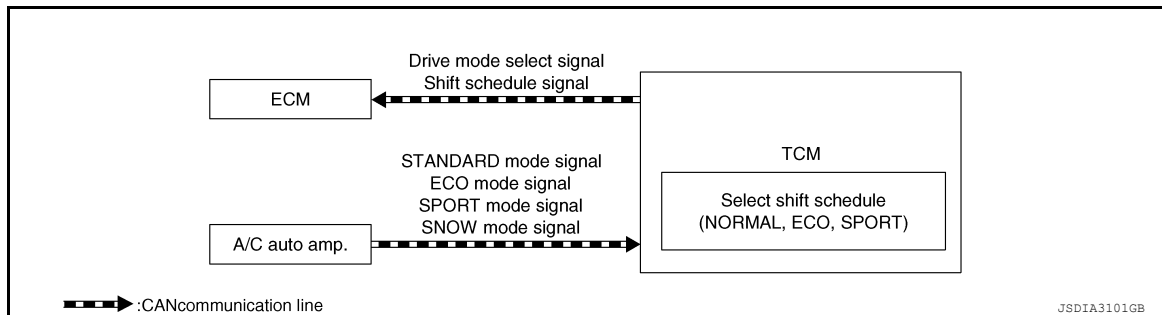
In this way, the torque converter clutch piston is pressed and coupled.

Infiniti Drive Mode Selector

Infiniti Drive Mode Selector : System Description

INFOID:0000000008266594

SYSTEM DIAGRAM



DESCRIPTION

- TCM receives STANDARD mode signal, ECO mode signal, SPORT mode signal, or SNOW mode signal from A/C auto amp. via CAN communication.
- TCM transmits recognized mode and gear shift characteristics result to ECM via CAN communication (by drive mode select signal and shift schedule signal).
- Drive mode may not actually be shifted because of CAN communication malfunction or other causes, although display on combination meter may indicate that shifting of drive mode is complete by operation of drive mode select switch.
- Priority is given to manual mode, when manual mode is selected by operation of selector lever while driving in any other drive mode status.

Control Details of Each Mode

Control item	Control
STANDARD mode	Driving mode that automatically selects the shift schedule considering the balance of fuel economy and driving performance based on the driving condition and driving trend.
ECO mode	Driving characteristic is controlled (for decreasing needless acceleration and deceleration, reducing energy consumption, and fixing to ECO gear shift schedule), so that driving that improves operational fuel efficiency is assisted.
SPORT mode	This mode uses a shift schedule that mainly utilizes the high engine speed zone and improves the driving control characteristic and response. This assists driving that is similar to driving a sports car.

SHIFT LOCK SYSTEM

SHIFT LOCK SYSTEM : System Description

INFOID:0000000008180331

The shift lever cannot be shifted from the "P" position unless the brake pedal is depressed while the ignition switch is set to ON. The shift lock is unlocked by turning the shift lock solenoid ON when the ignition switch is set to ON, the park position switch is turned ON (selector lever is in "P" position), and the stop lamp switch is turned ON (brake pedal is depressed) as shown in the operation chart in the figure. Therefore, the shift lock solenoid receives no ON signal and the shift lock remains locked if all of the above conditions are not fulfilled. However, selector operation is allowed if the shift lock release button is pressed.

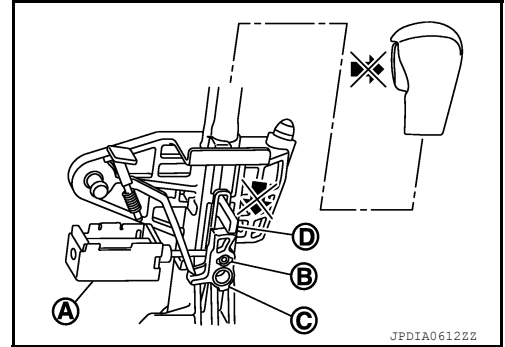
< SYSTEM DESCRIPTION >

SHIFT LOCK OPERATION AT "P" POSITION

When Brake Pedal Is Not Depressed (No Selector Operation Allowed)

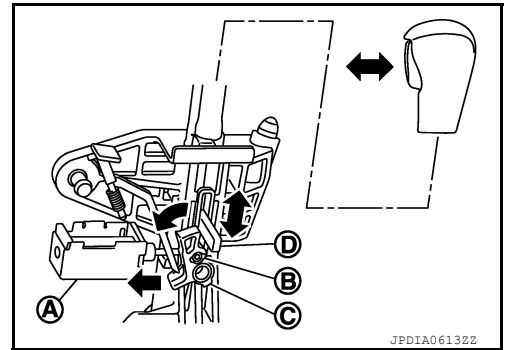
The shift lock solenoid (A) is turned OFF (not energized) and the solenoid rod (B) is extended with the spring when the brake pedal is not depressed (no selector operation allowed) with the ignition switch ON.

The connecting lock lever (C) is located at the position shown in the figure when the solenoid rod is extended. It prevents the movement of the detent rod (D). For these reasons, the selector lever cannot be shifted from the "P" position.



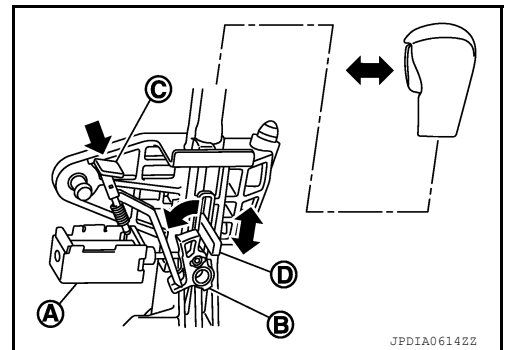
When Brake Pedal Is Depressed (Shift Operation Allowed)

The shift lock solenoid (A) is turned ON (energized) when the brake pedal is depressed with the ignition switch ON. The solenoid rod (B) is compressed by the electromagnetic force. The connecting lock lever (C) rotates when the solenoid is activated. Therefore, the detent rod (D) can be moved. For these reasons, the selector lever can be shifted to other positions.



"P" POSITION HOLD MECHANISM (IGNITION SWITCH LOCK)

The shift lock solenoid (A) is not energized when the ignition switch is in any position other than ON. In this condition, the shift mechanism is locked and "P" position is held. The operation cannot be performed from "P" position if the brake pedal is depressed with the ignition switch ON when the operation system of shift lock solenoid is malfunctioning. However, the lock lever (B) is forcibly rotated and the shift lock is released when the shift lock release button (C) is pressed from above. Then the selector operation from "P" position can be performed.



D : Detent rod

CAUTION:

Use the shift lock release button only when the selector lever cannot be operated even if the brake pedal is depressed with the ignition switch ON.

ON BOARD DIAGNOSTIC (OBD) SYSTEM

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

ON BOARD DIAGNOSTIC (OBD) SYSTEM

Diagnosis Description

INFOID:000000008180332

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

GST (Generic Scan Tool)

INFOID:000000008180333

When GST is connected with a data link connector equipped on the vehicle side, it will communicate with the control unit equipped in the vehicle and then enable various kinds of diagnostic tests. Refer to [GI-61, "Description"](#).

NOTE:

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

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DIAGNOSIS SYSTEM (TCM)

DIAGNOSIS DESCRIPTION

DIAGNOSIS DESCRIPTION : System Description

INFOID:000000008180334

This is an on-board trouble diagnosis system which automatically detects malfunction. Detected malfunction is memorized in TCM as DTC. Diagnosis information can be confirmed using CONSULT.

DIAGNOSIS DESCRIPTION : DTC

INFOID:000000008180335

- DTC (P0703, P0710, P0840, etc.) is specified by SAE J2012/ISO 15031-6.
- TCM memorizes DTC when malfunction is detected. It can memorize plural DTCs.

DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp (MIL)

INFOID:000000008180336

- TCM not only detects DTC, but also sends the CVT self-diagnosis signal to ECM through CAN communication. ECM sends the malfunctioning indicator lamp signal to the combination meter through CAN communication according to the signal, and illuminates MIL.
- For malfunction indicator lamp (MIL) description, refer to [EC-75, "DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp \(MIL\)"](#).

CONSULT Function

INFOID:000000008180337

APPLICABLE ITEM

Conditions	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 a diagram.
CAN Diagnosis Support Monitor	It monitors the status of CAN communication.
ECU Identification	Display the ECU identification number (part number etc.) of the selected system.
CALIB DATA	The calibration data status of TCM can be checked.

SELF DIAGNOSTIC RESULTS

Display Item List

Refer to [TM-55, "DTC Index"](#).

How to Read DTC

DTC is displayed on "Self Diagnostic results" of CONSULT.

When DTC is currently detected, "CRNT" is displayed. If "PAST" is displayed, it shows a malfunction occurred in the past. The trip number of drive without malfunction of concerned DTC can be confirmed with "IGN counter" inside "FFD".

How to Erase DTC

NOTE:

- If the battery terminal is disconnected, the TCM memory is erased. (The disconnection time varies from several seconds to several hours.)
- If the ignition switch is left ON after repair, turn OFF the ignition switch and wait for 10 seconds or more. Then, turn the ignition ON again. (Engine stop)
 1. Touch "TRANSMISSION" of CONSULT.
 2. Touch "Self Diagnostic Result".
 3. Touch "Erase". (DTC memorized in TCM is erased.)

IGN Counter

IGN counter is displayed in "FFD". It displays the number of operations of ignition switch from OFF to ON after DTC recovery to normal.

DIAGNOSIS SYSTEM (TCM)

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

- If malfunction (DTC) is currently detected, "0" is displayed.
- The displayed number counts up at each operation of ignition switch from OFF to ON after recovery to normal, such as 1 → 2 → 3...38 → 39.
- If the number of operation exceeds 39, the displayed number will be fixed at "39" until the self diagnosis result is erased.

DATA MONITOR MODE

Monitored item (Unit)		Remarks
VSP SENSOR	(km/h or mph)	Displays the vehicle speed calculated from the CVT output shaft speed.
ESTM VSP SIG	(km/h or mph)	Displays the vehicle speed signal received through CAN communication.
PRI SPEED SEN	(rpm)	Displays the primary pulley speed calculated from the pulse signal of the primary speed sensor.
ENG SPEED SIG	(rpm)	Displays the engine speed received through CAN communication.
SEC HYDR SEN	(V)	Displays the signal voltage of the secondary pressure sensor.
PRI HYDR SEN	(V)	Displays the signal voltage of the primary pressure sensor.
ATF TEMP SEN	(V)	Displays the signal voltage of the CVT fluid temperature sensor.
VIGN SEN	(V)	Displays the battery voltage applied to TCM.
VEHICLE SPEED	(km/h or mph)	Displays the vehicle speed recognized by TCM.
PRI SPEED	(rpm)	Displays the primary pulley speed recognized by TCM.
SEC SPEED	(rpm)	Displays the secondary pulley speed recognized by TCM.
ENG SPEED	(rpm)	Displays the engine speed recognized by TCM.
SLIP REV	(rpm)	Displays the speed difference between the input shaft speed of CVT and the engine speed.
GEAR RATIO		Displays the pulley gear ratio calculated from primary pulley speed/secondary pulley speed.
G SPEED	(G)	Displays the acceleration and deceleration speed of the vehicle calculated from vehicle speed change.
ACCEL POSI SEN 1	(0.0/8)	Displays the estimated throttle position received through CAN communication.
TRQ RTO		Display the torque ratio of torque converter.
SEC PRESS	(MPa)	Displays the secondary pressure calculated from the signal voltage of the secondary pressure sensor.
PRI PRESS	(MPa)	Displays the primary pressure calculated from the signal voltage of the primary pressure sensor.
ATFTEMP COUNT		Means CVT fluid temperature. Actual oil temperature °C (°F) cannot be checked unless a numeric value is converted. Refer to TM-46, "ATFTEMP COUNT Conversion Table" .
DSR REV	(rpm)	Displays the target primary pulley speed calculated from processing of gear shift control.
DGEAR RATIO		Displays the target gear ratio.
DSTM STEP	(step)	Displays the target number of steps of the step motor, calculated from processing of gear shift control.
STM STEP	(step)	Displays the actual number of steps of the step motor, calculated from processing of gear shift control.
LU PRS	(MPa)	Displays the target oil pressure of the torque converter clutch solenoid valve calculated from oil pressure processing of gear shift control.
LINE PRS	(MPa)	Displays the target oil pressure of the line pressure solenoid valve calculated from oil pressure processing of gear shift control.
TGT SEC PRESS	(MPa)	Displays the target oil pressure of the secondary pressure solenoid valve calculated from oil pressure processing of gear shift control.
ISOLT1	(A)	Displays the command current from TCM to the torque converter clutch solenoid valve.
ISOLT2	(A)	Displays the command current from TCM to the line pressure solenoid valve.

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Monitored item (Unit)	Remarks
ISOLT3 (A)	Display the command current from TCM to the secondary pressure solenoid valve.
SOLMON1 (A)	Monitors the command current from TCM to the torque converter clutch solenoid valve and displays the monitored value.
SOLMON2 (A)	Monitors the command current from TCM to the line pressure solenoid valve and displays the monitored value.
SOLMON3 (A)	Monitors the command current from TCM to the secondary pressure solenoid valve and displays the monitored value.
BRAKESW (On/Off)	Displays the reception status of the stop lamp switch signal received through CAN communication.
FULL SW (On/Off)	<ul style="list-style-type: none"> • Displays the reception status of the wide open throttle position signal received through CAN communication. • It is displayed although not equipped.
IDLE SW (On/Off)	Displays the reception status of the closed throttle position signal received through CAN communication.
SPORT MODE SW (On/Off)	<ul style="list-style-type: none"> • Displays the reception status of the overdrive control switch signal received through CAN communication. • It is displayed although not equipped.
STRDWNSW (On/Off)	<ul style="list-style-type: none"> • Displays the operation status of the paddle shifter (down switch). • It is displayed although not equipped.
STRUPSW (On/Off)	<ul style="list-style-type: none"> • Displays the operation status of the paddle shifter (up switch). • It is displayed although not equipped.
DOWNLVR (On/Off)	Displays the operation status of the selector lever (down switch).
UPLVR (On/Off)	Displays the operation status of the selector lever (up switch).
NONMMODE (On/Off)	Displays if the selector lever position is not at the manual shift gate.
MMODE (On/Off)	Displays if the selector lever position is at the manual shift gate.
INDLRNG (On/Off)	Displays the transmission status of the shift position ("L" position) signal transmitted through CAN communication.
INDDRNG (On/Off)	Displays the transmission status of the shift position ("D" position) signal transmitted through CAN communication.
INDNRNG (On/Off)	Displays the transmission status of the shift position ("N" position) signal transmitted through CAN communication.
INDRNG (On/Off)	Displays the transmission status of the shift position ("R" position) signal transmitted through CAN communication.
INDPRNG (On/Off)	Displays the transmission status of the shift position ("P" position) signal transmitted through CAN communication.
CVT LAMP (On/Off)	<ul style="list-style-type: none"> • Displays the transmission status of the CVT indicator signal transmitted through CAN communication. • It is displayed although not equipped.
SPORT MODE IND (On/Off)	<ul style="list-style-type: none"> • Displays the transmission status of the O/D OFF indicator signal transmitted through CAN communication. • It is displayed although not equipped.
MMODE IND (On/Off)	Displays the transmission status of the manual mode signal transmitted through CAN communication.
SMCOIL D (On/Off)	Displays the energizing status of step motor coil "D".
SMCOIL C (On/Off)	Displays the energizing status of step motor coil "C".
SMCOIL B (On/Off)	Displays the energizing status of step motor coil "B".
SMCOIL A (On/Off)	Displays the energizing status of step motor coil "A".
LUSEL SOL OUT (On/Off)	Displays the command value from TCM to the lock-up select solenoid valve.
LUSEL SOL MON (On/Off)	Monitors the command value from TCM to the lock-up select solenoid valve and displays the monitored value.
VDC ON (On/Off)	Displays the reception status of the VDC operation signal received through CAN communication.

DIAGNOSIS SYSTEM (TCM)

[CVT: RE0F09B]

< SYSTEM DESCRIPTION >

Monitored item (Unit)		Remarks
TCS ON	(On/Off)	Displays the reception status of the TCS operation signal received through CAN communication.
ABS ON	(On/Off)	Displays the reception status of the ABS operation signal received through CAN communication.
ACC ON	(On/Off)	Displays the reception status of the ASCD operation signal received through CAN communication.
RANGE		Displays the gear position recognized by TCM.
M GEAR POS	(On/Off)	Display the target gear of manual mode
RANGE SW 3M	(On/Off)	Displays the operation status of the transmission range switch ("D" and "L" positions).
RANGE SW 4	(On/Off)	Displays the operation status of the transmission range switch ("R" and "D" positions).
RANGE SW 3	(On/Off)	Displays the operation status of the transmission range switch ("D" and "L" positions).
RANGE SW 2	(On/Off)	Displays the operation status of the transmission range switch ("N", "D", and "L" positions).
RANGE SW 1	(On/Off)	Displays the operation status of the transmission range switch ("R", "N", and "D" positions).
REV LAMP	(On/Off)	<ul style="list-style-type: none"> Displays the command condition from TCM to the back-up lamp relay. It is displayed although not equipped.
STRTR RLY OUT	(On/Off)	Displays the command condition from TCM to the stater motor relay.
STRTR RLY MON	(On/Off)	Monitors the command condition from TCM to the stater motor relay and displays the monitored value.
DRIVE MODE STATS		Displays the drive mode status recognized by TCM.
SPORT MODE	(On/Off)	Displays the status of drive mode select switch signal received via CAN communication.
STANDARD MODE	(On/Off)	
ECO MODE	(On/Off)	
SNOW MODE	(On/Off)	

WORK SUPPORT MODE

Item name	Description
ENGINE BRAKE ADJ.	The engine brake level setting can be canceled.
CONFORM CVTF DETERIORATION	The CVT fluid deterioration level can be checked.

Engine Brake Adjustment

ENGINE BRAKE LEVEL

0 : Initial set value (Engine brake level control is activated)

OFF : Engine brake level control is deactivated.

CAUTION:

Mode of "+1", "0", "-1", "-2", "OFF" can be selected by touching "UP" or "DOWN" on CONSULT screen. However, do not select a mode other than "0" and "OFF". Selecting "+1" or "-1" or "-2" may cause irregular driveability.

Check CVT Fluid Deterioration Date

CVTF DETERIORATION DATE

210000 or more : It is necessary to change CVT fluid.

Less than 210000 : It is not necessary to change CVT fluid.

CAUTION:

Touch "Clear" after changing CVT fluid, and then erase "CVTF DETERIORATION DATE".

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

ATFTEMP COUNT Conversion Table

INFOID:000000008180338

ATFTEMP COUNT	Temperature °C (°F)	ATFTEMP COUNT	Temperature °C (°F)
4	-30 (-22)	177	90 (194)
8	-20 (-4)	183	95 (203)
13	-10 (14)	190	100 (212)
17	-5 (23)	196	105 (221)
21	0 (32)	201	110 (230)
27	5 (41)	206	115 (239)
32	10 (50)	210	120 (248)
39	15 (59)	214	125 (257)
47	20 (68)	218	130 (266)
55	25 (77)	221	135 (275)
64	30 (86)	224	140 (284)
73	35 (95)	227	145 (293)
83	40 (104)	229	150 (302)
93	45 (113)	231	155 (311)
104	50 (122)	233	160 (320)
114	55 (131)	235	165 (329)
124	60 (140)	236	170 (338)
134	65 (149)	238	175 (347)
143	70 (158)	239	180 (356)
152	75 (167)	241	190 (374)
161	80 (176)	243	200 (392)
169	85 (185)	—	—

ECU DIAGNOSIS INFORMATION

TCM

Reference Value

INFOID:000000008180377

CONSULT DATA MONITOR STANDARD VALUE

Item name	Condition	Display value (Approx.)
VSP SENSOR	During driving	Approximately matches the speedometer reading.
ESTM VSP SIG	During driving	Approximately matches the speedometer reading.
PRI SPEED SEN	During driving (lock-up ON)	Approximately matches the engine speed.
ENG SPEED SIG	Engine running	Closely matches the tachometer reading.
SEC HYDR SEN	"N" position idle	0.5 – 0.8 V
PRI HYDR SEN	"N" position idle	0.7 – 3.5 V
ATF TEMP SEN	CVT fluid: Approx. 20°C (68°F)	2.01 – 2.05 V
	CVT fluid: Approx. 50°C (122°F)	1.45 – 1.50 V
	CVT fluid: Approx. 80°C (176°F)	0.90 – 0.94 V
VIGN SEN	Ignition switch: ON	10 – 16 V
VEHICLE SPEED	During driving	Approximately matches the speedometer reading.
PRI SPEED	During driving (lock-up ON)	Approximately matches the engine speed.
SEC SPEED	During driving	38 X Approximately matches the speedometer reading.
ENG SPEED	Engine running	Closely matches the tachometer reading.
SLIP REV	During driving	Engine speed – Primary speed
GEAR RATIO	During driving	2.37 – 0.43
G SPEED	Vehicle stopped	0.00 G
	During acceleration	The value changes to the positive side along with acceleration.
	During deceleration	The value changes to the positive side along with deceleration.
ACCEL POSI SEN 1	Released accelerator pedal - Fully depressed accelerator pedal	0.0/8 – 8.0/8
TRQ RTO	During driving	The value changes along with acceleration/ deceleration.
SEC PRESS	"N" position idle	0.5 – 0.9 MPa
PRI PRESS	"N" position idle	0.3 – 0.9 MPa
ATFTEMP COUNT*	CVT fluid: Approx. 20°C (68°F)	47
	CVT fluid: Approx. 50°C (122°F)	104
	CVT fluid: Approx. 80°C (176°F)	161
DSR REV	During driving	The value changes to the positive side along with deceleration.
DGEAR RATIO	During driving	The value changes to the positive side along with deceleration.
DSTM STEP	During driving	–20 step – 190 step
STM STEP	During driving	–20 step – 190 step

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Item name	Condition	Display value (Approx.)
LU PRS	<ul style="list-style-type: none"> • Engine started • Vehicle is stopped 	-0.500 MPa
	<ul style="list-style-type: none"> • Selector lever: "D" position • Accelerator pedal position: 1/8 or less • Vehicle speed: 20 km/h (12 MPH) or more 	0.450 MPa
LINE PRS	<ul style="list-style-type: none"> • After engine warm up • Selector lever: "N" position • At idle 	0.800 MPa
	<ul style="list-style-type: none"> • After engine warm up • Selector lever: "N" position • Depress the accelerator pedal fully 	4.930 – 5.430 MPa
TGT SEC PRESS	<ul style="list-style-type: none"> • After engine warm up • Selector lever: "N" position • At idle 	0.700 MPa
ISOLT1	Lock-up OFF	0.0 A
	Lock-up ON	0.7 A
ISOLT2	Release the accelerator pedal	0.8 A
	Press the accelerator pedal all the way down	0.0 A
ISOLT3	Secondary pressure low - Secondary pressure high	0.8 – 0.0 A
SOLMON1	Lock-up OFF	0.0 A
	Lock-up ON	0.6 – 0.7 A
SOLMON2	"N" position idle	0.8 A
	When stalled	0.3 – 0.6 A
SOLMON3	"N" position idle	0.6 – 0.7 A
	When stalled	0.4 – 0.6 A
BRAKESW	Depressed brake pedal	On
	Released brake pedal	Off
FULL SW	Always	Off
IDLE SW	Released accelerator pedal	On
	Fully depressed accelerator pedal	Off
SPORT MODE SW	Always	Off
STRDWSW	Always	Off
STRUPSW	Always	Off
DOWNLVR	Selector lever is shifted to - side	On
	Other than the above	Off
UPLVR	Selector lever is shifted to + side	On
	Other than the above	Off
NONMMODE	Selector lever is shifted to manual shift gate side	Off
	Other than the above	On
MMODE	Selector lever is shifted to manual shift gate side	On
	Other than the above	Off
INDLRNG	Always	Off
INDDRNG	Selector lever in "D" position	On
	Selector lever in other positions	Off
INDNRNG	Selector lever in "N" position	On
	Selector lever in other positions	Off

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Item name	Condition	Display value (Approx.)	
INDRRNG	Selector lever in "R" position	On	A
	Selector lever in other positions	Off	
INDPRNG	Selector lever in "P" position	On	B
	Selector lever in other positions	Off	
CVT LAMP	Always	Off	C
SPORT MODE IND	Always	Off	
MMODE IND	In manual mode	On	
	Other conditions	Off	TM
SMCOIL D	During driving	Changes ON ⇔ OFF	
SMCOIL C	During driving	Changes ON ⇔ OFF	
SMCOIL B	During driving	Changes ON ⇔ OFF	E
SMCOIL A	During driving	Changes ON ⇔ OFF	
LUSEL SOL OUT	Selector lever in "P" and "N" positions	On	F
	Wait at least for 5 seconds with the selector lever in "R", "D", and "L" positions	Off	
LUSEL SOL MON	Selector lever in "P" and "N" positions	On	G
	Wait at least for 5 seconds with the selector lever in "R", "D", and "L" positions	Off	
VDC ON	VDC operate	On	H
	Other conditions	Off	
TCS ON	TCS operate	On	I
	Other conditions	Off	
ABS ON	ABS operate	On	J
	Other conditions	Off	
ACC ON	ASCD operate	On	K
	Other condition	Off	
RANGE	Selector lever in "N" and "P" positions	N-P	L
	Selector lever in "R" position	R	
	Selector lever in "D" position	D	
M GEAR POS	Gear position: M1	1	M
	Gear position: M2	2	
	Gear position: M3	3	
	Gear position: M4	4	
	Gear position: M5	5	N
	Gear position: M6	6	
RANGE SW 3M	Selector lever in "D" position	On	O
	Selector lever in "P", "R", and "N" positions	Off	
RANGE SW 4	Selector lever in "R" and "D" positions	On	P
	Selector lever in "P" and "N" positions	Off	
RANGE SW 3	Selector lever in "D" position	On	
	Selector lever in "P", "R", and "N" positions	Off	
RANGE SW 2	Selector lever in "N" and "D" position	On	
	Selector lever in "P" and "R" positions	Off	
RANGE SW 1	Selector lever in "R", "N", and "D" positions	On	
	Selector lever in "P" position	Off	

TCM

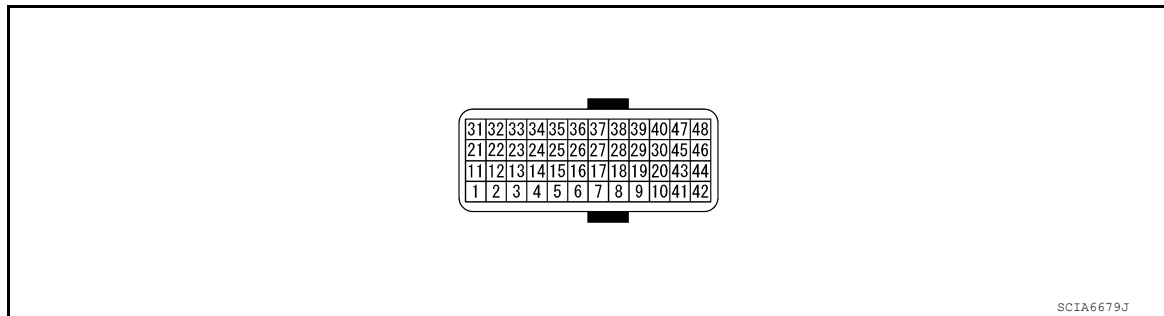
< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Item name	Condition	Display value (Approx.)
REV LAMP	Always	Off
STRTR RLY OUT	Selector lever in "P" and "N" positions	On
	Selector lever in other positions	Off
STRTR RLY MON	Selector lever in "P" and "N" positions	On
	Selector lever in other positions	Off
DRIVE MODE STATS	Drive mode select switch: STANDARD mode	NORMAL
	Drive mode select switch: SPORT mode	SPORT
	Drive mode select switch: ECO mode	ECO
	Drive mode select switch: SNOW mode	SNOW
SPORT MODE	Drive mode select switch: SPORT mode	On
	Other than above	Off
NORMAL MODE	Drive mode select switch: STANDARD mode	On
	Other than above	Off
ECO MODE	Drive mode select switch: ECO mode	On
	Other than above	Off
SNOW MODE	Drive mode select switch: SNOW mode	On
	Other than above	Off

*: Means CVT fluid temperature. Actual oil temperature °C (°F) cannot be checked unless a numeric value is converted. Refer to [TM-46](#), "[ATFTEMP COUNT Conversion Table](#)".

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	-	Signal name	Input/ Output			
1 (SB)	Ground	Transmission range switch 2	Input	Ignition switch ON	Selector lever in "N" and "D" positions	0 V
					Selector lever in other po- sitions	10 – 16 V
2 (L)	Ground	Transmission range switch 3	Input		Selector lever in "D" posi- tion	0 V
					Selector lever in other po- sitions	10 – 16 V
3 (BR)	Ground	Transmission range switch 4	Input		Selector lever in "R" and "D" positions	0 V
					Selector lever in other po- sitions	10 – 16 V
4 (BR)	Ground	Transmission range switch 3 (monitor)	Input		Selector lever in "D" posi- tion	0 V
					Selector lever in other po- sitions	10 – 16 V
5 (B)	Ground	Ground	Output		Always	0 V
7 (LG)	Ground	Sensor ground	Output		Always	0 V
8 (L)	—	ROM ASSY (CLOCK)	—	—	—	
9 (Y)	—	ROM ASSY (CHIP SE- LECT)	—	—	—	
10 (P)	—	ROM ASSY (DATA I/O)	—	—	—	
11 (V)	Ground	Transmission range switch 1	Input	Ignition switch ON	Selector lever in "R", "N", and "D" positions	0 V
					Selector lever in other po- sitions	10 – 16 V
13 (LG)	Ground	CVT fluid temperature sensor	Input	Ignition switch ON	When CVT fluid tempera- ture is 20°C (68°F)	2.01 – 2.05 V
					When CVT fluid tempera- ture is 50°C (122°F)	1.45 – 1.50 V
					When CVT fluid tempera- ture is 80°C (176°F)	0.90 – 0.94 V
14 (LG)	Ground	Primary pressure sensor	Input	"N" position idle	0.7 – 3.5 V	
15 (Y)	Ground	Secondary pressure sen- sor	Input		0.5 – 0.8 V	
20 (GR)	Ground	Starter relay	Output	Ignition switch ON	Selector lever in "N" and "P" positions	10 – 16 V
					Selector lever in other po- sitions	0 V
25 (Y)	Ground	Sensor ground	Output	Always	0 V	
26 (LG)	Ground	Sensor power	Output	Ignition switch ON	5.0 V	
				Ignition switch OFF	0 V	

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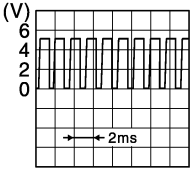
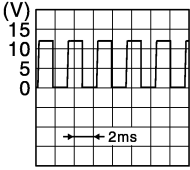
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TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
27 (V)	Ground	Step motor D	Output	Within 2 seconds after ignition switch ON, the time measurement by using the pulse width measurement function (Hi level) of CONSULT.* CAUTION: Connect the diagnosis data link cable to the vehicle diagnosis connector.	10.0 msec
28 (SB)	Ground	Step motor C	Output		30.0 msec
29 (L)	Ground	Step motor B	Output		10.0 msec
30 (BR)	Ground	Step motor A	Output		30.0 msec
31 (P)	—	CAN-L	Input/ Output	—	—
32 (L)	—	CAN-H	Input/ Output	—	—
33 (LG)	Ground	Primary speed sensor	Input	When driving ["M1" position, 20 km/h (12 MPH)]	640 Hz  <small>JPDIA0877ZZ</small>
34 (BR)	Ground	Secondary speed sensor	Input	When driving ["D" position, 20 km/h (12 MPH)]	350 Hz  <small>JPDIA0878ZZ</small>
37 (Y)	Ground	Lock-up select solenoid valve	Output	Ignition switch ON	Selector lever in "P" and "N" positions 10 – 16 V
				Wait at least for 5 seconds with the selector lever in "R" and "D" positions 0 V	
38 (BR)	Ground	Torque converter clutch solenoid valve	Output	When vehicle drive in "D" position	When CVT performs lock-up 6.0 V
				When CVT does not perform lock-up 1.0 V	
39 (L)	Ground	Secondary pressure solenoid valve	Output	"N" positions idle	Release the accelerator pedal when warmed up the engine 5.0 – 7.0 V
					Depress the full acceleration when warmed up the engine 3.0 – 4.0 V
40 (SB)	Ground	Line pressure solenoid valve	Output	"N" positions idle	Release the accelerator pedal when warmed up the engine 5.0 – 7.0 V
					Depress the full acceleration when warmed up the engine 1.0 – 3.0 V
42 (B)	Ground	Ground	Output	Always	0 V

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal name	Input/ Output		
45 (LG)	Ground	Power supply (memory back-up)	Input	Always	10 – 16 V
46 (Y)	Ground	Power supply	Output	Ignition switch ON	10 – 16 V
				Ignition switch OFF	0 V
48 (Y)	Ground	Power supply	Output	Ignition switch ON	10 – 16 V
				Ignition switch OFF	0 V

*: A circuit tester cannot be used to test this item.

Fail-safe

INFOID:000000008180378

DESCRIPTION

TCM has a fail-safe mode. The mode functions so that operation can be continued even if the signal circuit of the main electronically controlled input/output parts is damaged.

DTC	Conditions of vehicle	Vehicle behavior
P0615	—	Does not start the engine
P0703	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow
P0705	—	<ul style="list-style-type: none"> • Shift position indicator on combination meter is not displayed • Does not start the engine when TCM cannot recognize P range • Does not start the engine when TCM cannot recognize N range • Selector shock is large • Start is slow • Acceleration is slow • Manual mode is not activated • Lock-up is not performed
P0710	Engine coolant temperature when engine starts is 10°C (50°F) or more.	Acceleration is slow
	Engine coolant temperature when engine starts is less than 10°C (50°F).	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Vehicle speed is not increased
	Engine coolant temperature when engine starts is less than -35°C (-31°F).	Vehicle speed is not increased
P0715	—	<ul style="list-style-type: none"> • Acceleration is slow • Restart is slow after stopping with strong deceleration • Manual mode is not activated • Lock-up is not performed
P0720	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Restart is slow after stopping with strong deceleration • Manual mode is not activated • Lock-up is not performed
P0725	—	Lock-up is not performed
P0740	—	<ul style="list-style-type: none"> • Selector shock is large • Lock-up is not performed
P0744	—	Lock-up is not performed
P0745	—	—

TCM

[CVT: RE0F09B]

< ECU DIAGNOSIS INFORMATION >

DTC	Conditions of vehicle	Vehicle behavior
P0746	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Lock-up is not performed
	Function deterioration is remarkable after detection of malfunction	<ul style="list-style-type: none"> • Start is difficulty • Driving is difficulty • Lock-up is not performed
P0776	—	—
P0778	—	Vehicle speed is not increased
P0826	—	Manual mode is not activated
P0840	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow
P0841	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow
P0845	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow
P0868	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow
P1701	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow
P1705	—	<ul style="list-style-type: none"> • Acceleration is slow • Lock-up is not performed
P1709	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Shift position indicator (P, N) is not displayed, or is displayed with delay
P1722	—	Lock-up is not performed in coast condition
P1723	When detected malfunction of primary speed sensor	<ul style="list-style-type: none"> • Acceleration is slow • Restart is slow after stopping with strong deceleration • Manual mode is not activated • Lock-up is not performed
	When detected malfunction of secondary speed sensor	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Restart is slow after stopping with strong deceleration • Manual mode is not activated • Lock-up is not performed
P1726	—	Acceleration is slow
P1740	—	<ul style="list-style-type: none"> • Selector shock is large • Lock-up is not performed
P1777	When detected malfunction of low side (stop the vehicle)	<ul style="list-style-type: none"> • Vehicle speed is not increased • Lock-up is not performed
	When detected malfunction of high side (driving the vehicle)	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Lock-up is not performed
U1000	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Vehicle speed is not increased
U1010	—	<ul style="list-style-type: none"> • Start is slow • Acceleration is slow • Vehicle speed is not increased

DTC Inspection Priority Chart

INFOID:000000008180379

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

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Priority	Detected items (DTC)	Reference
1	P1709 INCOMPLETED DATA WRITING	TM-136
	U0100 LOST COMM (ECM A)	TM-87
	U1000 CAN COMM CIRC	TM-88
	U1010 CONTROL UNIT (CAN)	TM-89
2	P0725 ENGINE SPEED	TM-106
	P1705 TP SENSOR	TM-135
	P1726 THROTTLE CONTROL SIGNAL	TM-140
3	P0615 STARTER RELAY	TM-90
	P0703 BRAKE SWITCH B	TM-92
	P0705 T/M RANGE SENSOR A	TM-95
	P0710 FLUID TEMP SENSOR A	TM-98
	P0715 INPUT SPEED SENSOR A	TM-101
	P0720 OUTPUT SPEED SENSOR	TM-103
	P0740 TORQUE CONVERTER	TM-107
	P0745 PC SOLENOID A	TM-111
	P0778 PC SOLENOID B	TM-117
	P0826 UP/DOWN SHIFT SWITCH	TM-119
	P0840 FLUID PRESS SEN/SW A	TM-122
	P0845 FLUID PRESS SEN/SW B	TM-127
	P1701 TCM	TM-132
	P1722 VEHICLE SPEED	TM-138
	P1740 SLCT SOLENOID	TM-141
	P1777 STEP MOTOR	TM-143
4	P0744 TORQUE CONVERTER	TM-109
	P0746 PC SOLENOID A	TM-113
	P0776 PC SOLENOID B	TM-115
	P0841 FLUID PRESS SEN/SW A	TM-124
	P0868 FLUID PRESS LOW	TM-129
	P1723 SPEED SENSOR	TM-139
	P1778 STEP MOTOR	TM-146

DTC Index

INFOID:000000008180380

NOTE:

If some DTCs are displayed at the same time, perform inspections one by one based on the priority as per the following list. Refer to [TM-54, "DTC Inspection Priority Chart"](#).

DTC*1		Trouble diagnosis name	Reference
"TRANSMISSION" with CONSULT	MIL *2, "ENGINE" with CONSULT or GST		
P0615	—	STARTER RELAY	TM-90
P0703	—	BRAKE SWITCH B	TM-90
P0705	P0705	T/M RANGE SENSOR A	TM-95
P0710	P0710	FLUID TEMP SENSOR A	TM-98
P0715	P0715	INPUT SPEED SENSOR A	TM-101
P0720	P0720	INPUT SPEED SENSOR A	TM-103

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

DTC*1		Trouble diagnosis name	Reference
"TRANSMISSION" with CONSULT	MIL *2, "ENGINE" with CONSULT or GST		
P0725	—	ENGINE SPEED	TM-106
P0740	P0740	TORQUE CONVERTER	TM-107
P0744	P0744	TORQUE CONVERTER	TM-109
P0745	P0745	PC SOLENOID A	TM-111
P0746	P0746	PC SOLENOID A	TM-113
P0776	P0776	PC SOLENOID B	TM-115
P0778	P0778	PC SOLENOID B	TM-117
P0826	—	UP/DOWN SHIFT SWITCH	TM-119
P0840	P0840	FLUID PRESS SEN/SW A	TM-122
P0841	—	FLUID PRESS SEN/SW A	TM-124
P0845	P0845	FLUID PRESS SEN/SW B	TM-127
P0868	—	FLUID PRESS LOW	TM-129
P1701	—	TCM	TM-132
P1705	—	TP SENSOR	TM-135
P1709	—	INCOMPLETED DATA WRITING	TM-136
P1722	—	VEHICLE SPEED	TM-138
P1723	—	SPEED SENSOR	TM-139
P1726	—	THROTTLE CONTROL SIGNAL	TM-140
P1740	P1740	SLCT SOLENOID	TM-141
P1777	P1777	STEP MOTOR	TM-143
P1778	P1778	STEP MOTOR	TM-146
U0100	U0100	LOST COMM (ECM A)	TM-87
U1000	U1000	CAN COMM CIRCUIT	TM-88
U1010	—	CONTROL UNIT (CAN)	TM-89

*1: These numbers are prescribed by SAE J2012/ISO 15031-6.

*2: Refer to [TM-41, "Diagnosis Description"](#).

CVT CONTROL SYSTEM

[CVT: RE0F09B]

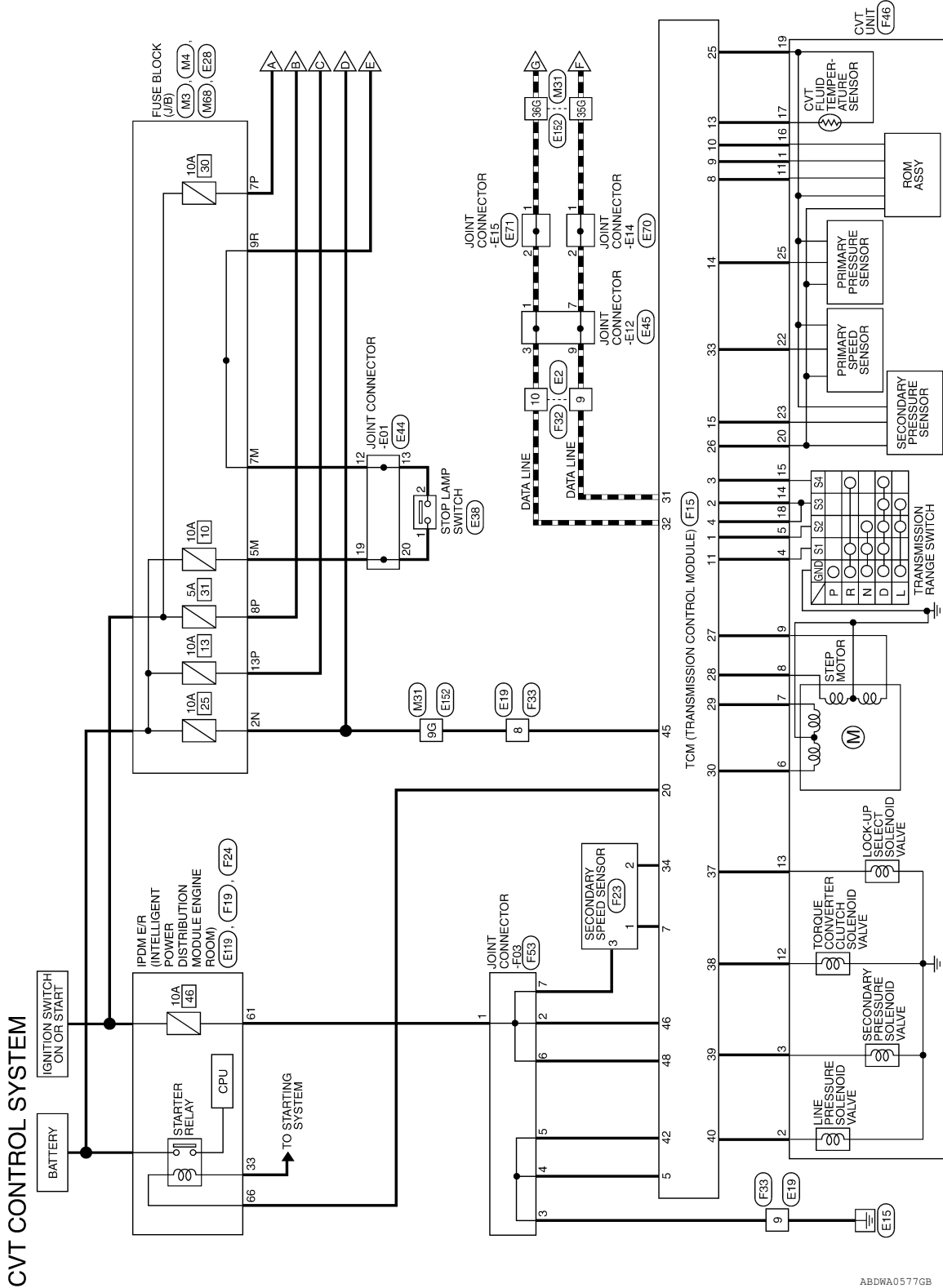
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WIRING DIAGRAM

CVT CONTROL SYSTEM

Wiring Diagram

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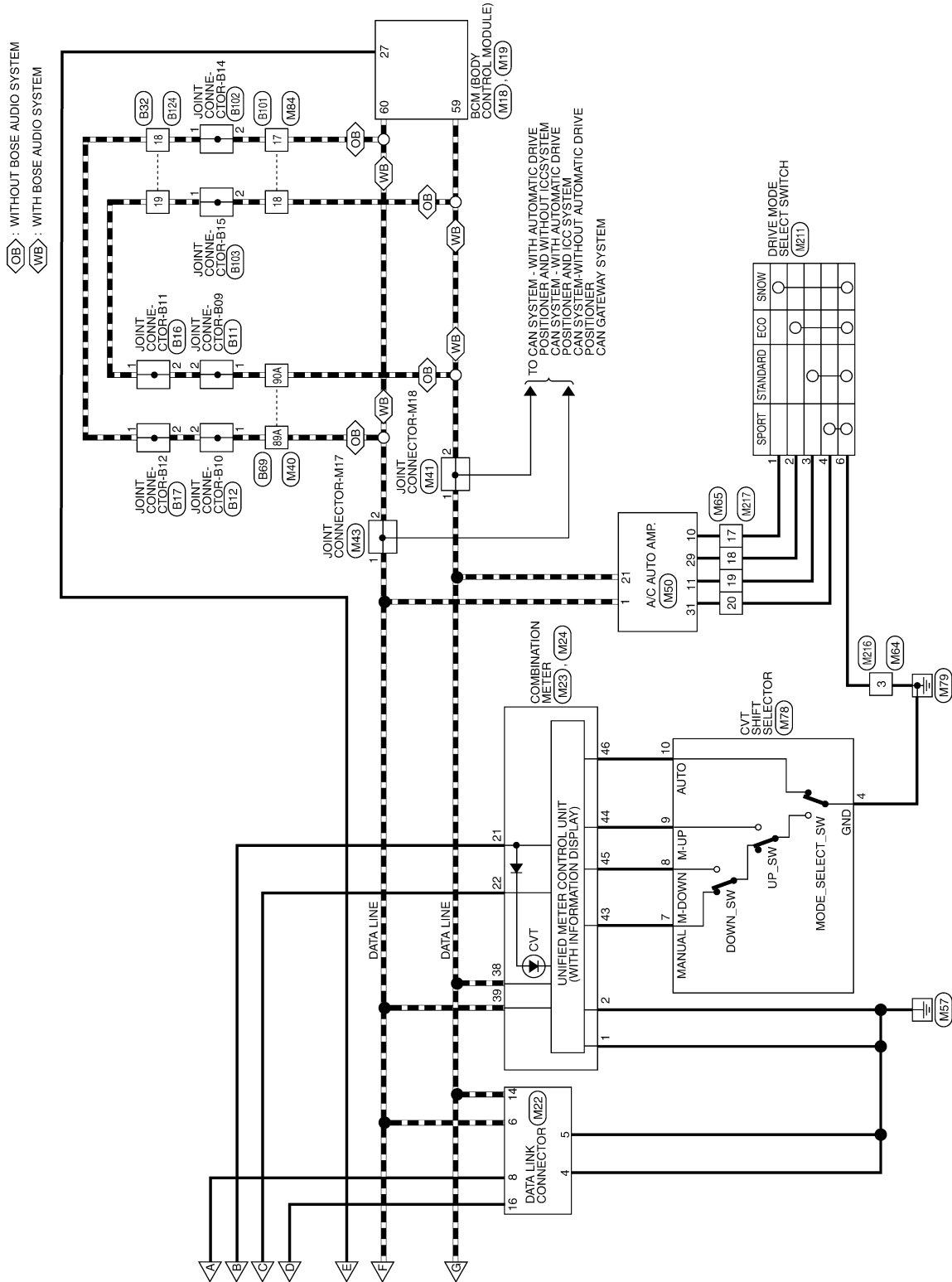
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

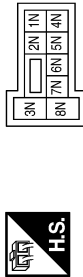
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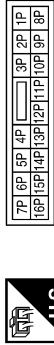
CVT CONTROL SYSTEM CONNECTORS

Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2N	BG	-

Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



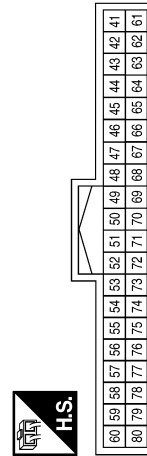
Terminal No.	Color of Wire	Signal Name
7P	LG	-
8P	BG	-
13P	W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



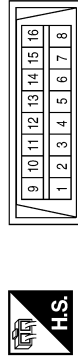
Terminal No.	Color of Wire	Signal Name
27	G	BRAKE SW LAMP

Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



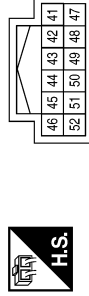
Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H

Connector No.	M22
Connector Name	DATA LINK CONNECTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
4	B	-
5	B	-
6	L	-
8	LG	-
14	P	-
16	BG	-

Connector No.	M23
Connector Name	COMBINATION METER
Connector Color	WHITE



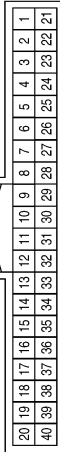
Terminal No.	Color of Wire	Signal Name
43	V	M RANGE SE
44	BG	AT SHIFT UP
45	W	AT SHIFT DOWN
46	P	NOT M RANGE SW

CVT CONTROL SYSTEM

< WIRING DIAGRAM >

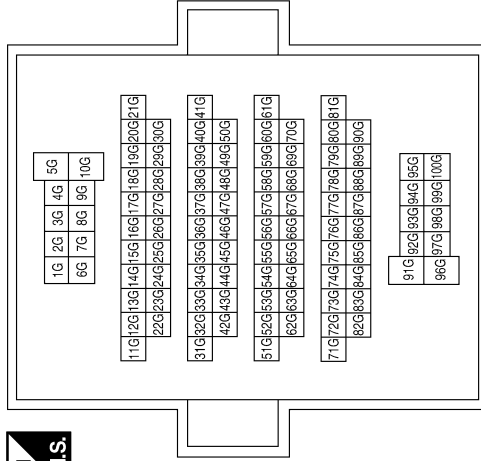
[CVT: RE0F09B]

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



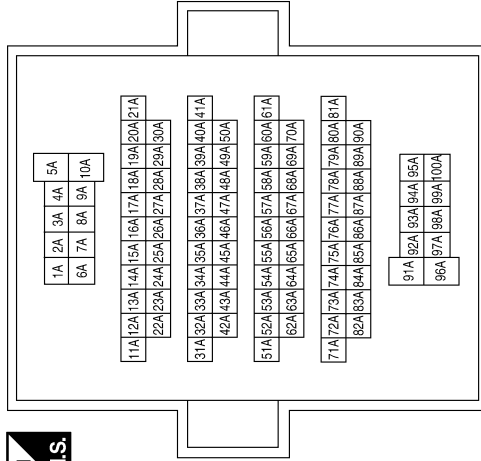
Terminal No.	Color of Wire	Signal Name
1	B	GND 1
2	B	GND 2
21	BG	IGN
22	W	BAT
38	P	CAN-L
39	L	CAN-H

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9G	BG	-
35G	P	-
36G	L	-

Connector No.	M40
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
89A	L	-
90A	P	-

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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F09B]

Connector No.	M50
Connector Name	A/C AUTO AMP.
Connector Color	WHITE



1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40

Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
10	SB	MODE1
11	G	MODE3
21	P	CAN-L
29	P	MODE2
31	BG	MODE4

Connector No.	M43
Connector Name	JOINT CONNECTOR-M17
Connector Color	WHITE



4	3	2	1
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Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

Connector No.	M41
Connector Name	JOINT CONNECTOR-M18
Connector Color	WHITE



4	3	2	1
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Terminal No.	Color of Wire	Signal Name
1	P	-
2	P	-

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



7R	8R	5R	4R
16R	15R	14R	13R
12R	11R	10R	9R
8R	2R	1R	

Terminal No.	Color of Wire	Signal Name
9R	G	-

Connector No.	M65
Connector Name	WIRE TO WIRE
Connector Color	WHITE



16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

Terminal No.	Color of Wire	Signal Name
17	SB	-
18	P	-
19	G	-
20	BG	-

Connector No.	M64
Connector Name	WIRE TO WIRE
Connector Color	WHITE



7	6	5	4
16	15	14	13
12	11	10	9
8			

Terminal No.	Color of Wire	Signal Name
3	B	-

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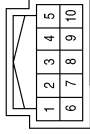
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

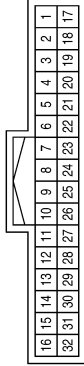
[CVT: RE0F09B]

Connector No.	M211
Connector Name	DRIVE MODE SELECT SWITCH
Connector Color	BLACK



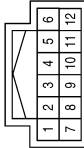
Terminal No.	Color of Wire	Signal Name
1	W	-
2	L	-
3	G	-
4	Y	-
6	B	-

Connector No.	M84
Connector Name	WIRE TO WIRE
Connector Color	WHITE



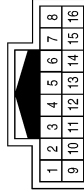
Terminal No.	Color of Wire	Signal Name
17	L	-
18	P	-

Connector No.	M78
Connector Name	CVT SHIFT SELECTOR
Connector Color	WHITE



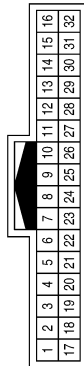
Terminal No.	Color of Wire	Signal Name
4	GR	-
7	V	-
8	W	-
9	BG	-
10	P	-

Connector No.	E2
Connector Name	WIRE TO WIRE
Connector Color	WHITE



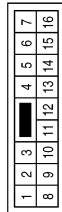
Terminal No.	Color of Wire	Signal Name
9	P	-
10	L	-

Connector No.	M217
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
17	W	-
18	L	-
19	G	-
20	Y	-

Connector No.	M216
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	B	-

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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

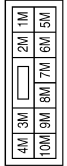
[CVT: RE0F09B]

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	WHITE



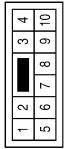
Terminal No.	Color of Wire	Signal Name
1	G	-
2	P	-

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



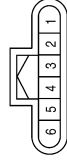
Terminal No.	Color of Wire	Signal Name
5M	G	-
7M	P	-

Connector No.	E19
Connector Name	WIRE TO WIRE
Connector Color	WHITE



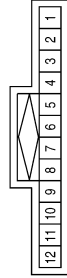
Terminal No.	Color of Wire	Signal Name
8	BG	-
9	B	-

Connector No.	E70
Connector Name	JOINT CONNECTOR-E14
Connector Color	BLACK



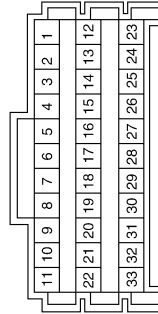
Terminal No.	Color of Wire	Signal Name
1	P	-
2	P	-

Connector No.	E45
Connector Name	JOINT CONNECTOR-E12
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	L	-
3	L	-
7	P	-
9	P	-

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
12	P	-
13	P	-
19	Y	-
20	Y	-

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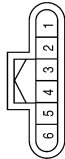
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

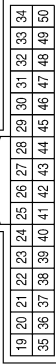
[CVT: RE0F09B]

Connector No.	E71
Connector Name	JOINT CONNECTOR-E71S
Connector Color	BLACK



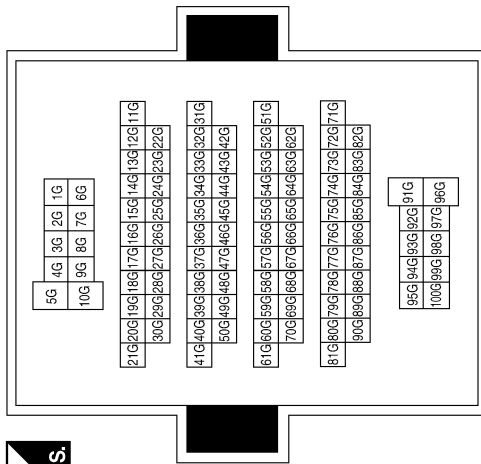
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

Connector No.	E119
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
19	SB	SUB ECU

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9G	BG	-
35G	P	-
36G	L	-

CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F09B]

Connector No.	F19
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



52	53	54	55
56	57	58	59
60	61		

Terminal No.	Color of Wire	Signal Name
61	Y	AT ECU

Terminal No.	Color of Wire	Signal Name
20	GR	STARTER RELAY
21	-	-
22	-	-
23	-	-
24	-	-
25	Y	SENSOR GROUND
26	LG	SENSOR POWER
27	V	STEP MOTOR D
28	SB	STEP MOTOR C
29	L	STEP MOTOR B
30	BR	STEP MOTOR A
31	P	CAN-L
32	L	CAN-H
33	LG	PRIMARY SPEED SENSOR
34	BR	SECONDARY SPEED SENSOR
35	-	-
36	-	-
37	Y	LOCK-UP SELECT SOLENOID VALVE
38	BR	TORQUE CONVERTOR CLUTCH SOLENOID VALVE
39	L	SECONDARY PRESSURE SOLENOID VALVE
40	SB	LINE PRESSURE SOLENOID VALVE
41	-	-
42	B	GROUND
43	-	-
44	-	-
45	LG	POWER SUPPLY (MEMORY BACK-UP)
46	Y	POWER SUPPLY
47	-	-
48	Y	POWER SUPPLY

Connector No.	F15
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



31	32	33	34	35	36	37	38	39	40	47	48
21	22	23	24	25	26	27	28	29	30	45	46
11	12	13	14	15	16	17	18	19	20	43	44
1	2	3	4	5	6	7	8	9	10	41	42

Terminal No.	Color of Wire	Signal Name
1	SB	TRANSMISSION RANGE SWITCH 2
2	L	TRANSMISSION RANGE SWITCH 3
3	BR	TRANSMISSION RANGE SWITCH 4
4	BR	TRANSMISSION RANGE SWITCH 3 (MONITOR)
5	B	GROUND
6	-	-
7	LG	SENSOR GROUND
8	L	ROM ASSY (CLOCK)
9	Y	ROM ASSY (CHIP SELECT)
10	P	ROM ASSY (DATA I/O)
11	V	TRANSMISSION RANGE SWITCH 1
12	-	-
13	LG	CVT FLUID TEMPERATURE SENSOR
14	LG	PRIMARY PRESSURE SENSOR
15	Y	SECONDARY PRESSURE SENSOR
16	-	-
17	-	-
18	-	-
19	-	-

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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

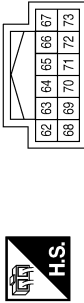
[CVT: RE0F09B]

Connector No.	F23
Connector Name	SECONDARY SPEED SENSOR
Connector Color	BLACK



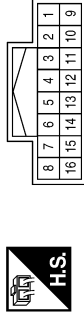
Terminal No.	Color of Wire	Signal Name
1	LG	-
2	BR	-
3	Y	-

Connector No.	F24
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



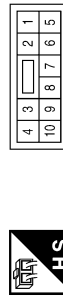
Terminal No.	Color of Wire	Signal Name
66	GR	NPSW

Connector No.	F32
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
9	P	-
10	L	-

Connector No.	F33
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	LG	-
9	B	-

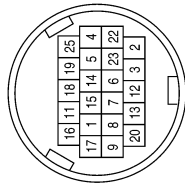
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F09B]

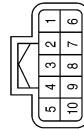
Connector No.	F46
Connector Name	CVT UNIT
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	Y	-
2	SB	-
3	L	-
4	V	-
5	SB	-
6	BR	-
7	L	-
8	SB	-
9	V	-
11	L	-
12	BR	-

Terminal No.	Color of Wire	Signal Name
13	Y	-
14	L	-
15	BR	-
16	P	-
17	LG	-
18	BR	-
19	Y	-
20	LG	-
22	LG	-
23	Y	-
25	LG	-

Connector No.	F53
Connector Name	JOINT CONNECTOR-F03
Connector Color	BLACK



Connector No.	B11
Connector Name	JOINT CONNECTOR-B09
Connector Color	WHITE



Connector No.	B12
Connector Name	JOINT CONNECTOR-B10
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	Y	-
2	Y	-
3	B	-
4	B	-
5	B	-
6	Y	-
7	Y	-

Terminal No.	Color of Wire	Signal Name
1	P	-
2	P	-

Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

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CVT CONTROL SYSTEM

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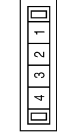
[CVT: RE0F09B]

Connector No.	B16
Connector Name	JOINT CONNECTOR-B11
Connector Color	WHITE



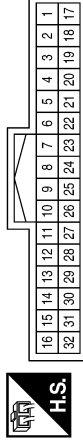
Terminal No.	Color of Wire	Signal Name
1	P	-
2	P	-

Connector No.	B17
Connector Name	JOINT CONNECTOR-B12
Connector Color	WHITE



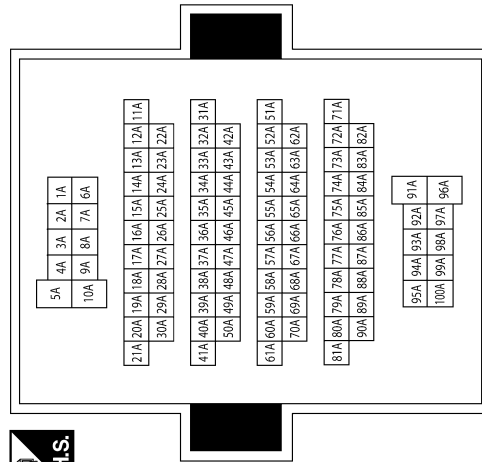
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

Connector No.	B32
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
18	L	-
19	P	-

Connector No.	B69
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
89A	L	-
90A	P	-

Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



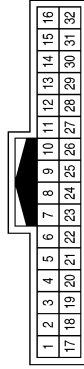
Terminal No.	Color of Wire	Signal Name
17	L	-
18	P	-

CVT CONTROL SYSTEM

< WIRING DIAGRAM >

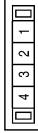
[CVT: RE0F09B]

Connector No.	B124
Connector Name	WIRE TO WIRE
Connector Color	WHITE



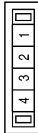
Terminal No.	Color of Wire	Signal Name
18	L	-
19	P	-

Connector No.	B103
Connector Name	JOINT CONNECTOR-B15
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	P	-
2	P	-

Connector No.	B102
Connector Name	JOINT CONNECTOR-B14
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

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CVT SHIFT LOCK SYSTEM

[CVT: RE0F09B]

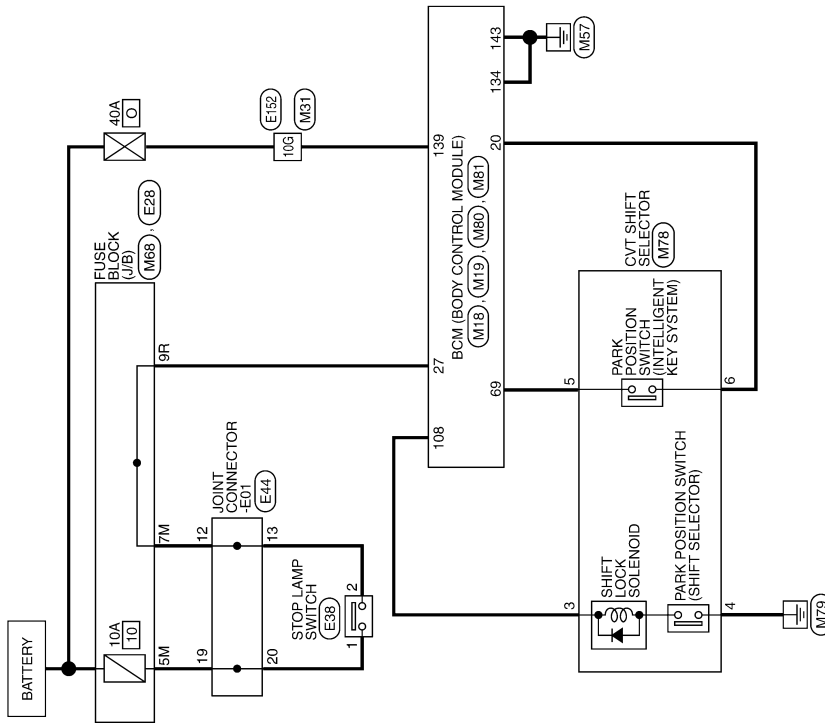
< WIRING DIAGRAM >

CVT SHIFT LOCK SYSTEM

Wiring Diagram

INFOID:000000007883129

CVT SHIFT LOCK SYSTEM



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CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F09B]

CVT SHIFT LOCK SYSTEM CONNECTORS

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21

Terminal No.	Color of Wire	Signal Name
20	W	SHIFT P
27	G	BRAKE SW LAMP

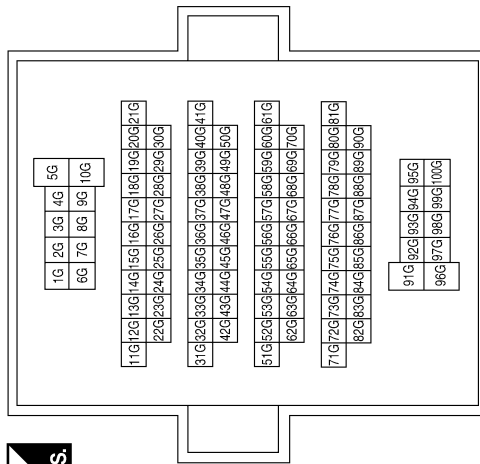
Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41
80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61

Terminal No.	Color of Wire	Signal Name
69	G	AT DEVICE OUT

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10G	W	-

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Color	BROWN



7R	6R	5R	4R	3R	2R	1R		
16R	15R	14R	13R	12R	11R	10R	9R	8R

Terminal No.	Color of Wire	Signal Name
9R	G	-

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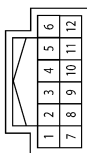
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CVT SHIFT LOCK SYSTEM

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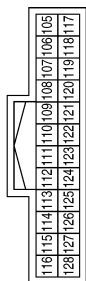
[CVT: RE0F09B]

Connector No.	M78
Connector Name	CVT SHIFT SELECTOR
Connector Color	WHITE



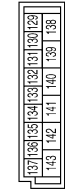
Terminal No.	Color of Wire	Signal Name
3	G	-
4	GR	-
5	G	-
6	W	-

Connector No.	M80
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



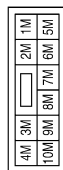
Terminal No.	Color of Wire	Signal Name
108	G	SHIFT LOCK SOLENOID OUT

Connector No.	M81
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
134	B	GND 2
139	W	BAT POWER F/L
143	B	GND 1

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



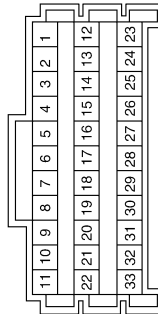
Terminal No.	Color of Wire	Signal Name
5M	G	-
7M	P	-

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	G	-
2	P	-

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
12	P	-
13	P	-
19	G	-
20	G	-

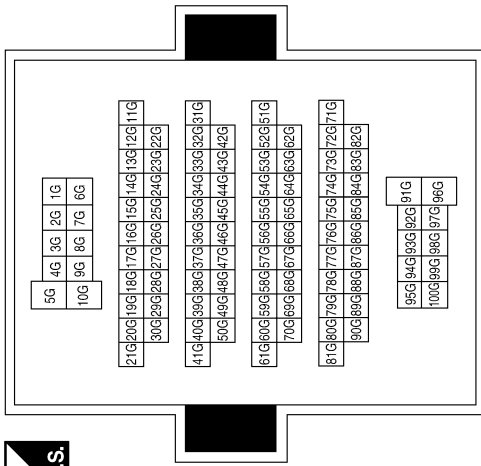
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CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F09B]

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
10G	P	-

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BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000008180381

1. COLLECT THE INFORMATION FROM THE CUSTOMER

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred) using the question sheet. Refer to [TM-75, "Diagnostic Work Sheet"](#).

>> GO TO 2.

2. CHECK SYMPTOM 1

Check the following items based on the information obtained from the customer.

- Fail-safe. Refer to [TM-53, "Fail-safe"](#).
- CVT fluid inspection. Refer to [TM-164, "Inspection"](#).
- Line pressure test. Refer to [TM-80, "Work Procedure"](#).
- Stall test. Refer to [TM-79, "Work Procedure"](#).

>> GO TO 3.

3. CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.
 - Record DTC.
 - Erase DTC.

Is any DTC detected?

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

4. PERFORM DIAGNOSTIC PROCEDURE

Perform "Diagnostic Procedure" for the displayed DTC. Repair detected items.

>> GO TO 5.

5. PERFORM DTC CONFIRMATION PROCEDURE

Perform "DTC CONFIRMATION PROCEDURE" for the displayed DTC.

Is DTC detected?

- YES >> GO TO 4.
NO >> GO TO 6.

6. CHECK SYMPTOM 2

Confirm the symptom described by the customer.

Is any malfunction present?

- YES >> GO TO 7.
NO >> INSPECTION END

7. ROAD TEST

Perform "ROAD TEST". Refer to [TM-82, "Description"](#).

>> GO TO 8.

8. CHECK SYMPTOM 3

Confirm the symptom described by the customer.

Is any malfunction present?

- YES >> GO TO 2.

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[CVT: RE0F09B]

NO >> INSPECTION END

Diagnostic Work Sheet

INFOID:000000008180382

DESCRIPTION

There are many operating conditions that may cause a malfunction of the transmission parts. By understanding those conditions properly, a quick and exact diagnosis can be achieved.

In general, perception of a problem varies depending on individuals. Ask the customer about his/her concerns carefully. It is important to understand the phenomenon or status. To systemize all the information for the diagnosis, prepare the question sheet referring to the question points.

In some cases, multiple conditions that appear simultaneously may cause a DTC to be detected.

KEY POINTS

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

SEP907L

WORKSHEET SAMPLE

Question sheet

Customer's name		MR/MS	Registration number		Initial year registration		Year	Month	day
			Vehicle type		Chassis No.				
Storage date			Engine		Mileage				km/MPH
Symptom	<input type="checkbox"/> Vehicle does not drive. (<input type="checkbox"/> R position <input type="checkbox"/> D position <input type="checkbox"/> L position) <input type="checkbox"/> Upshifting does not occur. <input type="checkbox"/> Downshifting does not occur. <input type="checkbox"/> Lock-up malfunction <input type="checkbox"/> Shift point is too high. <input type="checkbox"/> Shift point is too low. <input type="checkbox"/> Shift shock (<input type="checkbox"/> N⇒D <input type="checkbox"/> Lock-up <input type="checkbox"/> R, D, and L position) <input type="checkbox"/> Slip (<input type="checkbox"/> N⇒D <input type="checkbox"/> Lock-up <input type="checkbox"/> R, D, and L position) <input type="checkbox"/> Noise <input type="checkbox"/> Vibration When selector lever position is shifted, shift pattern does not change. <input type="checkbox"/> Other								
First occurrence	<input type="checkbox"/> Recently (as from month of year)								
Frequency of occurrence	<input type="checkbox"/> Always <input type="checkbox"/> Under certain conditions <input type="checkbox"/> Sometimes (time(s)/day)								
Climate conditions	Irrelevant								
	Weather	<input type="checkbox"/> Clear <input type="checkbox"/> Cloud <input type="checkbox"/> Rain <input type="checkbox"/> Snow <input type="checkbox"/> Others ()							
	Temperature	<input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold <input type="checkbox"/> Temperature (Approx. °C/°F)							
	Relative humidity	<input type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low							
Transaxle condition	<input type="checkbox"/> In cold-start <input type="checkbox"/> During warm-up (approx. °C/°F) <input type="checkbox"/> After warm-up <input type="checkbox"/> Engine speed: rpm								
Road conditions	<input type="checkbox"/> Urban area <input type="checkbox"/> Suburb area <input type="checkbox"/> Highway <input type="checkbox"/> Mountainous road (uphill or downhill)								
Operating condition, etc.	Irrelevant <input type="checkbox"/> When engine starts <input type="checkbox"/> During idling <input type="checkbox"/> During driving <input type="checkbox"/> During acceleration <input type="checkbox"/> At constant speed driving <input type="checkbox"/> During deceleration <input type="checkbox"/> During cornering (RH curve or LH curve)								
Other conditions									

ADDITIONAL SERVICE WHEN REPLACING TCM

< BASIC INSPECTION >

[CVT: RE0F09B]

ADDITIONAL SERVICE WHEN REPLACING TCM

Description

INFOID:000000008180383

When replacing the TCM, perform the following work.

LOADING AND STORING OF CALIBRATION DATA

- The TCM acquires calibration data (individual characteristic value) of each solenoid that is stored in the ROM assembly (in the control valve). This enables the TCM to perform accurate control. After the TCM is replaced, check that the calibration data is correctly loaded and stored.

CAUTION:

When replacing TCM and transaxle assembly as a set, replace transaxle assembly first and then replace TCM.

If the TCM is replaced in advance, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY". Refer to [TM-77, "Description"](#).

Procedure

INFOID:000000008180384

CAUTION:

Immediately after TCM is replaced or after control valve or transaxle assembly is replaced (after TCM initialization is complete), self-diagnosis result of "P1701", "P1709" may be displayed. In this case, erase self-diagnosis result using CONSULT. After erasing self-diagnosis result, perform DTC P1701, P1709 reproduction procedure and check that malfunction is not detected. Refer to [TM-132, "DTC Logic"](#) (P1701), [TM-136, "DTC Logic"](#) (P1709).

1. LOAD CALIBRATION DATA

1. Shift the selector lever to the "P" position.
2. Turn ignition switch ON.
3. Check that "P" is displayed on shift position indicator on combination meter.

NOTE:

Displayed approximately 1 – 2 seconds after the selector lever is moved to the "P" position.

Does the shift position indicator display "P"?

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

2. DETECT MALFUNCTIONING ITEM

Check the following items:

- Harness between the TCM and the ROM assembly inside the transaxle assembly is open or shorted.
- Disconnected, loose, bent, collapsed, or otherwise abnormal connector housing terminals

Is the inspection result normal?

- YES >> GO TO 1.
NO >> Repair or replace the malfunctioning parts.

3. STORE CALIBRATION DATA

1. Turn ignition switch OFF and wait for 5 seconds.
2. Turn ignition switch ON.

Does the shift position indicator display "P" at the same time when turning ON the ignition switch?

- YES >> WORK END
NO >> Check harness between battery and TCM harness connector terminal. Refer to [TM-132, "Diagnosis Procedure"](#).

ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F09B]

ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

Description

INFOID:000000008180385

When replacing the transaxle assembly, perform the following work.

ERASING, LOADING AND STORING OF CALIBRATION DATA

- The TCM acquires calibration data (individual characteristic value) of each solenoid that is stored in the ROM assembly (in the control valve). This enables the TCM to perform accurate control. For this reason, after the transaxle assembly/control valve is replaced, it is necessary to erase the calibration data previously stored in TCM, to load new calibration data, and to store them.

ERASING OF CVT FLUID DEGRADATION LEVEL DATA

- TCM records the degradation level of the CVT fluid calculated from the vehicle driving status. Therefore, if the transaxle assembly/control valve is replaced, it is necessary to erase the CVT fluid degradation level data recorded by TCM.

Procedure

INFOID:000000008180386

CAUTION:

Immediately after TCM is replaced or after transaxle assembly is replaced (after TCM initialization is complete), self-diagnosis result of "P1701", "P1709" may be displayed. In this case, erase self-diagnosis result using CONSULT. After erasing self-diagnosis result, perform DTC P1701, P1709 reproduction procedure and check that malfunction is not detected. Refer to [TM-132. "DTC Logic" \(P1701\)](#), [TM-136. "DTC Logic" \(P1709\)](#).

1. PREPARATION BEFORE WORK

Ⓜ With CONSULT

1. Start the engine.

CAUTION:

Never drive the vehicle.

2. Select "Data Monitor" in "TRANSMISSION".
3. Select "ATFTEMP COUNT".

Is "ATFTEMP COUNT" 47 [equivalent to 20°C (68°F)] or more?

YES >> GO TO 2.

- NO >> 1. Warm up the transaxle assembly until "ATFTEMP COUNT" reaches "47" [equivalent to 20°C (68°F)] or more.
2. GO TO 2.

2. PERFORM TCM INITIALIZATION

Ⓜ With CONSULT

1. Turn ignition switch OFF.
 2. Turn ignition switch ON.
- #### CAUTION:
- Never start the engine.**
3. Select "Self Diagnostic Results" in "TRANSMISSION".
 4. Shift selector lever to "R" position.
 5. Depress slightly the accelerator pedal (Pedal angle: 2.0/8) while depressing the brake pedal.
 6. Select "Erase" with step 5.
 7. Release brake pedal and accelerator pedal.
 8. Turn ignition switch OFF while keeping the selector lever in "R" position.
 9. Wait approximately 10 seconds.
 10. Turn ignition switch ON while keeping the selector lever in "R" position.
 11. Select "CALIB DATA" in "TRANSMISSION".
 12. Check that "CALIB DATA" value is as shown as in the following table.

Item name	Display value
UNIT CLB ID 1	00
UNIT CLB ID 2	00
UNIT CLB ID 3	00

ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F09B]

Item name	Display value
UNIT CLB ID 4	00
UNIT CLB ID 5	00
UNIT CLB ID 6	00

Is "CALIB DATA" value it?

YES >> GO TO 3.

NO >> GO TO 1.

3. LOAD CALIBRATION DATA

1. Shift selector lever to "P" position.
2. Check that "P" is displayed on shift position indicator on combination meter.

NOTE:

It indicates approximately 1 – 2 seconds after shifting the selector lever to "P" position.

Does shift position indicator display "P"?

YES >> GO TO 5.

NO >> GO TO 4.

4. DETECT MALFUNCTIONING ITEM

Check the following items:

- Harness between the TCM and the ROM assembly inside the transaxle assembly is open or shorted.
- Disconnected, loose, bent, collapsed, or otherwise abnormal connector housing terminals
- Power supply and ground of TCM. (Refer to [TM-132, "Diagnosis Procedure"](#).)

Is the inspection result normal?

YES >> GO TO 1.

NO >> Repair or replace the malfunctioning parts.

5. STORE CALIBRATION DATA

1. Turn ignition switch OFF and wait for 5 seconds.
2. Turn ignition switch ON.

Does the shift position indicator display "P" at the same time when turning ON the ignition switch?

YES >> GO TO 6.

NO >> Check harness between battery and TCM harness connector terminal. Refer to [TM-132, "Diagnosis Procedure"](#).

6. ERASE CVT FLUID DEGRADATION LEVEL DATA

Ⓜ With CONSULT

1. Select "WORK SUPPORT" in "TRANSMISSION".
2. Select "CONFORM CVTF DETERIORATION".
3. Touch "Clear".

>> WORK END

STALL TEST

< BASIC INSPECTION >

[CVT: RE0F09B]

STALL TEST

Work Procedure

INFOID:000000008180387

1. Check the amount of engine oil. Replenish if necessary. Refer to [LU-8, "Inspection"](#).
2. Check for leak of the CVT fluid. Refer to [TM-164, "Inspection"](#).
3. Drive for about 10 minutes to warm up the vehicle so that the CVT fluid temperature is 50 to 80°C (122 to 176°F).
4. Be sure to apply the parking brake and block the tires.
5. Start the engine, depress the brake pedal and shift the selector lever to the "D" position.
6. While depressing the brake pedal, depress the accelerator pedal gradually.
7. Read the stall speed quickly. Then, release your foot from the accelerator pedal quickly.

CAUTION:

Never depress the accelerator pedal for 5 seconds or more during the test.

Stall speed : [TM-191, "Stall Speed"](#)

8. Shift the selector lever to the "N" position.
9. Cool the CVT fluid.
CAUTION:
Run the engine with the idle speed for at least 1 minute.
10. Shift the selector lever to the "R" position and perform Step 6 to Step 9 again.

RESULT OF INSPECTION

	"D" position	"R" position	Possible cause
Stall speed	H	O	• Forward clutch
	O	H	• Reverse brake
	L	L	• Engine and torque converter one-way clutch • Accelerator pedal position sensor
	H	H	• Line pressure low • Primary pulley • Secondary pulley • Steel belt

- O: Stall speed within standard value position.
- H: Stall speed is higher than standard value.
- L: Stall speed is lower than standard value.

LINE PRESSURE TEST

[CVT: RE0F09B]

< BASIC INSPECTION >

LINE PRESSURE TEST

Work Procedure

INFOID:000000008180388

1. Check the amount of engine oil. Replenish if necessary. Refer to [LU-8, "Inspection"](#).
2. Check for leak of the CVT fluid. Refer to [TM-164, "Inspection"](#).
3. Drive for about 10 minutes to warm up the vehicle so that the CVT fluid temperature is 50 to 80°C (122 to 176°F).
4. After warming up transaxle assembly, remove oil pressure detection plug (A) and install oil pressure gauge [special service tool: — (OTC3492)].

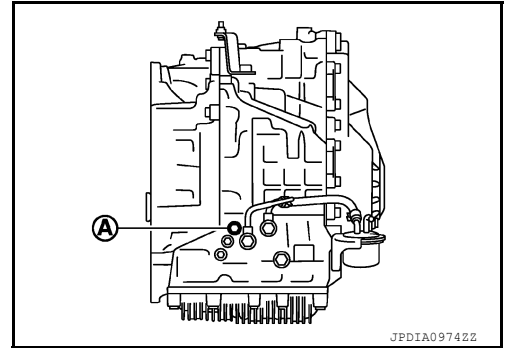
NOTE:

When using oil pressure gauge, be sure to use O-ring attached to oil pressure detection plug.

5. Be sure to apply the parking brake and block the tires.
6. Start the engine.
7. Measure the line pressure at both idle and the stall speed.

CAUTION:

Keep brake pedal pressed all the way down during measurement.



Line pressure : [TM-191, "Line Pressure"](#)

8. Install O-ring to fluid pressure detection plug after the measurements are complete.

CAUTION:

- **Never reuse O-ring.**
- **Apply CVT fluid to O-ring.**

9. Install oil pressure detection plug and tighten to the specified torque.

 : **7.5 N·m (0.77 kg-m, 66 in-lb)**

RESULT OF INSPECTION

Condition		Possible cause
Idle speed	Low for all positions ("P", "R", "N", "D")	Possible causes include malfunctions in the pressure supply system and low oil pump output. For example <ul style="list-style-type: none"> • Oil pump wear • Pressure regulator valve or plug sticking or spring fatigue • Oil strainer → oil pump → pressure regulator valve passage oil leak • Engine idle speed too low
	Only low for a specific position	Possible causes include an oil pressure leak in a passage or device related to the position after the pressure is distributed by the manual valve.
	High	Possible causes include a sensor malfunction or malfunction in the line pressure adjustment function. For example <ul style="list-style-type: none"> • Accelerator pedal position signal malfunction • CVT fluid temperature sensor malfunction • Line pressure solenoid malfunction (sticking in OFF state, filter clog, cut line) • Pressure regulator valve or plug sticking

LINE PRESSURE TEST

< BASIC INSPECTION >

[CVT: RE0F09B]

	Condition	Possible cause
Stall speed	Line pressure does not rise higher than the line pressure for idle.	Possible causes include a sensor malfunction or malfunction in the pressure adjustment function. For example <ul style="list-style-type: none"> • TCM malfunction • Line pressure solenoid malfunction (shorting, sticking in ON state) • Pressure regulator valve or plug sticking
	The pressure rises, but does not enter the standard position.	Possible causes include malfunctions in the pressure supply system and malfunction in the pressure adjustment function. For example <ul style="list-style-type: none"> • Oil pump wear • Line pressure solenoid valve or plug sticking • Pressure regulator valve or plug sticking
	Only low for a specific position	Possible causes include an oil pressure leak in a passage or device related to the position after the pressure is distributed by the manual valve.

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ROAD TEST

Description

INFOID:000000008180389

- The purpose of the test is to determine the overall performance of CVT and analyze causes of problems.
- The road test consists of the following three parts:
 1. [TM-82. "Check before Engine Is Started"](#)
 2. [TM-82. "Check at Idle"](#)
 3. [TM-83. "Cruise Test"](#)
- Before the road test, familiarize yourself with all test procedures and items to check.
- Perform tests for all the check items until a malfunction phenomenon is detected. Perform diagnosis for NG items after the completion of road tests.

Check before Engine Is Started

INFOID:000000008180390

1. CHECK SHIFT POSITION INDICATOR

1. Park vehicle on flat surface.
2. Shift the selector lever to "P" position.
3. Turn ignition switch OFF and wait at least 5 seconds.
4. Turn ignition switch ON.

Is shift position indicator displayed?

- YES >> 1. Turn ignition switch OFF.
 2. Perform self-diagnosis and note NG items. Refer to [TM-55. "DTC Index"](#).
 3. Go to [TM-82. "Check at Idle"](#).
- NO >> Stop "Road Test". Refer to [TM-152. "Symptom Table"](#).

Check at Idle

INFOID:000000008180391

1. CHECK STARTING THE ENGINE (PART 1)

1. Park vehicle on flat surface.
2. Shift the selector lever to "P" and "N" positions.
3. Turn ignition switch OFF.
4. Turn ignition switch to "START" position.

Is engine started?

- YES >> GO TO 2.
 NO >> Stop "Road Test". Refer to [TM-152. "Symptom Table"](#).

2. CHECK STARTING THE ENGINE (PART 2)

1. Turn ignition switch OFF.
2. Turn ignition switch ON.
3. Shift the selector lever to "R" and "D" positions.
4. Turn ignition switch to "START" position.

Is engine started?

- YES >> Stop "Road Test". Refer to [TM-152. "Symptom Table"](#).
 NO >> GO TO 3.

3. CHECK "P" POSITION FUNCTION

1. Shift the selector lever to "P" position.
2. Turn ignition switch OFF.
3. Release parking brake.
4. Push vehicle forward or backward.
5. Apply parking brake.

Does vehicle move forward or backward?

- YES >> Refer to [TM-152. "Symptom Table"](#). GO TO 4.
 NO >> GO TO 4.

4. CHECK "N" POSITION FUNCTION

ROAD TEST

[CVT: RE0F09B]

< BASIC INSPECTION >

1. Start the engine.
2. Shift the selector lever to "N" position.
3. Release parking brake.

Does vehicle move forward or backward?

- YES >> Refer to [TM-152, "Symptom Table"](#). GO TO 5.
NO >> GO TO 5.

5.CHECK SHIFT SHOCK

1. Apply foot brake.
2. Shift the selector lever to "R" position.

Is there large shock when changing from "N" to "R" position?

- YES >> Refer to [TM-152, "Symptom Table"](#). GO TO 6.
NO >> GO TO 6.

6.CHECK "R" POSITION FUNCTION

Release foot brake for several seconds.

Does vehicle creep backward?

- YES >> GO TO 7.
NO >> Refer to [TM-152, "Symptom Table"](#). GO TO 7.

7.CHECK "D" POSITION FUNCTION

Shift the selector lever to "D" positions and check if vehicle creeps forward.

Does vehicle creep forward?

- YES >> Go to [TM-83, "Cruise Test"](#).
NO >> Stop "Road Test". Refer to [TM-152, "Symptom Table"](#).

Cruise Test

INFOID:000000008180392

1.CHECK VEHICLE SPEED WHEN SHIFTING GEARS (PART 1)

1. Drive vehicle for approximately 10 minutes to warm engine oil and CVT fluid up to operating temperature.

CVT fluid operating temperature : 50 – 80°C (122 – 176°F)

2. Park vehicle on flat surface.
3. Shift the selector lever to "P" position.
4. Start the engine.
5. Shift the selector lever to "D" position.
6. Accelerate vehicle at 2/8 throttle opening.
7. Read vehicle speed and engine speed. Refer to [TM-191, "Shift Characteristics"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Refer to [TM-152, "Symptom Table"](#). GO TO 2.

2.CHECK VEHICLE SPEED WHEN SHIFTING GEARS (PART 2)

1. Stop the vehicle on flat surface.
2. Accelerate vehicle at 8/8 throttle opening.
3. Read vehicle speed and engine speed. Refer to [TM-191, "Shift Characteristics"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Refer to [TM-152, "Symptom Table"](#). GO TO 3.

3.CHECK MANUAL MODE FUNCTION

Move to manual mode from "D" position.

Does it switch to manual mode?

- YES >> GO TO 4.
NO >> Refer to [TM-152, "Symptom Table"](#). GO TO 4.

4.CHECK SHIFT UP FUNCTION

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ROAD TEST

[CVT: RE0F09B]

< BASIC INSPECTION >

During manual mode driving, is upshift from M1 → M2 → M3 → M4 → M5 → M6 performed?

Is upshifting correctly performed?

YES >> GO TO 5.

NO >> Refer to [TM-152. "Symptom Table"](#). GO TO 5.

5. CHECK SHIFT DOWN FUNCTION

During manual mode driving, is downshift from M6 → M5 → M4 → M3 → M2 → M1 performed?

Is downshifting correctly performed?

YES >> GO TO 6.

NO >> Refer to [TM-152. "Symptom Table"](#). GO TO 6.

6. CHECK ENGINE BRAKE FUNCTION

Check engine brake.

Does engine braking effectively reduce vehicle speed in "M1" position?

YES >> 1. Stop the vehicle.

2. Perform "Self Diagnostic Results" in "TRANSMISSION".

NO >> Refer to [TM-152. "Symptom Table"](#). Then continue trouble diagnosis.

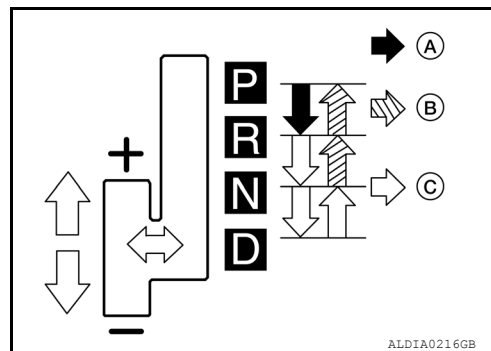
CVT POSITION

Inspection and Adjustment

INFOID:000000008180393

INSPECTION

1. Move CVT shift selector to "P" position, and turn ignition switch ON (engine stop).
 2. Check that CVT shift selector can be moved from "P" position when brake pedal is depressed. Also check that CVT shift selector can be moved from "P" position only when brake pedal is depressed.
 3. Move CVT shift selector and check for excessive effort, sticking, noise or rattle.
 4. Check that CVT shift selector stops at each position with the feel of engagement when it is moved through all the positions. Check that the actual position of CVT shift selector matches the position shown by shift position indicator and manual lever on the transaxle.
 5. The method of operating CVT shift selector to individual positions correctly should be as shown.
 - (A): Press shift selector handle button to operate CVT shift selector, while depressing the brake pedal.
 - (B): Press shift selector handle button to operate CVT shift selector.
 - (C): CVT shift selector can be operated without pressing shift selector handle button.
 6. When shift selector handle button is pressed in "P", "R", "N" or "D" position without applying forward/backward force to CVT shift selector, check shift selector handle button operation for sticking.
 7. Check that back-up lamps illuminate only when CVT shift selector is placed in the "R" position.
 8. Check that back-up lamps do not illuminate when CVT shift selector is pushed toward the "R" position when in the "P" or "N" position.
- CAUTION:**
Check the lighting without pressing shift button.
9. Check that the engine can only be started with CVT shift selector in the "P" and "N" positions.
 10. Check that transaxle is locked completely when CVT shift selector is in "P" position.
 11. Check the operation of manual mode.
 1. When CVT shift selector is set to manual shift gate, make sure manual mode is displayed on combination meter.
 2. Shift CVT shift selector to "+" and "-" sides, and make sure set shift position changes.



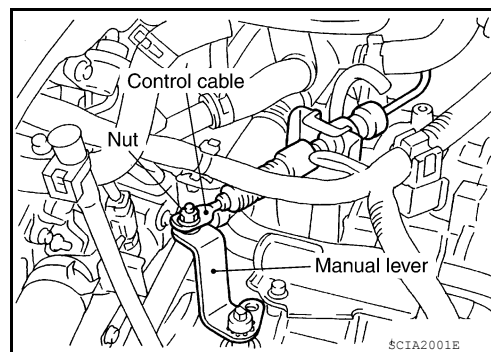
ADJUSTMENT

1. Apply the parking brake.

CAUTION:
Make sure the vehicle cannot move with the parking brake applied.
2. Loosen the control cable nut and place the manual lever in "P" position.
3. Place the CVT shift selector in "P" position.
4. Adjust control cable as follows.
 - From the transmission end push the control cable in with a load of 9.8 N (approximately 1 kg, 2.2 lb).
 - Release the cable and temporarily tighten the control cable nut.

NOTE:
Do not move the manual lever. Make sure the manual lever stays in the "P" position.
5. Tighten the control cable nut to specified torque. Refer to [TM-175, "Exploded View"](#).

CAUTION:
Secure manual lever when tightening nut.



CVT POSITION

< BASIC INSPECTION >

[CVT: RE0F09B]

6. Check the operation of the CVT.

U0100 LOST COMMUNICATION (ECM A)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

DTC/CIRCUIT DIAGNOSIS

U0100 LOST COMMUNICATION (ECM A)

Description

INFOID:000000008327544

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

DTC Logic

INFOID:000000008327545

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible causes
U0100	Lost Communication With ECM/PCM A	When the ignition switch is ON, TCM is unable to receive the CAN communications signal from ECM continuously for 2 seconds or more.	<ul style="list-style-type: none">ECMHarness or connector (CAN communication line is open or shorted)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE WORK

If another "DTC CONFIRMATION PROCEDURE" occurs just before, turn ignition switch OFF and wait for at least 10 seconds, then perform the next test.

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Start the engine and wait for at least 5 seconds.
2. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "U0100" detected?

- YES >> Go to [TM-87, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008327546

For the diagnosis procedure, refer to [LAN-22, "Trouble Diagnosis Flow Chart"](#).

U1000 CAN COMM CIRCUIT

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

U1000 CAN COMM CIRCUIT

Description

INFOID:000000007883010

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

DTC Logic

INFOID:000000007883011

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detected condition	Possible cause
U1000	CAN Communication Line	When TCM is not transmitting or receiving CAN communication signal for 2 seconds or more.	Harness or connectors (CAN communication line is open or shorted.)

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Turn ignition switch ON.
2. Start engine and wait at least 5 seconds.
3. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "U1000" detected?

- YES >> Go to [TM-88, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883012

Go to [LAN-22, "Trouble Diagnosis Flow Chart"](#).

U1010 CONTROL UNIT (CAN)

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

U1010 CONTROL UNIT (CAN)

DTC Logic

INFOID:000000008180410

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detected condition	Possible cause
U1010	TCM Communication Malfunction	When detecting error during the initial diagnosis of CAN controller to TCM	TCM

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Maintain the idling conditions for 6 seconds or more.
3. Check DTC.

Is "U1010" detected?

- YES >> Go to [TM-89, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008180411

1. CHECK INTERMITTENT INCIDENT

Refer to [GI-53, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace the TCM. Refer to [TM-169, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

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P0615 STARTER RELAY

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0615 STARTER RELAY

DTC Logic

INFOID:000000007883014

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detected condition	Possible cause
P0615	Starter Relay Circuit	The starter relay monitor value is OFF when the starter relay command value is ON.	<ul style="list-style-type: none"> • Harness or connectors (Starter relay circuit is open or shorted.) • Starter relay • IPDM E/R
		The starter relay monitor value is ON when the starter relay command value is OFF.	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Turn ignition switch ON.
2. Shift the selector lever to "P" or "N" position and wait at least 10 seconds.
3. Check DTC.

Is "P0615" detected?

- YES >> Go to [TM-90, "Diagnosis Procedure"](#).
 NO >> INSPECTION END.

Diagnosis Procedure

INFOID:000000007883015

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK STARTER RELAY SIGNAL

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Turn ignition switch ON.
4. Check voltage between IPDM E/R harness connector terminal and ground.

+		-	Condition	Voltage (Approx.)
IPDM E/R				
Connector	Terminal			
F24	66	Ground	Selector lever in "P" and "N" positions	10 – 16 V
			Selector lever in other positions	0 V

Is the inspection result normal?

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

2. CHECK HARNESS BETWEEN TCM AND IPDM E/R

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check continuity between TCM harness connector terminal and IPDM E/R harness connector terminal.

P0615 STARTER RELAY

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

TCM		IPDM E/R		Continuity
Connector	Terminal	Connector	Terminal	
F15	20	F24	66	Existed

4. Check continuity between TCM harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F15	20	Ground	Not existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

NO >> Repair or replace damaged parts.

3. DETECT MALFUNCTIONING ITEM

Check the following items:

- Harness for open between IPDM E/R and BCM. Refer to [STR-6, "Wiring Diagram"](#).
- IPDM E/R
- BCM

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

NO >> Repair or replace damaged parts.

A
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P0703 BRAKE SWITCH B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0703 BRAKE SWITCH B

DTC Logic

INFOID:000000007883017

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detected condition	Possible cause
P0703	Brake Switch "B" Circuit	TCM detects malfunction in two continuous DCs in CAN communication with BCM When below diagnosis condition is met, if ON/OFF of stop lamp switch signal does not switch in two continuous DCs, the DTC is detected at succeeding ignition switch ON • Diagnosis Condition - Vehicle speed is kept 30km/h (19 MPH) or more for 10 seconds	<ul style="list-style-type: none">• Harness or connectors- (Stop lamp switch circuit is open or shorted.)- (CAN communication line is open or shorted.)• Stop lamp switch• BCM

NOTE:

DC stands for "DRIVING CYCLE" and indicates a series of driving cycle of "Ignition switch OFF → ON → driving → OFF".

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following conditions for 10 seconds or more.

Vehicle speed : 30 km/h (19 MPH) or more

4. Depress the brake pedal.
5. Stop the vehicle.
6. Turn ignition switch OFF.
7. Repeat step 1 to 6.
8. Turn ignition switch ON.
9. Check DTC.

Is "P0703" detected?

- YES >> Go to [TM-92, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883018

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK BCM INPUT SIGNAL

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check voltage between BCM harness connector terminal and ground.

P0703 BRAKE SWITCH B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

+		-	Condition	Voltage (Approx.)
BCM				
Connector	Terminal			
M18	27	Ground	Depress brake pedal	Battery voltage
			Released brake pedal	0 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 2.

2. CHECK POWER CIRCUIT

1. Disconnect stop lamp switch connector.
2. Check voltage between stop lamp switch harness connector terminal and ground.

+		-	Voltage
Stop lamp switch			
Connector	Terminal		
E38	1	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 6.

3. CHECK CIRCUIT BETWEEN STOP LAMP SWITCH AND BCM

1. Check continuity between stop lamp switch harness connector terminal and BCM harness connector terminal.

Stop lamp switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E38	2	M18	27	Existed

2. Check continuity between stop lamp switch harness connector terminal and ground.

Stop lamp switch		-	Continuity
Connector	Terminal		
E38	2	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK STOP LAMP SWITCH MOUNTING POSITION

Check stop lamp switch mounting position. Refer to [BR-15. "Adjustment"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Adjust stop lamp switch mounting position.

5. CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to [TM-94. "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).

NO >> Replace stop lamp switch.

6. CHECK CIRCUIT BETWEEN STOP LAMP SWITCH AND FUSE BLOCK (J/B)

1. Turn ignition switch OFF.

P0703 BRAKE SWITCH B

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

2. Disconnect fuse block (J/B) connector.
3. Check continuity between fuse block (J/B) harness connector terminal and stop lamp switch harness connector terminal.

Fuse block (J/B)		Stop lamp switch		Continuity
Connector	Terminal	Connector	Terminal	
E28	5M	E38	1	Existed

4. Check continuity between fuse block (J/B) harness connector terminal and ground.

Fuse block (J/B)		—	Continuity
Connector	Terminal		
E28	5M	Ground	Not existed

Is the inspection result normal?

- YES >> GO TO 7.
 NO >> Repair or replace damaged parts.

7. DETECT MALFUNCTIONING ITEM

Check the following item:

- Harness for short or open between battery and fuse block (J/B).
- 10A fuse [#10, located in fuse block (J/B)]
- Fuse block (J/B)

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
 NO >> Repair or replace damaged parts.

8. CHECK BCM

With CONSULT

1. Connect all of disconnected connectors.
2. Turn ignition switch ON.
3. Select "Data Monitor" in "BCM".
4. Select "BRAKE SW 1".
5. Check that "BRAKE SW 1" turns ON/OFF when brake pedal is depressed/released. Refer to [BCS-27, "Reference Value"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
 NO >> Replace BCM.

Component Inspection (Stop Lamp Switch)

INFOID:000000007883019

1. CHECK STOP LAMP SWITCH

Check continuity between stop lamp switch connector terminals.

Stop lamp switch	Condition	Continuity
Terminal		
1 - 2	Depressed brake pedal	Existed
	Released brake pedal	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Replace stop lamp switch. Refer to [BR-20, "Exploded View"](#).

P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0705 TRANSMISSION RANGE SWITCH A

DTC Logic

INFOID:000000007883021

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detected condition	Possible cause
P0705	Transmission Range Sensor "A" Circuit (PRNDL Input)	When below diagnosis conditions are met, two or more range signals are kept ON simultaneously for 2 seconds or more <ul style="list-style-type: none"> • Diagnosis Conditions - Vehicle speed: 11 km/h (7 MPH) or more - Accelerator pedal position: 1.1/8 or more - Engine speed: 450 rpm or more 	<ul style="list-style-type: none"> • Harness or connectors (Transmission range switches circuit is open or shorted.) • Transmission range switch
		When below diagnosis conditions are met, transmission range switch 3 monitoring value is kept OFF for 2 seconds or more <ul style="list-style-type: none"> • Diagnosis Conditions - Vehicle speed: 11 km/h (7 MPH) or more - Accelerator pedal position: 1.1/8 or more - Engine speed: 450 rpm or more - Transmission range switch 3: ON 	
		When below diagnosis conditions are met, transmission range switch 3 monitoring value is kept ON for 2 seconds or more <ul style="list-style-type: none"> • Diagnosis Conditions - Vehicle speed: 11 km/h (7 MPH) or more - Accelerator pedal position: 1.1/8 or more - Engine speed: 450 rpm or more - Transmission range switch 3: OFF 	

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

Ⓟ With CONSULT

1. Turn ignition switch ON.
2. Select "Data Monitor" in "TRANSMISSION".
3. Start the engine.
4. Shift the selector lever to "D" position.
5. Drive vehicle and maintain the following conditions for 2 seconds or more.

VEHICLE SPEED : 11 km/h (7 MPH) or more
 ENG SPEED SIG : 450 rpm
 ACCEL POSI SEN 1 : 1.1/8 or more

6. Stop the vehicle.
7. Shift the selector lever to "R" position.
8. Drive vehicle and maintain the following conditions for 2 seconds or more.

VEHICLE SPEED : 11 km/h (7 MPH) or more
 ENG SPEED SIG : 450 rpm
 ACCEL POSI SEN 1 : 1.1/8 or more

P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

With GST

Follow the procedure "With CONSULT".

Is "P0705" detected?

- YES >> Go to [TM-96. "Diagnosis Procedure"](#).
- NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883022

Regarding Wiring Diagram information, refer to [TM-57. "Wiring Diagram"](#).

1. ADJUST CVT POSITION

Adjust CVT position. Refer to [TM-85. "Inspection and Adjustment"](#)

>> GO TO 2.

2. CHECK TRANSMISSION RANGE SWITCH SIGNAL

1. Turn ignition switch OFF.
2. Disconnect the TCM connector.
3. Check continuity between TCM harness connector terminals and ground.

TCM		—	Condition	Continuity
Connector	Terminal			
15	1	Ground	Selector lever: N and D position	Existed
			Other than above	Not existed
	2		Selector lever: D position	Existed
			Other than above	Not existed
	3		Selector lever: R and D position	Existed
			Other than above	Not existed
	4		Selector lever: D position	Existed
			Other than above	Not existed
11	Selector lever: R, N, and D position	Existed		
	Other than above	Not existed		

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).
- NO >> GO TO 3.

3. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Disconnect CVT unit connector.
2. Check continuity between TCM harness connector terminals and CVT unit harness connector terminals.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	1	F46	5	Existed
	2		14	
	3		15	
	4		18	
	11		4	

3. Check continuity between TCM harness connector terminals and ground.

P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

TCM		—	Continuity
Connector	Terminal		
F15	1	Ground	Not existed
	2		
	3		
	4		
	11		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damage parts.

4. CHECK TRANSMISSION RANGE SWITCH

Check transmission range switch. Refer to [TM-97, "Component Inspection \(Transmission Range Switch\)"](#).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

NO >> Replace transaxle assembly due to malfunction in transmission range switch. Refer to [TM-185, "Removal and Installation"](#).

Component Inspection (Transmission Range Switch)

INFOID:000000008312623

1. CHECK TRANSMISSION RANGE SWITCH

Check continuity of transmission range switch by changing selector lever to various positions and checking continuity between CVT unit terminals and ground.

CVT unit Terminal	—	Condition	Continuity
4, 5, 14, 15, 18	Ground	Selector lever: P position	Not existed
4, 15		Selector lever: R position	Existed
5, 14, 18			Not existed
4, 5		Selector lever: N position	Existed
14, 15, 18			Not existed
4, 5, 14, 15, 18		Selector lever: D position	Existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly due to malfunction in transmission range switch. Refer to [TM-185, "Removal and Installation"](#).

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

DTC Logic

INFOID:000000007883025

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detected condition	Possible cause
P0710	Transmission Fluid Temperature Sensor "A" Circuit	CVT fluid temperature recognized by TCM keeps above 180°C (356°F) for 5 seconds or more	<ul style="list-style-type: none"> • Harness or connectors (Sensor circuit is open or shorted.) • CVT fluid temperature sensor
		When below diagnosis conditions are met, CVT fluid temperature recognized by TCM keeps below -40°C (-40°F) for 5 seconds or more <ul style="list-style-type: none"> • Diagnosis Condition - Vehicle speed: 11 km/h (7 MPH) or more 	
		When below diagnosis functions are met, either of detection conditions A, B, or C is met <ul style="list-style-type: none"> • Diagnosis Conditions - Selector lever: "D" position - Vehicle speed: 11 km/h (7 MPH) or more - Engine speed: 450 rpm or more • Detected Condition A When CVT fluid temperature is under -20°C (-4°F), it takes 14 minutes or more to have 1°C (34°F) rise • Detected Condition B When CVT fluid temperature is between -19°C (-2°F) and 0°C (32°F), it takes 7 minutes or more to have 1°C (34°F) rise • Detected Condition C When CVT fluid temperature is between 1°C (34°F) and 20°C (68°F), it takes 4 minutes or more to have 1°C (34°F) rise 	

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Maintain the following condition for 14 minutes or more.

Selector lever : "D" position

Vehicle speed : 11 km/h (7 MPH) or more

3. Stop the vehicle.
4. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P0710" detected?

YES >> Go to [TM-99, "Diagnosis Procedure"](#).

NO >> INSPECTION END

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Diagnosis Procedure

INFOID:000000007883026

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK CVT FLUID TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check CVT fluid temperature sensor. Refer to [TM-99, "Component Inspection \(CVT Fluid Temperature Sensor\)"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace transaxle assembly due to malfunction in CVT fluid temperature sensor. Refer to [TM-185, "Removal and Installation"](#).

2. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT (CVT FLUID TEMPERATURE SENSOR)

1. Disconnect TCM connector.
2. Check continuity between TCM harness connector terminals and CVT unit harness connector terminals.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	13	F46	17	Existed
	25		19	

3. Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F15	13	Ground	Existed
	25		

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

NO >> Repair or replace damaged parts.

Component Inspection (CVT Fluid Temperature Sensor)

INFOID:000000008313122

1. CHECK CVT FLUID TEMPERATURE SENSOR (PART 1)

Check resistance between CVT unit connector terminals.

CVT unit Terminal	Condition	Resistance (Approx.)
17 – 19	When CVT fluid temperature is 20°C (68°F)	6.29 – 6.83 kΩ
	When CVT fluid temperature is 80°C (176°F)	2.10 – 2.25 kΩ

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace transaxle assembly due to malfunction in CVT fluid temperature sensor. Refer to [TM-185, "Removal and Installation"](#).

2. CHECK CVT FLUID TEMPERATURE SENSOR (PART 2)

Check continuity between CVT unit connector terminal and ground.

CVT unit Terminal	—	Continuity
17	Ground	Not existed

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly due to malfunction in CVT fluid temperature sensor. Refer to [TM-185. "Removal and Installation"](#).

P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0715 INPUT SPEED SENSOR A

DTC Logic

INFOID:000000007883029

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0715	Input/Turbine Speed Sensor "A" Circuit	<p>When below diagnosis conditions are met, primary speed sensor value is kept less than 150 rpm for 5 seconds or more</p> <ul style="list-style-type: none"> • Diagnosis Conditions - Selector lever: "D" position - Vehicle speed: 11 km/h (7 MPH) or more - Accelerator pedal position: 1.1/8 or more - Engine speed: 450 rpm or more - Secondary speed: More than 500 rpm <p>When below diagnosis conditions are met, and primary speed sensor value is 1,000 rpm or more, signal input from primary speed sensor is suddenly stopped and that status is kept for 0.1 second or more</p> <ul style="list-style-type: none"> • Diagnosis Conditions - Selector lever: "D" position - Vehicle speed: 11 km/h (7 MPH) or more - Accelerator pedal position: 1.1/8 or more - Engine speed: 450 rpm or more 	<ul style="list-style-type: none"> • Harness or connectors (Primary speed sensor circuit is open or shorted.) • Primary speed sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following conditions for 5 seconds or more.

Selector lever : "D" position
 Vehicle speed : 40 km/h (25 MPH) or more
 Accelerator pedal position : 1.1/8 or more

With GST

Follow the procedure "With CONSULT".

Is "P0715" detected?

- YES >> Go to [TM-101, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883030

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK TCM INPUT SIGNAL

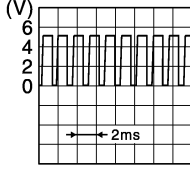
1. Turn ignition switch OFF.
2. Lift the vehicle.
3. Start the vehicle.

P0715 INPUT SPEED SENSOR A

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

4. Check frequency of primary speed sensor.

+		-	Condition	Standard value (Approx.)
TCM				
Connector	Terminal			
F15	33	Ground	<ul style="list-style-type: none"> Selector lever: "M1" position Vehicle speed: 20 km/h (12 MPH) 	640 Hz 

JPDIA0877Z

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).
 NO >> GO TO 2.

2. CHECK POWER SUPPLY AND SENSOR GROUND

- Turn ignition switch OFF.
- Check voltage between TCM connector terminals.

Connector	TCM		Condition	Voltage (Approx.)
	+	-		
	Terminal			
F15	25	26	Ignition switch ON	5.0 V
			Ignition switch OFF	0 V

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Go to [TM-132. "Diagnosis Procedure"](#).

3. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

- Turn ignition switch OFF.
- Disconnect TCM connector.
- Disconnect CVT unit connector.
- Check continuity between TCM harness connector terminals and CVT unit harness connector terminal.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	25	F46	19	Existed
	26		20	
	33		22	

5. Check continuity between primary speed sensor harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F15	25	Ground	Not existed
	26		
	33		

Is the inspection result normal?

- YES >> Replace the transaxle assembly due to malfunction in the primary speed sensor. Refer to [TM-185. "Removal and Installation"](#).
 NO >> Repair or replace damaged parts.

P0720 OUTPUT SPEED SENSOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P0720 OUTPUT SPEED SENSOR

DTC Logic

INFOID:000000007883032

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0720	Output Speed Sensor Circuit	When below diagnosis conditions are met, secondary speed sensor value is kept less than 150 rpm for 5 seconds or more <ul style="list-style-type: none">• Diagnosis Conditions- Selector lever: "D" position- Accelerator pedal position: 1.1/8 or more- Primary speed: More than 1,000 rpm	<ul style="list-style-type: none">• Harness or connectors (Secondary speed sensor circuit is open or shorted.)• Secondary speed sensor
		When below diagnosis conditions are met, the signal from secondary speed sensor is not input for 0.1 second or more <ul style="list-style-type: none">• Diagnosis Conditions- Selector lever: "D" position- Vehicle speed: 11 km/h (7 MPH) or more- Accelerator pedal position: 1.1/8 or more	

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following conditions for 5 seconds or more.

Selector lever	:	"D" position
Vehicle speed	:	40 km/h (25 MPH) or more
Accelerator pedal position	:	1.1/8 or more

With GST

Follow the procedure "With CONSULT".

Is "P0720" detected?

- YES >> Go to [TM-103. "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883033

Regarding Wiring Diagram information, refer to [TM-57. "Wiring Diagram"](#).

1. CHECK SECONDARY SPEED SENSOR POWER CIRCUIT (PART 1)

1. Turn ignition switch OFF.
2. Disconnect secondary speed sensor connector.
3. Turn ignition switch ON.
4. Check voltage between secondary speed sensor harness connector terminals.

P0720 OUTPUT SPEED SENSOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

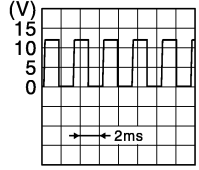
Secondary speed sensor			Voltage (Approx.)
Connector	+	-	
	Terminal		
F23	3	1	10 – 16 V

Is the inspection result normal?

- YES >> GO TO 2.
NO >> GO TO 4.

2. CHECK TCM INPUT SIGNAL

1. Turn ignition switch OFF.
2. Connect secondary speed sensor connector.
3. Lift the vehicle.
4. Start the vehicle.
5. Check frequency of secondary speed sensor.

TCM			Condition	Standard value (Approx.)
Connector	+	-		
	Terminal			
F23	34	7	<ul style="list-style-type: none"> • Selector lever: "D" position • Vehicle speed: 20 km/h (12 MPH) 	<p>350 Hz</p>  <p>JPDIA0878ZZ</p>

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
NO >> GO TO 3.

3. CHECK CIRCUIT BETWEEN TCM AND SECONDARY SPEED SENSOR

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Disconnect secondary speed sensor connector.
4. Check continuity between TCM harness connector terminals and secondary speed sensor harness connector terminals.

TCM		Secondary speed sensor		Continuity
Connector	Terminal	Connector	Terminal	
F15	34	F23	2	Existed

5. Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F15	34	Ground	Not existed

Is the inspection result normal?

- YES >> Replace secondary speed sensor. Refer to [TM-179, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

4. CHECK SECONDARY SPEED SENSOR POWER CIRCUIT (PART 2)

Check voltage between secondary speed sensor harness connector terminal and ground.

P0720 OUTPUT SPEED SENSOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

Secondary speed sensor		—	Voltage (Approx.)
Connector	Terminal		
F23	3	Ground	10 – 16 V

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> GO TO 5.

5. CHECK CIRCUIT BETWEEN SECONDARY SPEED SENSOR AND IPDM E/R

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector.
3. Check continuity between IPDM E/R harness connector terminals and secondary speed sensor harness connector terminal.

IPDM E/R		Secondary speed sensor		Continuity
Connector	Terminal	Connector	Terminal	
F19	61	F15	3	Existed

4. Check continuity between IPDM E/R harness connector terminals and ground.

IPDM E/R		—	Continuity
Connector	Terminal		
F19	61	Ground	Not existed

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Repair or replace damaged parts.

6. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Harness for short or open between ignition switch and IPDM E/R.
- 10A fuse (# 46, located in IPDM E/R)
- IPDM E/R
- Ignition switch

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
- NO >> Repair or replace damaged parts.

7. CHECK SECONDARY SPEED SENSOR GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check continuity between secondary speed sensor harness connector terminal and TCM harness connector terminal.

Secondary speed sensor		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F15	1	F25	7	Existed

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
- NO >> Repair or replace damaged parts.

P0725 ENGINE SPEED

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P0725 ENGINE SPEED

Description

INFOID:000000007883034

The engine speed signal is transmitted from ECM to TCM via CAN communication line.

DTC Logic

INFOID:000000007883035

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0725	Engine Speed Input Circuit	TCM detects malfunction in CAN communication with ECM	<ul style="list-style-type: none"> • Harness or connectors (CAN communication line is open or shorted.) • ECM
		When below diagnosis conditions are met, engine speed received from ECM becomes less than 250 rpm <ul style="list-style-type: none"> • Diagnosis Condition - Primary speed: 1,000 rpm or more 	

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "PRI SPEED".
4. Drive the vehicle.
5. Maintain the following conditions for 10 seconds or more.

PRI SPEED : 1,000 rpm or more

6. Stop the vehicle.
7. Check DTC.

Is "P0725" detected?

- YES >> Go to [TM-106, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883036

1. CHECK DTC WITH ECM

With CONSULT

1. Turn ignition switch ON.
2. Perform "Self Diagnostic Results" in "ENGINE".

Is any DTC detected?

- YES >> Check DTC detected item. Refer to [EC-108, "DTC Index"](#).
 NO >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

P0740 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0740 TORQUE CONVERTER

DTC Logic

INFOID:000000007883041

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0740	Torque Converter Clutch Circuit/Open	<p>Torque converter clutch solenoid valve monitor voltage value of TCM keeps less than 70 % of command voltage for 1 second or more</p> <p>When below diagnosis conditions are met, torque converter clutch solenoid valve monitor current value of TCM keeps less than 400 mA for 5 seconds or more</p> <ul style="list-style-type: none">• Diagnosis Condition- Torque converter clutch solenoid valve command current value: 750 mA or more	<ul style="list-style-type: none">• Harness or connectors (Torque converter clutch solenoid valve circuit is open or shorted.)• Torque converter clutch solenoid valve

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Warm up the engine. [Set the CVT fluid to 10°C (50°F) or more.]

NOTE:

When the ambient temperature is 20°C (68°F), the CVT fluid usually increases to 50 to 80°C (122 to 176°F) with driving in an urban area for approximately 10 minutes.

3. Drive the vehicle.
4. Maintain the following conditions for 10 seconds or more.

Selector lever : "D" position
Vehicle speed : 40 km/h (25 MPH) or more

5. Stop the vehicle.
6. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P0740" detected?

YES >> Go to [TM-107, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883042

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check torque converter clutch solenoid valve. Refer to [TM-108, "Component Inspection \(Torque Converter Clutch Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 2.

P0740 TORQUE CONVERTER

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace transaxle assembly due to malfunction in torque converter clutch solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

2. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Disconnect TCM connector.
2. Check continuity between TCM harness connector terminal and CVT unit harness connector terminal.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	38	F46	12	Existed

3. Check continuity between TCM harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F15	38	Ground	Not existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
 NO >> Repair or replace damaged parts.

Component Inspection (Torque Converter Clutch Solenoid Valve)

INFOID:000000007883043

1. CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
12	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

YES >> INSPECTION END
 NO >> Replace transaxle assembly due to malfunction in torque converter clutch solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

P0744 TORQUE CONVERTER

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P0744 TORQUE CONVERTER

Description

INFOID:000000007883044

This malfunction is detected when the torque converter clutch does not lock-up as instructed by the TCM. This is not only caused by electrical malfunctions (circuits open or shorted), but also by mechanical malfunctions such as control valve sticking, improper solenoid valve operation, etc.

DTC Logic

INFOID:000000007883045

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0744	Torque Converter Clutch Circuit Intermittent	When below diagnosis conditions are met, torque converter slip speed keeps above the defined value (40 rpm + vehicle speed/2) for 30 seconds or more • Diagnosis Conditions - Selector lever: "D" position - Vehicle speed: 11 km/h (7 MPH) or more - Accelerator pedal position: 1.1/8 or more - Engine speed: 450 rpm or more - CVT fluid temperature: 20°C – 180°C (68°F – 356°F) - LU command pressure: More than 0.2 MPa	<ul style="list-style-type: none">• Torque converter clutch solenoid valve• Lock-up select solenoid valve• Hydraulic control circuit• Torque converter

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Warm up the engine. [Set the CVT fluid to 20°C (68°F) or more.]

NOTE:

When the ambient temperature is 20°C (68°F), the CVT fluid usually increases to 50 to 80°C (122 to 176°F) with driving in an urban area for approximately 10 minutes.

3. Maintain the following condition for at least 30 seconds.

Selector lever	: "D" position
Accelerator pedal position	: 1.1/8 or more
Vehicle speed	: 25 km/h (16 MPH) or more

With GST

Follow the procedure "With CONSULT".

Is "P0744" detected?

- YES >> Go to [TM-109, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883046

1. CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-80, "Work Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 2.

P0744 TORQUE CONVERTER

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Repair or replace damaged parts.

2. CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

Check torque converter clutch solenoid valve. Refer to [TM-107, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK LOCK-UP SELECT SOLENOID VALVE

Check lock-up select solenoid valve. Refer to [TM-141, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-103, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-101, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK DTC

With CONSULT

1. Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-55, "DTC Index"](#).

2. Check DTC.

Is "P0744" displayed?

YES >> Replace transaxle assembly. Refer to [TM-185, "Removal and Installation"](#).

NO >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

P0745 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0745 PRESSURE CONTROL SOLENOID A

DTC Logic

INFOID:000000007883050

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0745	Pressure Control Solenoid "A"	Line pressure solenoid valve monitor voltage value of TCM keeps less than 70% of command voltage for 1 second or more When below diagnosis conditions are met, line pressure solenoid valve monitor current value of TCM keeps less than 400 mA for 5 seconds or more • Diagnosis Condition - Line pressure solenoid valve command current value: 750 mA or more	<ul style="list-style-type: none">• Harness or connectors (Line pressure solenoid valve circuit is open or shorted.)• Line pressure solenoid valve

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle at least for 10 seconds.
3. Stop the vehicle.
4. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P0745" detected?

YES >> Go to [TM-111. "Diagnosis Procedure"](#).

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883051

Regarding Wiring Diagram information, refer to [TM-57. "Wiring Diagram"](#).

1. CHECK LINE PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check line pressure solenoid valve. Refer to [TM-112. "Component Inspection \(Line Pressure Solenoid Valve\)"](#)

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace transaxle assembly due to malfunction in line pressure solenoid valve. Refer to [TM-185. "Removal and Installation"](#).

2. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Disconnect TCM connector.
2. Check continuity between TCM harness connector terminal and CVT unit harness connector terminal.

P0745 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	40	F46	2	Existed

3. Check continuity between TCM harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F15	40	Ground	Not existed

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).
NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000007883052

1. CHECK LINE PRESSURE SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
2	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace transaxle assembly due to malfunction in line pressure solenoid valve. Refer to [TM-185. "Removal and Installation"](#).

P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0746 PRESSURE CONTROL SOLENOID A

Description

INFOID:000000007883053

- When line pressure solenoid valve is under electrically normal condition, if unusual gear change ratio at LOW side is detected due to low line pressure, it is judged as malfunction.
- This DTC is not caused by electrical malfunction (circuit is open or shorted), but caused by mechanical malfunction (control valve clogging, solenoid valve sticking, etc.).

DTC Logic

INFOID:000000007883054

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0746	Pressure Control Solenoid "A" Performance/Stuck Off	<p>When below diagnosis conditions are met, either of detection conditions A, B, or C is met</p> <ul style="list-style-type: none">• Diagnosis Conditions<ul style="list-style-type: none">- Selector lever: "D" position- Vehicle speed: 11 km/h (7 MPH) or more- Accelerator pedal position: 1.1/8 or more- Engine speed: More than 600 rpm- Primary speed: More than 500 rpm- CVT fluid temperature: 20°C – 180°C (68°F – 356°F)• Detected Condition A<ul style="list-style-type: none">- The gear ratio of primary speed/secondary speed exceeds 2.7 and keeps the status for 0.2 seconds or more• Detected Condition B<ul style="list-style-type: none">- The gear ratio of primary speed/secondary speed exceeds 3.5 and keeps the status for 0.1 seconds or more	<ul style="list-style-type: none">• Line pressure control system• Line pressure solenoid valve• Secondary speed sensor• Primary speed sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Warm up the engine. [Set the CVT fluid to 20°C (68°F) or more.]

NOTE:

When the ambient temperature is 20°C (68°F), the CVT fluid usually increases to 50 to 80°C (122 to 176°F) with driving in an urban area for approximately 10 minutes.

3. Drive the vehicle.
4. Maintain the following conditions for 1 second or more.

Selector lever	: "D" position
Vehicle speed	: 40 km/h (25 MPH) or more
Accelerator pedal position	: 1.1/8 or more

5. Stop the vehicle.
6. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P0746" detected?

- YES >> Go to [TM-114, "Diagnosis Procedure"](#).
- NO >> INSPECTION END

P0746 PRESSURE CONTROL SOLENOID A

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

INFOID:000000007883055

Diagnosis Procedure

1. CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-80, "Work Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace damaged parts.

2. CHECK LINE PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check line pressure solenoid valve. Refer to [TM-114, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Replace transaxle assembly. Refer to [TM-184, "Exploded View"](#).

3. CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-103, "DTC Logic"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace damaged parts.

4. CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-101, "DTC Logic"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Repair or replace damaged parts.

5. PERFORM INTERMITTENT INCIDENT

Refer to [GI-53, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace transaxle assembly. Refer to [TM-185, "Removal and Installation"](#).
- NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000008319702

1. CHECK LINE PRESSURE SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
2	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace transaxle assembly due to malfunction in line pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0776 PRESSURE CONTROL SOLENOID B

Description

INFOID:000000007883057

- When secondary pressure solenoid valve is under electrically normal condition, the DTC is detected if secondary pressure is low.
- This DTC is not caused by electrical malfunction (circuit is open or shorted), but caused by mechanical malfunction (control valve clogging, solenoid valve sticking, etc.).

DTC Logic

INFOID:000000007883058

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0776	Pressure Control Solenoid "B" Performance/Stuck Off	When below diagnosis conditions are met, the difference between command value and actual value of secondary pressure exceeds 1.2 MPa and keeps for 30 seconds or more <ul style="list-style-type: none"> • Diagnosis Conditions <ul style="list-style-type: none"> - Selector lever: "D" position - Vehicle speed: 11 km/h (7 MPH) or more - Accelerator pedal position: 1.1/8 or more - Engine speed: 450 rpm or more - TCM power supply: More than 10 V - CVT fluid temperature: 20°C – 180°C (68°F – 356°F) 	<ul style="list-style-type: none"> • Secondary pressure sensor • Secondary pressure solenoid valve • Secondary pressure solenoid valve oil passage • Line pressure solenoid valve oil passage

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Warm up the engine. [Set the CVT fluid to 10°C (50°F) or more.]

NOTE:

When the ambient temperature is 20°C (68°F), the CVT fluid usually increases to 50 to 80°C (122 to 176°F) with driving in an urban area for approximately 10 minutes.

3. Drive the vehicle.
4. Maintain the following conditions for 30 seconds or more.

Selector lever	: "D" position
Vehicle speed	: 11 km/h (7 MPH) or more
Accelerator pedal position	: 1.1/8 or more

5. Stop the vehicle.
6. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P0776" detected?

- YES >> Go to [TM-116, "Diagnosis Procedure"](#).
- NO >> INSPECTION END

P0776 PRESSURE CONTROL SOLENOID B

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

INFOID:000000007883059

Diagnosis Procedure

1. CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-80, "Work Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Repair or replace damaged parts.

2. CHECK SECONDARY PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check secondary pressure solenoid valve. Refer to [TM-116, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
- NO >> Replace transaxle assembly due to malfunction in secondary pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

3. CHECK SECONDARY PRESSURE SENSOR SYSTEM

Check secondary pressure sensor system. Refer to [TM-122, "DTC Logic"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace damaged parts.

4. DETECT MALFUNCTIONING ITEMS

Refer to [GI-53, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace transaxle assembly. Refer to [TM-185, "Removal and Installation"](#).
- NO >> Repair or replace damaged parts.

Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000007883061

1. CHECK SECONDARY PRESSURE SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
3	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace transaxle assembly due to malfunction in secondary pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

P0778 PRESSURE CONTROL SOLENOID B

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P0778 PRESSURE CONTROL SOLENOID B

DTC Logic

INFOID:000000007883063

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0778	Pressure Control Solenoid "B" Electrical	Secondary pressure solenoid valve monitor voltage value of TCM keeps less than 70% of command voltage for 1 second or more	<ul style="list-style-type: none">• Harness or connectors (Secondary pressure solenoid valve circuit is open or shorted.)• Secondary pressure solenoid valve
		When below diagnosis conditions are met, secondary pressure solenoid valve monitor current value of TCM keeps less than 400 mA for 5 seconds or more <ul style="list-style-type: none">• Diagnosis Condition<ul style="list-style-type: none">- Secondary pressure solenoid valve command current value: 750 mA or more	

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle at least for 10 seconds.
3. Stop the vehicle.
4. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P0778" detected?

YES >> Go to [TM-117, "Diagnosis Procedure"](#).

NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883064

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK SECONDARY PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check secondary pressure solenoid valve. Refer to [TM-118, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace transaxle assembly due to malfunction in secondary pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

2. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Disconnect TCM connector.
2. Check continuity between TCM harness connector terminal and CVT unit harness connector terminal.

P0778 PRESSURE CONTROL SOLENOID B

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	39	F46	3	Existed

3. Check continuity between TCM harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F15	39	Ground	Not existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000008319703

1. CHECK SECONDARY PRESSURE SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit	—	Condition	Resistance (Approx.)
Terminal			
3	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly due to malfunction in secondary pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0826 UP AND DOWN SHIFT SW

DTC Logic

INFOID:0000000008266996

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible causes
P0826	Up and Down Shift Switch Circuit	TCM monitors manual mode, non-manual mode, up or down switch signal, and detects as irregular when impossible input pattern occurs 1 second or more.	<ul style="list-style-type: none">Manual mode switchHarness or connectors (Manual mode switch circuit are open or shorted.)

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE WORK

If another "DTC CONFIRMATION PROCEDURE" occurs just before, turn ignition switch OFF and wait for at least 10 seconds, then perform the next test.

>> GO TO 2.

2. CHECK DTC DETECTION (PART 1)

With CONSULT

- Start the engine.
- Shift the selector lever to "D" position and wait for 1 second or more.
- Select "Self Diagnostic Results" in "TRANSMISSION".

Is "P0826" detected?

- YES >> Go to [TM-119, "Diagnosis Procedure"](#).
NO >> GO TO 3.

3. CHECK DTC DETECTION (PART 2)

With CONSULT

- Shift the selector lever to manual shift gate and wait for 1 second or more.
- Select "Self Diagnostic Results" in "TRANSMISSION".

Is "P0826" detected?

- YES >> Go to [TM-119, "Diagnosis Procedure"](#).
NO >> GO TO 4.

4. CHECK DTC DETECTION (PART 3)

With CONSULT

- Shift the selector lever to "UP side (+ side)" and wait for 1 second or more.
- Select "Self Diagnostic Results" in "TRANSMISSION".

Is "P0826" detected?

- YES >> Go to [TM-119, "Diagnosis Procedure"](#).
NO >> GO TO 5.

5. CHECK DTC DETECTION (PART 4)

With CONSULT

- Shift the selector lever to "DOWN side (- side)" and wait for 1 second or more.
- Select "Self Diagnostic Results" in "TRANSMISSION".

Is "P0826" detected?

- YES >> Go to [TM-119, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:0000000008266997

1. CHECK DTC (COMBINATION METER)

With CONSULT

P0826 UP AND DOWN SHIFT SW

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch ON.
2. Select "Self Diagnostic Results" in "METER/M&A".

Is any DTC detected?

- YES >> Check DTC detected item. Refer to [MWI-25, "DTC Index"](#).
 NO >> GO TO 2.

2. CHECK MANUAL MODE SWITCH POWER SUPPLY CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector connector.
3. Turn ignition switch ON.
4. Check voltage between CVT shift selector harness connector terminal and ground.

+		-	Condition	Voltage (Approx.)
CVT shift selector				
Connector	Terminal			
M78	7	Ground	Ignition switch: ON	12 V
			Ignition switch: OFF	0 V
	8		Ignition switch: ON	12 V
			Ignition switch: OFF	0 V
	9		Ignition switch: ON	12 V
			Ignition switch: OFF	0 V
	10		Ignition switch: ON	12 V
			Ignition switch: OFF	0 V

Is the inspection result normal?

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

3. CHECK MANUAL MODE SWITCH

1. Turn ignition switch OFF.
2. Check manual mode switch. Refer to [TM-121, "Component Inspection \(Manual Mode Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
 NO >> Repair or replace damaged parts.

4. CHECK CIRCUIT BETWEEN CVT SHIFT SELECTOR AND COMBINATION METER

1. Turn ignition switch OFF.
2. Disconnect combination meter connector.
3. Check continuity between CVT shift selector harness connector terminals and combination meter harness connector terminals.

CVT shift selector		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M78	7	M23	43	Existed
	8		45	
	9		44	
	10		46	

4. Check continuity between CVT shift selector harness connector terminals and ground.

P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

CVT shift selector		—	Continuity
Connector	Terminal		
M78	7	Ground	Not existed
	8		
	9		
	10		

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).
- NO >> Repair or replace damaged parts.

5. CHECK GROUND CIRCUIT

Check continuity between CVT shift selector harness connector terminal and ground.

CVT shift selector		—	Continuity
Connector	Terminal		
M78	4	Ground	Existed

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).
- NO >> Repair or replace damaged parts.

Component Inspection (Manual Mode Switch)

INFOID:0000000008266998

MANUAL MODE SWITCH

1. MANUAL MODE SWITCH

Check continuity between CVT shift selector connector terminals.

CVT shift selector Terminal	Condition	Continuity
7 – 4	Manual shift gate position (neutral)	Existed
	Other than the above	Not existed
8 – 4	Selector lever: DOWN (– side)	Existed
	Other than the above	Not existed
9 – 4	Selector lever: UP (+ side)	Existed
	Other than the above	Not existed
10 – 4	Manual shift gate position	Not existed
	Other than the above	Existed

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace the CVT shift selector assembly due to malfunction in manual mode switch. . Refer to [TM-171. "Removal and Installation"](#).

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

DTC Logic

INFOID:000000007883072

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0840	Transmission Fluid Pressure Sensor/Switch "A" Circuit	When below diagnosis conditions are met, secondary pressure sensor value is kept 4.7 V or more for 5 seconds or more	<ul style="list-style-type: none"> • Harness or connectors (Secondary pressure sensor circuit is open or shorted.) • Secondary pressure sensor
		<ul style="list-style-type: none"> • Diagnosis Conditions - CVT fluid temperature: More than -20°C (-4°F) - Target secondary pressure: 5.7 MPa or less 	
		When below diagnosis conditions are met, secondary pressure sensor value is kept 0.09 V or less for 5 seconds or more	
		<ul style="list-style-type: none"> • Diagnosis Condition - CVT fluid temperature: More than -20°C (-4°F) 	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Warm up the engine. [Set the CVT fluid to -19°C (-4°F) or more.]

NOTE:

When the ambient temperature is 20°C (68°F), the CVT fluid usually increases to 50 to 80°C (122 to 176°F) with driving in an urban area for approximately 10 minutes.

3. Wait for 10 seconds or more.
4. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P0840" detected?

- YES >> Go to [TM-122, "Diagnosis Procedure"](#).
 NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883073

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK TCM INPUT SIGNAL

1. Start the engine.
2. Check voltage between TCM connector terminals.

Connector	TCM		Condition	Voltage (Approx.)
	+	-		
	Terminal			
F15	15	25	<ul style="list-style-type: none"> • Selector lever: "N" position • At idle 	1.0 V

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
 NO >> GO TO 2.

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

2. CHECK POWER AND SENSOR GROUND

1. Turn ignition switch OFF.
2. Check voltage between TCM terminals.

TCM			Condition	Voltage (Approx.)
Connector	+	-		
	Terminal			
F15	26	25	Turn ignition switch ON	5.0 V
			Turn ignition switch OFF	0 V

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Go to [TM-132. "Diagnosis Procedure"](#).

3. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Disconnect CVT unit connector.
4. Check continuity between TCM harness connector terminals and CVT unit harness connector terminals.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	15	F46	23	Existed
	25		19	
	26		20	

5. Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F15	15	Ground	Not existed
	25		
	26		

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace damaged parts.

4. PERFORM INTERMITTENT INCIDENT

Refer to [GI-53. "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace transaxle assembly due to malfunction in secondary pressure sensor. Refer to [TM-185. "Removal and Installation"](#).
 NO >> Repair or replace damaged parts.

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

Description

INFOID:000000007883074

Detects oil sensor function malfunction based on the mutual relation between primary pressure sensor and secondary pressure sensor.

DTC Logic

INFOID:000000007883075

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0841	Transmission Fluid Pressure Sensor/Switch A Circuit Range/Performance	Primary pressure sensor value and secondary pressure sensor value exceed standard range and keep the status for 5 seconds or more	<ul style="list-style-type: none">• Harness or connectors (Secondary pressure sensor circuit is open or shorted.)• Harness or connectors (Primary pressure sensor circuit is open or shorted.)• Secondary pressure sensor• Primary pressure sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following conditions for 5 seconds or more.

Vehicle speed : 30 km/h (17 MPH) or more

4. Stop the vehicle.
5. Check DTC.

Is "P0841" detected?

- YES >> Go to [TM-124, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883076

1. CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-80, "Work Procedure"](#).

Is the inspection result normal?

- YES >> .GO TO 2.
NO >> Repair or replace damaged parts. Refer to [TM-80, "Work Procedure"](#).

2. CHECK SECONDARY PRESSURE SENSOR SYSTEM

Check secondary pressure sensor system. Refer to [TM-116, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Repair or replace damaged parts.

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

3. CHECK PRIMARY PRESSURE SENSOR SYSTEM

Check primary pressure sensor system. Refer to [TM-127, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 4.
- NO >> Repair or replace damaged parts.

4. CHECK LINE PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check line pressure solenoid valve. Refer to [TM-125, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
- NO >> Replace transaxle assembly due to malfunction in line pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

5. CHECK SECONDARY PRESSURE SOLENOID VALVE

Check secondary pressure solenoid valve. Refer to [TM-125, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 6.
- NO >> Replace transaxle assembly due to malfunction in secondary pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

6. CHECK STEP MOTOR SYSTEM

Check step motor system. Refer to [TM-143, "Diagnosis Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 7.
- NO >> Repair or replace damaged parts.

7. CHECK INTERMITTENT INCIDENT

Refer to [GI-53, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace transaxle assembly. Refer to [TM-185, "Removal and Installation"](#).
- NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000008319704

1. CHECK LINE PRESSURE SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
2	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

- YES >> INSPECTION END
- NO >> Replace transaxle assembly due to malfunction in line pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000008319705

1. CHECK SECONDARY PRESSURE SOLENOID VALVE

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
3	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly due to malfunction in secondary pressure solenoid valve. Refer to [TM-185. "Removal and Installation"](#).

P0845 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0845 TRANSMISSION FLUID PRESSURE SEN/SW B

DTC Logic

INFOID:000000007883080

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0845	Transmission Fluid Pressure Sensor/Switch "B" Circuit	When below diagnosis conditions are met, secondary pressure sensor value is kept 4.7 V or more or 0.09 V or less for 5 seconds or more <ul style="list-style-type: none">• Diagnosis Condition- CVT fluid temperature: More than -20°C (-4°F)	<ul style="list-style-type: none">• Harness or connectors (Primary pressure sensor circuit is open or shorted.)• Primary pressure sensor

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Warm up the engine. [Set the CVT fluid to -19°C (-4°F) or more.]

NOTE:

When the ambient temperature is 20°C (68°F), the CVT fluid usually increases to 50 to 80°C (122 to 176°F) with driving in an urban area for approximately 10 minutes.

3. Wait for 5 seconds or more.
4. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P0845" detected?

- YES >> Go to [TM-127, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883081

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK TCM INPUT SIGNAL

1. Start the engine.
2. Check voltage between TCM connector terminals.

Connector	TCM		Condition	Voltage (Approx.)
	+	-		
	Terminal			
F15	14	25	"N" position idle	0.7 – 3.5 V

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
NO >> GO TO 2.

2. CHECK SENSOR POWER AND SENSOR GROUND

1. Turn ignition switch OFF.
2. Check voltage between TCM connector terminals.

P0845 TRANSMISSION FLUID PRESSURE SEN/SW B

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

TCM			Condition	Voltage (Approx.)
Connector	+	-		
	Terminal			
F15	25	26	Ignition switch ON	5.0 V
			Ignition switch OFF	0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Go to [TM-132, "Diagnosis Procedure"](#).

3. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Disconnect CVT unit connector.
4. Check continuity between TCM harness connector terminal and CVT unit harness connector terminal.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	14	F46	25	Existed
	25		19	
	26		20	

5. Check the continuity between TCM harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F15	14	Ground	Not existed
	25		
	26		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4. CHECK INTERMITTENT INCIDENT

Refer to [GI-53, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transaxle assembly due to malfunction in primary pressure sensor. Refer to [TM-185, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

P0868 TRANSMISSION FLUID PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0868 TRANSMISSION FLUID PRESSURE

Description

INFOID:000000007883082

Secondary pressure solenoid valve controls input and output of secondary pressure to secondary pulley according to driving condition, following the command by TCM.

DTC Logic

INFOID:000000007883083

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P0868	Transmission Fluid Pressure Low	<p>When below diagnosis conditions are met, the detection condition is met twice with interval of 30 seconds or more</p> <ul style="list-style-type: none"> • Diagnosis Conditions <ul style="list-style-type: none"> - Accelerator pedal position: 0.5/8 or less - Vehicle speed: 15 km/h (9 MPH) or less - CVT fluid temperature: 22°C – 109°C (72°F – 228°F) - Secondary actual pressure: More than "X"* • Detected Condition <ul style="list-style-type: none"> - The difference between secondary command pressure and secondary actual pressure exceeds 0.25 MPa keeps for 1.5 seconds or more <p>When below diagnosis conditions are met, either of detection conditions A or B is met</p> <ul style="list-style-type: none"> • Diagnosis Conditions <ul style="list-style-type: none"> - Accelerator pedal position: 0.5/8 or more - Vehicle speed: 15 km/h (9 MPH) or more - CVT fluid temperature: 22°C – 109°C (72°F – 228°F) - The difference between secondary command pressure and secondary actual pressure exceeds 0.25 MPa keeps for 1.5 seconds or more • Detected Condition A <ul style="list-style-type: none"> - The difference between secondary command pressure and secondary actual pressure exceeds 2.0 MPa keeps for 1.5 seconds or more • Detected Condition B <ul style="list-style-type: none"> - The difference between "X"* and secondary actual pressure exceeds 2.0 MPa keeps for 1.5 seconds or more 	<ul style="list-style-type: none"> • Harness or connectors (Secondary pressure solenoid valve circuit is open or shorted.) • Secondary pressure solenoid valve system • Secondary pressure sensor • Line pressure control system

*: "X" shows lower limit of oil flow amount from oil pump according to engine speed.

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION (PART 1)

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "RANGE", "ATF TEMP SEN", "ACCEL POSI SEN 1", and "ESTM VSP SIG".
4. Drive the vehicle.
5. Maintain the following conditions for 2 minutes or more.

P0868 TRANSMISSION FLUID PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

RANGE	: D
ATF TEMP SEN	: 2.00 V or less
ACCEL POSI SEN 1	: 0.1/8 – 0.5/8
ESTM VSP SIG	: 10 – 15 km/h (7 – 9 MPH)

6. Stop the vehicle.
7. Check DTC.

Is "P0868" detected?

- YES >> Go to [TM-130, "Diagnosis Procedure"](#).
NO >> GO TO 3.

3.CHECK DTC DETECTION (PART 2)

With CONSULT

1. Select "Data Monitor" in "TRANSMISSION".
2. Select "RANGE", "ATF TEMP SEN", "ACCEL POSI SEN 1", "BRAKESW", and "ESTM VSP SIG".
3. Drive the vehicle.
4. Maintain the following conditions for 30 seconds or more.

RANGE	: D
ATF TEMP SEN	: 2.00 V or less
ACCEL POSI SEN 1	: 0.5/8 – 1.0/8
BRAKESW	: Off
ESTM VSP SIG	: 40 km/h (25 MPH) or more

5. Stop the vehicle.
6. Check DTC.

Is "P0868" detected?

- YES >> Go to [TM-130, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883084

1.CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-80, "Work Procedure"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts.

2.CHECK SECONDARY PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check secondary pressure solenoid valve. Refer to [TM-131, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace transaxle assembly due to malfunction in secondary pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

3.CHECK LINE PRESSURE SOLENOID VALVE

Check line pressure solenoid valve. Refer to [TM-131, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Replace transaxle assembly due to malfunction in line pressure solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

4.CHECK SECONDARY PRESSURE SENSOR SYSTEM

P0868 TRANSMISSION FLUID PRESSURE

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

Check secondary pressure sensor system. Refer to [TM-122. "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK INTERMITTENT INCIDENT

Refer to [GI-53. "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transaxle assembly. Refer to [TM-185. "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000008319708

TM

1. CHECK LINE PRESSURE SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
2	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly due to malfunction in line pressure solenoid valve. Refer to [TM-185. "Removal and Installation"](#).

Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000008319709

1. CHECK SECONDARY PRESSURE SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
3	Ground	CVT fluid temperature: 20°C (68°F)	5.60 – 6.60 Ω
		CVT fluid temperature: 50°C (122°F)	6.76 – 6.87 Ω
		CVT fluid temperature: 80°C (176°F)	7.47 – 7.59 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly due to malfunction in secondary pressure solenoid valve. Refer to [TM-185. "Removal and Installation"](#).

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P1701 TCM

Description

INFOID:000000007883087

When the power supply to the TCM is cut off, for example because the battery is removed, and the self-diagnosis memory function stops, a malfunction is detected.
 Detects malfunction when power source (backup) is not supplied to TCM and learning function is stopped.

CAUTION:

“P1701” can be displayed in self diagnosis result immediately after TCM replacement and after transaxle assembly replacement (after TCM initialization operation). In this case, erase self diagnosis result using CONSULT. After erasing self diagnosis result, perform reproducing operation of “P1701” to confirm that there is no longer malfunction.

DTC Logic

INFOID:000000007883088

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P1701	Power Supply Circuit	Detects malfunction when power source (memory back-up) is not supplied to TCM and learning function is stopped	Harness or connectors (TCM power supply circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If “DTC CONFIRMATION PROCEDURE” has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Maintain the idling conditions for 10 seconds or more.
3. Drive the vehicle for 10 seconds or more.
4. Stop the vehicle.
5. Turn ignition switch OFF.
6. Wait for 10 seconds or more.
7. Start the engine.
8. Check DTC.

Is “P1701” detected?

- YES >> Go to [TM-132, "Diagnosis Procedure"](#).
- NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883089

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK TCM POWER SOURCE (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check voltage between TCM harness connector terminals and ground.

P1701 TCM

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

+		-	Condition	Voltage (Approx.)
TCM				
Connector	Terminal			
F15	46	Ground	Turn ignition switch ON	10 – 16 V
			Turn ignition switch OFF	0 V
	48		Turn ignition switch ON	10 – 16 V
			Turn ignition switch OFF	0 V

Is the inspection result normal?

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

2. CHECK TCM POWER SOURCE (PART 2)

- Turn ignition switch OFF.
- Check voltage between TCM harness connector terminals and ground.

+		-	Condition	Voltage (Approx.)
TCM				
Connector	Terminal			
F15	45	Ground	Always	10 – 16 V

Is the inspection result normal?

- YES >> GO TO 7.
NO >> GO TO 5.

3. CHECK CIRCUIT BETWEEN TCM AND IPDM E/R

- Turn ignition switch OFF.
- Disconnect IPDM E/R connector.
- Check continuity between IPDM E/R harness connector terminals and TCM harness connector terminal.

IPDM E/R		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F19	61	F15	46	Existed
			48	

- Check continuity between IPDM E/R harness connector terminals and ground.

IPDM E/R		—	Continuity
Connector	Terminal		
F19	61	Ground	Not existed

Is the inspection result normal?

- YES >> GO TO 4.
NO >> Repair or replace damaged parts.

4. DETECT MALFUNCTIONING ITEMS

Check the following items.

- IPDM E/R
- 10A fuse (# 46, located in IPDM E/R)
- Harness for short or open between IPDM E/R and ignition switch
- Ignition switch

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
NO >> Repair or replace damaged parts.

< DTC/CIRCUIT DIAGNOSIS >

5. CHECK CIRCUIT BETWEEN TCM AND FUSE BLOCK (J/B)

1. Turn ignition switch OFF.
2. Disconnect fuse block (J/B) connector.
3. Check continuity between fuse block (J/B) harness connector terminals and TCM harness connector terminal.

Fuse block (J/B)		TCM		Continuity
Connector	Terminal	Connector	Terminal	
M3	2N	F15	45	Existed

4. Check continuity between fuse block (J/B) harness connector terminals and ground.

Fuse block (J/B)		—	Continuity
Connector	Terminal		
M3	2N	Ground	Not existed

Is the inspection result normal?

- YES >> GO TO 6.
 NO >> Repair or replace damaged parts.

6. DETECT MALFUNCTIONING ITEMS

Check the following items.

- Harness for short or open between battery and fuse block (J/B)
- 10A fuse [# 25, located in Fuse block (J/B)]
- Fuse block (J/B)
- Battery

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
 NO >> Repair or replace damaged parts.

7. CHECK GROUND CIRCUIT

Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F15	5	Ground	Existed
	42		

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
 NO >> Repair or replace damaged parts.

P1705 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1705 TP SENSOR

DTC Logic

INFOID:000000007883091

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P1705	Accelerator Pedal Position Sensor Signal	The difference between two accelerator pedal position signals that TCM receives from ECM (via CAN communication) exceeds 1/8 and keeps for 1 second or more	<ul style="list-style-type: none">• Harness or connectors (CAN communication line is open or shorted.)• ECM

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Apply the parking brake.
3. Perform full accelerator pedal depression and keep for 1 second.
4. Release a foot from accelerator pedal.
5. Check DTC.

Is "P1705" detected?

- YES >> Go to [TM-135, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883092

1. CHECK DTC WITH ECM

With CONSULT

1. Turn ignition switch ON.
2. Perform "Self Diagnostic Results" in "ENGINE".

Is any DTC detected?

- YES >> Check DTC detected item. Refer to [EC-108, "DTC Index"](#).
NO >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

P1709 INCOMPLETED DATA WRITING

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P1709 INCOMPLETED DATA WRITING

Description

INFOID:000000008327541

When TCM does not store calibration data (individual characteristic value) of each solenoid valve that is stored in the ROM assembly (in the control valve), a malfunction is detected.

DTC Logic

INFOID:000000008327542

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1709	Incompleted Data Writing	When TCM does not store calibration data (individual characteristic value) of each solenoid valve that is stored in the ROM assembly (in the control valve).	<ul style="list-style-type: none"> • Harness or connectors (ROM assembly circuit is open or shorted.) • TCM • ROM assembly (in the control valve)

DTC CONFIRMATION PROCEDURE

NOTE:

Immediately after performing any "DTC CONFIRMATION PROCEDURE", always turn ignition switch OFF. Then wait at least 10 seconds before performing the next test.

1. CHECK DTC DETECTION

With CONSULT

1. Turn ignition switch OFF.
2. Wait for at least 10 consecutive seconds.
3. Turn ignition switch ON.
4. Perform "Self Diagnostic Results" in "TRANSMISSION".

Is "P1709" detected?

- YES >> Go to [TM-136, "Diagnosis Procedure"](#).
- NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000008327543

1. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Turn ignition switch OFF.
2. Disconnect TCM connector and CVT unit connector.
3. Check continuity between TCM vehicle side harness connector terminals and CVT unit vehicle side harness connector terminal.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	8	F46	11	Existed
	9		1	
	10		16	
	25		19	
	26		20	

4. Check continuity between TCM vehicle side harness connector terminals and ground.

P1709 INCOMPLETED DATA WRITING

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

TCM		—	Continuity
Connector	Terminal		
F15	8	Ground	Not existed
	9		
	10		
	25		
	26		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK TCM POWER SUPPLY AND GROUND CIRCUIT

Check TCM power supply and ground circuit. Refer to [TM-132, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. REPLACE TCM

 **With CONSULT**

1. Replace the TCM. Refer to [TM-169, "Removal and Installation"](#).

2. Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-55, "DTC Index"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-185, "Removal and Installation"](#).

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P1722 VEHICLE SPEED

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P1722 VEHICLE SPEED

Description

INFOID:000000007883093

The vehicle speed signal is transmitted from ABS actuator and electric unit (control unit) to TCM via CAN communication line.

DTC Logic

INFOID:000000007883094

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P1722	Vehicle Speed Signal Circuit	TCM detects malfunction in CAN communication with ABS actuator and electric unit (control unit)	<ul style="list-style-type: none">• Harness or connectors (CAN communication line is open or shorted.)• ABS actuator and electric unit (control unit)
		Vehicle speed signal received by TCM (via CAN communication) changes 17 km/h (11 MPH) or more in 0.1 second	
		When vehicle speed detected by TCM is 10 km/h (7 MPH) or more, vehicle speed signal received by ABS actuator and electric unit (control unit) (CAN signal) is 2 km/h (1 MPH) or less	

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following conditions for 10 seconds or more.

Vehicle speed : 10 km/h (7 MPH) or more

4. Stop the vehicle.
5. Check DTC.

Is "P1722" detected?

- YES >> Go to [TM-138, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883095

1. CHECK DTC WITH ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)

With CONSULT

1. Turn ignition switch ON.
2. Perform "Self Diagnostic Results" in "ABS".

Is any DTC detected?

- YES >> Check DTC detected item. Refer to [BRC-40, "Reference Value"](#).
NO >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

P1723 SPEED SENSOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P1723 SPEED SENSOR

Description

INFOID:000000007883096

Judges it as malfunction when it detects noise (pulse) generated by irregular contact of harness etc. of primary speed sensor and secondary speed sensor.

DTC Logic

INFOID:000000007883097

DTC DETECTION LOGIC

CAUTION:

One of the "P0715" or the "P0720" is displayed with the DTC at the same time.

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P1723	Speed Sensor Circuit	High frequency element extracted by TCM from primary speed sensor and secondary speed sensor exceeds a defined value and keeps the status for 1 second or more	Harness or connectors (Primary speed sensor circuit is open or shorted.) (Secondary speed sensor circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following conditions for 5 seconds or more.

Selector lever : "D" position
Vehicle speed : 20 km/h (13 MPH) or more

Is "P1723" detected?

- YES >> Go to [TM-139, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883098

1. CHECK SECONDARY SPEED SENSOR SYSTEM

Check the secondary speed sensor system. Refer to [TM-103, "DTC Logic"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts.

2. CHECK PRIMARY SPEED SENSOR SYSTEM

Check the primary speed sensor system. Refer to [TM-101, "DTC Logic"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).
NO >> Repair or replace damaged parts.

P1726 THROTTLE CONTROL SIGNAL

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P1726 THROTTLE CONTROL SIGNAL

Description

INFOID:000000007883099

The electric throttle control actuator consists of throttle control motor, accelerator pedal position sensor, throttle position sensor, etc. The actuator sends a signal to the ECM, and ECM sends the signal to TCM via CAN communication.

DTC Logic

INFOID:000000007883100

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P1726	Throttle Control Signal Circuit	TCM receives unusual signal of engine system from ECM	Harness or connectors (Electric throttle sensor signal circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Maintain the idling condition for 10 seconds or more.
3. Check DTC.

Is "P1726" detected?

- YES >> Go to [TM-140, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883101

1. CHECK DTC WITH ECM

With CONSULT

1. Turn ignition switch ON.
2. Perform "Self Diagnostic Results" in "ENGINE".

Is any DTC detected?

- YES >> Check DTC detected item. Refer to [EC-108, "DTC Index"](#).
NO >> Check intermittent incident. Refer to [GI-53, "Intermittent Incident"](#).

P1740 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1740 SELECT SOLENOID

DTC Logic

INFOID:000000007883103

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P1740	Lock-up Select Solenoid Valve Circuit	When lock-up select solenoid valve command value of TCM is ON, the OFF status of lock-up select solenoid valve monitor value keeps for 0.2 seconds or more	<ul style="list-style-type: none">• Harness or connectors (Lock-up select solenoid circuit is open or shorted.)• Lock-up select solenoid valve
		When lock-up select solenoid valve command value of TCM is OFF, the ON status of lock-up select solenoid valve monitor value keeps for 0.2 seconds or more	

DTC CONFIRMATION PROCEDURE

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Operate selector lever and keep for 1 second or more in each position.
3. Check DTC.

With GST

Follow the procedure "With CONSULT".

Is "P1740" detected?

- YES >> Go to [TM-141, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883104

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK LOCK-UP SELECT SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check lock-up select solenoid valve. Refer to [TM-142, "Component Inspection \(Lock-up Select Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Replace transaxle assembly due to malfunction in lock-up select solenoid valve. Refer to [TM-185, "Removal and Installation"](#).

2. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Disconnect TCM connector.
2. Check continuity between TCM harness connector terminal and CVT unit harness connector terminal.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	37	F46	13	Existed

3. Check continuity between TCM harness connector terminal and ground.

P1740 SELECT SOLENOID

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

TCM		—	Continuity
Connector	Terminal		
F15	37	Ground	Existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Lock-up Select Solenoid Valve)

INFOID:000000007883105

1. CHECK LOCK-UP SELECT SOLENOID VALVE

Check resistance between CVT unit connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance (Approx.)
13	Ground	CVT fluid temperature: 20°C (68°F)	12.3 – 13.5 Ω
		CVT fluid temperature: 50°C (122°F)	13.7 – 15.1 Ω
		CVT fluid temperature: 80°C (176°F)	15.1 – 16.7 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly due to malfunction in lock-up select solenoid valve. Refer to [TM-185. "Removal and Installation"](#).

P1777 STEP MOTOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

P1777 STEP MOTOR

DTC Logic

INFOID:000000007883110

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P1777	Step Motor Circuit	When step motor command value of TCM is ON, the OFF status of step motor monitor value keeps for 0.2 seconds or more	<ul style="list-style-type: none"> • Harness or connectors (Step motor circuit is open or shorted.) • Step motor
		When step motor command value of TCM is OFF, the ON status of step motor monitor value keeps for 0.2 seconds or more	

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following conditions for 5 seconds or more.

Selector lever : "D" position
Vehicle speed : 20 km/h (13 MPH) or more

With GST

Follow the procedure "With CONSULT".

Is "P1777" detected?

- YES >> Go to [TM-143, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883111

Regarding Wiring Diagram information, refer to [TM-57, "Wiring Diagram"](#).

1. CHECK STEP MOTOR CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check resistance between TCM harness connector terminals.

Connector	TCM Terminal		Resistance (Approx.)
	27	28	
F15	27	28	30.0 Ω
	29	30	

4. Check resistance between TCM harness connector terminals and ground.

P1777 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

TCM		—	Resistance (Approx.)
Connector	Terminal		
F23	27	Ground	15.0 Ω
	28		
	29		
	30		

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).
 NO >> GO TO 2.

2.CHECK STEP MOTOR

1. Disconnect CVT unit connector.
2. Check step motor. Refer to [TM-144. "Component Inspection \(Step Motor\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace transaxle assembly due to malfunction in step motor. Refer to [TM-185. "Removal and Installation"](#).

3.CHECK CIRCUIT BETWEEN TCM AND CVT UNIT

1. Check continuity between TCM harness connector terminals and CVT unit harness connector terminals.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F15	27	F46	9	Existed
	28		8	
	29		7	
	30		6	

2. Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F15	27	Ground	Not existed
	28		
	29		
	30		

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-53. "Intermittent Incident"](#).
 NO >> Repair or replace damaged parts.

Component Inspection (Step Motor)

INFOID:000000007883112

1.CHECK STEP MOTOR

1. Check resistance between CVT unit connector terminals.

CVT unit		Resistance (Approx.)
Terminal		
6	7	30.0 Ω
8	9	

2. Check the resistance between CVT unit connector terminals and ground.

P1777 STEP MOTOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

CVT unit terminal	—	Resistance (Approx.)
6	Ground	15.0 Ω
7		
8		
9		

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly due to malfunction in step motor. Refer to [TM-185, "Removal and Installation"](#).

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P1778 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1778 STEP MOTOR

Description

INFOID:000000007883113

- The step motor changes the step by turning 4 coils ON/OFF according to the signal from TCM. As a result, the flow of line pressure to primary pulley is changed and pulley ratio is controlled.
- This diagnosis item is detected when the electrical system is OK, but the mechanical system is NG.
- This diagnosis item is detected when the state of the changing of the speed mechanism in the unit does not operate normally.

DTC Logic

INFOID:000000007883114

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition	Possible cause
P1778	Step Motor Circuit Intermittent	When below diagnosis conditions are met, the difference between actual primary speed and command primary speed calculated by shift control logic exceeds 1,000 rpm and keeps the status for 5 seconds or more <ul style="list-style-type: none">• Diagnosis Conditions<ul style="list-style-type: none">- Selector lever: "D" position- Vehicle speed: 11 km/h (7 MPH) or more- Accelerator pedal position: 1.1/8- Engine speed: 450 rpm or more- CVT fluid temperature: 20°C – 80°C (68°F – 176°F)	Step motor

DTC CONFIRMATION PROCEDURE

CAUTION:

- **Always drive vehicle at a safe speed.**
- **Check primary speed and vehicle speed before perform "DTC CONFIRMATION PROCEDURE".**
- **If hi-gear fixation occurred, go to [TM-146, "Diagnosis Procedure"](#).**

1. PRECONDITIONING

If "DTC CONFIRMATION PROCEDURE" has been previously conducted, always turn ignition switch OFF and wait at least 10 seconds before conducting the next test.

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Warm up the engine. [Set the CVT fluid to 20°C (68°F) or more.]

NOTE:

When the ambient temperature is 20°C (68°F), the CVT fluid usually increases to 50 to 80°C (122 to 176°F) with driving in an urban area for approximately 10 minutes.

3. Maintain the following conditions for at least 30 seconds.

Selector lever	:	"D" position
Accelerator pedal position	:	1.1/8 or more
Vehicle speed	:	20 km/h (13 MPH) or more

With GST

Follow the procedure "With CONSULT".

Is "P1778" detected?

- YES >> Go to [TM-146, "Diagnosis Procedure"](#).
NO >> INSPECTION END

Diagnosis Procedure

INFOID:000000007883115

1. CHECK STEP MOTOR SYSTEM

P1778 STEP MOTOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

Check step motor system. Refer to [TM-143, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-103, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-101, "Diagnosis Procedure"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK INTERMITTENT INCIDENT

Refer to [GI-53, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transaxle assembly. Refer to [TM-185, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

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SHIFT POSITION INDICATOR CIRCUIT

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

SHIFT POSITION INDICATOR CIRCUIT

Component Function Check

INFOID:000000007883117

1. CHECK SHIFT POSITION INDICATOR

CAUTION:

Always drive vehicle at a safe speed.

1. Start engine.
2. Check that correct selector lever position ("P", "R", "N", "D") is displayed as selector lever is moved into each position.

Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to [TM-148, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007883118

1. CHECK INPUT SIGNALS

With CONSULT

1. Start engine.
2. Select "RANGE" in "Data Monitor" and read out the value.
3. Check that correct selector lever position ("P", "R", "N", "D") is displayed as selector lever is moved into each position.
4. Drive vehicle in the manual mode, and confirm that the actual gear position and the meter's indication of the position mutually coincide when the selector lever is shifted to the "UP (+ side)" or "DOWN (- side)" side (1st ↔ 6th gear).

Is the inspection result normal?

YES >> INSPECTION END

NO-1 [The actual gear position does not change, or shifting into the manual mode is not possible (no gear shifting in the manual mode possible). Or the shift position indicator is not indicated.]>>Check the following.

- Check manual mode switch. Refer to [TM-119, "Diagnosis Procedure"](#).
- Check CVT main system (Fail-safe function actuated).
 - Perform "Self Diagnostic Results" in "TRANSMISSION".

NO-2 (The actual gear position changes, but the shift position indicator is not indicated.)>>Perform "Self Diagnostic Results" in "TRANSMISSION".

NO-3 (The actual gear position and the indication on the shift position indicator do not coincide.)>>Perform "Self Diagnostic Results" in "TRANSMISSION".

NO-4 (Only a specific position or positions is/are not indicated on the shift position indicator.)>>Check the combination meter. Refer to [MWI-20, "Reference Value"](#).

SHIFT LOCK SYSTEM

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

SHIFT LOCK SYSTEM

Component Function Check

INFOID:000000007883120

1. CHECK CVT SHIFT LOCK OPERATION

1. Turn ignition switch ON.
2. Move selector lever to "P" position.
3. Attempt to shift selector lever to any other position with brake pedal released.

Can selector lever be shifted to any other position?

- YES >> Go to [TM-149, "Diagnosis Procedure"](#).
 NO >> GO TO 2.

2. CHECK CVT SHIFT LOCK OPERATION

Attempt to shift selector lever to any other position with brake pedal depressed.

Can the selector lever be shifted to any other position?

- YES >> Inspection End
 NO >> Go to [TM-149, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000007883121

Regarding Wiring Diagram information, refer to [TM-70, "Wiring Diagram"](#).

1. CHECK POWER SOURCE (STOP LAMP SWITCH)

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch connector.
3. Check voltage between stop lamp switch connector E38 terminal 1 and ground.

Stop lamp switch		Ground	Voltage (Approx.)
Connector	Terminal		Battery voltage
E38	1		

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Check the following:
- Harness for short or open between fuse block (J/B) and stop lamp switch
 - 10A fuse (No. 10, located in fuse block [J/B])

2. CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to [TM-151, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
 NO >> Replace stop lamp switch. Refer to [BR-20, "Exploded View"](#).

3. CHECK GROUND CIRCUIT (BCM)

1. Check continuity between BCM connector M81 terminals 134,143 and ground.

BCM		Ground	Continuity
Connector	Terminal (+)		
M81	134		Yes
M81	143		Yes

Is the inspection result normal?

- YES >> GO TO 4.
 NO >> Repair or replace damaged parts.

SHIFT LOCK SYSTEM

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

4. CHECK HARNESS BETWEEN BCM AND STOP LAMP SWITCH FOR OPEN

Check continuity between BCM connector M18 terminal 27 and stop lamp switch connector E38 terminal 2.

BCM		stop lamp switch		Continuity
Connector	Terminal	Connector	Terminal	
M18	27	E38	2	Yes

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN BCM AND STOP LAMP SWITCH FOR SHORT CIRCUIT

Check continuity between BCM connector M18 terminal 27 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M18	27		No

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN BCM AND CVT SHIFT SELECTOR FOR OPEN

1. Disconnect CVT shift selector connector.
2. Check continuity between BCM connector M80 terminal 108 and CVT shift selector connector M78 terminal 3.

BCM		CVT shift selector		Continuity
Connector	Terminal	Connector	Terminal	
M80	108	M78	3	Yes

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK HARNESS BETWEEN BCM AND CVT SHIFT SELECTOR FOR SHORT CIRCUIT

Check continuity between BCM connector M80 terminal 108 and ground.

BCM		Ground	Continuity
Connector	Terminal		
M80	108		No

Is the inspection result normal?

YES >> GO TO 8.

NO >> Repair or replace damaged parts.

8. CHECK GROUND CIRCUIT (CVT SHIFT SELECTOR)

Check continuity between CVT shift selector connector M78 terminal 4 and ground.

CVT shift selector		Ground	Continuity
Connector	Terminal		
M78	4		Yes

Is the inspection result normal?

YES >> Replace shift lock solenoid. Refer to [TM-171, "Exploded View"](#).

NO >> Repair or replace damaged parts.

SHIFT LOCK SYSTEM

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

INFOID:000000007883122

Component Inspection (Stop Lamp Switch)

1. CHECK STOP LAMP SWITCH

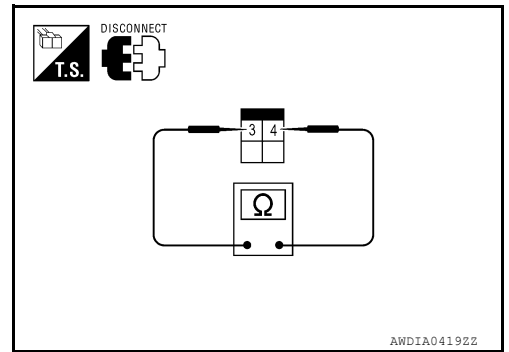
Check continuity between stop lamp switch terminals.

Stop lamp switch terminals		Condition	Continuity
1	2	Brake pedal depressed	Yes
		Brake pedal released	No

Is the inspection result normal?

YES >> Inspection End

NO >> Replace stop lamp switch. Refer to [BR-20, "Exploded View"](#).



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SYSTEM SYMPTOM

[CVT: RE0F09B]

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

SYSTEM SYMPTOM

Symptom Table

INFOID:000000007883130

The diagnostics item numbers show the sequence for inspection. Inspect in order from item 1.

No.	Item	Symptom	Condition	Diagnostic item	Reference
1		Large shock. ("N"→ "D" position)	ON vehicle	1. Engine idle speed	EC-153
				2. Engine speed signal	TM-106
				3. Accelerator pedal position sensor	TM-135
				4. CVT position	TM-173
				5. CVT fluid temperature sensor	TM-98
				6. CAN communication line	TM-88
				7. CVT fluid level and state	TM-164
				8. Line pressure test	TM-80
				9. Torque converter clutch solenoid valve	TM-107
				10. Lock-up select solenoid valve	TM-141
				11. Transmission range switch	TM-95
			OFF vehicle	12. Forward clutch	TM-184
				13. Control valve	
2	Shift Shock	Large shock. ("N"→ "R" position)	ON vehicle	1. Engine idle speed	EC-153
				2. Engine speed signal	TM-106
				3. Accelerator pedal position sensor	TM-135
				4. CVT position	TM-173
				5. CVT fluid temperature sensor	TM-98
				6. CAN communication line	TM-88
				7. CVT fluid level and state	TM-164
				8. Line pressure test	TM-80
				9. Torque converter clutch solenoid valve	TM-107
				10. Lock-up select solenoid valve	TM-141
				11. Transmission range switch	TM-95
			OFF vehicle	12. Reverse brake	TM-184
				13. Control valve	
3		Shock is too large for lock-up.	ON vehicle	1. CVT position	TM-173
				2. Engine speed signal	TM-106
				3. CAN communication line	TM-88
				4. CVT fluid level and state	TM-164
			OFF vehicle	5. Torque converter	TM-189
				6. Control valve	TM-184

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
4	Slips/Will Not Engage	Vehicle cannot take off from "D" position.	ON vehicle	1. CVT fluid level and state	TM-164
				2. CVT position	TM-173
				3. CAN communication line	TM-88
				4. Line pressure test	TM-80
				5. Stall test	TM-79
				6. Step motor	TM-143
				7. Primary speed sensor	TM-101
				8. Secondary speed sensor	TM-103
				9. Accelerator pedal position sensor	TM-135
				10. CVT fluid temperature sensor	TM-98
				11. Secondary pressure sensor	TM-122
				12. TCM power supply and ground	TM-132
			OFF vehicle	13. Oil pump assembly	TM-184
				14. Forward clutch	
				15. Control valve	
				16. Parking components	
5	Slips/Will Not Engage	Vehicle cannot take off from "R" position.	ON vehicle	1. CVT fluid level and state	TM-164
				2. CVT position	TM-173
				3. CAN communication line	TM-88
				4. Line pressure test	TM-80
				5. Stall test	TM-79
				6. Step motor	TM-143
				7. Primary speed sensor	TM-101
				8. Secondary speed sensor	TM-103
				9. Accelerator pedal position sensor	TM-135
				10. CVT fluid temperature sensor	TM-98
				11. Secondary pressure sensor	TM-122
				12. TCM power supply and ground	TM-132
			OFF vehicle	13. Oil pump assembly	TM-184
				14. Reverse brake	
				15. Control valve	
				16. Parking components	

A
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C
TM
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SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
6	Slips/Will Not Engage	Does not lock-up.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Engine speed signal	TM-106
				4. Primary speed sensor	TM-101
				5. Torque converter clutch solenoid valve	TM-107
				6. CAN communication line	TM-88
				7. Stall test	TM-79
				8. Step motor	TM-143
				9. Transmission range switch	TM-95
				10. Lock-up select solenoid valve	TM-141
				11. CVT fluid temperature sensor	TM-98
				12. Secondary speed sensor	TM-103
				13. Secondary pressure sensor	TM-122
			OFF vehicle	14. Torque converter	TM-189
				15. Oil pump assembly	TM-184
				16. Control valve	
7	Slips/Will Not Engage	Does not hold lock-up condition.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Engine speed signal	TM-106
				4. Primary speed sensor	TM-101
				5. Torque converter clutch solenoid valve	TM-107
				6. CAN communication line	TM-88
				7. Stall test	TM-79
				8. Step motor	TM-143
				9. Transmission range switch	TM-95
				10. Lock-up select solenoid valve	TM-141
				11. CVT fluid temperature sensor	TM-98
				12. Secondary speed sensor	TM-103
				13. Secondary pressure sensor	TM-122
			OFF vehicle	14. Torque converter	TM-189
				15. Oil pump assembly	TM-184
				16. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
8		Lock-up is not re-leased.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Engine speed signal	TM-106
				4. Primary speed sensor	TM-101
				5. Torque converter clutch solenoid valve	TM-107
				6. CAN communication line	TM-88
				7. Stall test	TM-79
			OFF vehicle	8. Torque converter	TM-189
				9. Oil pump assembly	TM-184
				10. Control valve	
9	Slips/Will Not Engage	With selector lever in "D" position, acceleration is extremely poor.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Stall test	TM-79
				4. Accelerator pedal position sensor	TM-135
				5. CAN communication line	TM-88
				6. Transmission range switch	TM-95
				7. CVT position	TM-173
				8. Step motor	TM-143
				9. Primary speed sensor	TM-101
				10. Secondary speed sensor	TM-103
				11. Accelerator pedal position sensor	TM-135
				12. Primary pressure sensor	TM-127
				13. Secondary pressure sensor	TM-122
				14. CVT fluid temperature sensor	TM-98
				15. TCM power supply and ground	TM-132
			OFF vehicle	16. Torque converter	TM-189
				17. Oil pump assembly	TM-184
				18. Forward clutch	
				19. Control valve	

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SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
10	Slips/Will Not Engage	With selector lever in "R" position, acceleration is extremely poor.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Stall test	TM-79
				4. Accelerator pedal position sensor	TM-135
				5. CAN communication line	TM-88
				6. Transmission range switch	TM-95
				7. CVT position	TM-173
				8. Step motor	TM-143
				9. Primary speed sensor	TM-101
				10. Secondary speed sensor	TM-103
				11. Primary pressure sensor	TM-127
				12. Secondary pressure sensor	TM-122
				13. CVT fluid temperature sensor	TM-98
				14. TCM power supply and ground	TM-132
			OFF vehicle	15. Torque converter	TM-189
				16. Oil pump assembly	TM-184
				17. Reverse brake	
				18. Control valve	
11	Slips at lock-up.		ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Engine speed signal	TM-106
				4. Primary speed sensor	TM-101
				5. Torque converter clutch solenoid valve	TM-107
				6. CAN communication line	TM-88
				7. Stall test	TM-79
				8. Step motor	TM-143
				9. Transmission range switch	TM-95
				10. Lock-up select solenoid valve	TM-141
				11. CVT fluid temperature sensor	TM-98
				12. Secondary speed sensor	TM-103
				13. Secondary pressure sensor	TM-122
			OFF vehicle	14. Torque converter	TM-189
				15. Oil pump assembly	TM-184
				16. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
12	Others	No creep at all.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Accelerator pedal position sensor	TM-135
				4. Transmission range switch	TM-95
				5. CAN communication line	TM-88
				6. Stall test	TM-79
				7. CVT position	TM-173
				8. Step motor	TM-143
				9. Primary speed sensor	TM-101
				10. Secondary speed sensor	TM-103
				11. CVT fluid temperature sensor	TM-98
				12. Primary pressure sensor	TM-127
				13. Secondary pressure sensor	TM-122
				14. TCM power supply and ground	TM-132
			OFF vehicle	15. Torque converter	TM-189
				16. Oil pump assembly	TM-184
				17. Gear system	
				18. Forward clutch	
				19. Reverse brake	
				20. Control valve	

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SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
13	Others	Vehicle cannot drive in all positions.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Transmission range switch	TM-95
				4. Stall test	TM-79
				5. CVT position	TM-173
				6. Step motor	TM-143
				7. Primary speed sensor	TM-101
				8. Secondary speed sensor	TM-103
				9. Accelerator pedal position sensor	TM-135
				10. CVT fluid temperature sensor	TM-98
				11. Secondary pressure sensor	TM-122
				12. TCM power supply and ground	TM-132
			OFF vehicle	13. Torque converter	TM-189
				14. Oil pump assembly	TM-184
				15. Gear system	
				16. Forward clutch	
				17. Reverse brake	
				18. Control valve	
				19. Parking components	
14		With selector lever in "D" position, driving is not possible.	ON vehicle	1. CVT fluid level and state	
				2. Line pressure test	TM-80
				3. Transmission range switch	TM-95
				4. Stall test	TM-79
				5. CVT position	TM-173
				6. Step motor	TM-143
				7. Primary speed sensor	TM-101
				8. Secondary speed sensor	TM-103
				9. Accelerator pedal position sensor	TM-135
				10. CVT fluid temperature sensor	TM-98
				11. Secondary pressure sensor	TM-122
				12. TCM power supply and ground	TM-132
			OFF vehicle	13. Torque converter	TM-189
				14. Oil pump assembly	TM-184
				15. Gear system	
				16. Forward clutch	
				17. Control valve	
				18. Parking components	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
15	Others	With selector lever in "R" position, driving is not possible.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Transmission range switch	TM-95
				4. Stall test	TM-79
				5. CVT position	TM-173
				6. Step motor	TM-143
				7. Primary speed sensor	TM-101
				8. Secondary speed sensor	TM-103
				9. Accelerator pedal position sensor	TM-135
				10. CVT fluid temperature sensor	TM-98
				11. Secondary pressure sensor	TM-122
				12. TCM power supply and ground	TM-132
			OFF vehicle	13. Torque converter	TM-189
				14. Oil pump assembly	TM-184
				15. Gear system	
				16. Reverse brake	
				17. Control valve	
				18. Parking components	
16	Others	Judder occurs during lock-up.	ON vehicle	1. CVT fluid level and state	
				2. Engine speed signal	TM-106
				3. Primary speed sensor	TM-101
				4. Secondary speed sensor	TM-103
				5. Accelerator pedal position sensor	TM-135
				6. CAN communication line	TM-88
				7. Torque converter clutch solenoid valve	TM-107
			OFF vehicle	8. Torque converter	TM-189
				9. Control valve	TM-184
17	Others	Strange noise in "D" position.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Engine speed signal	TM-106
				3. CAN communication line	TM-88
			OFF vehicle	4. Torque converter	TM-189
				5. Oil pump assembly	TM-184
				6. Gear system	
				7. Forward clutch	
				8. Control valve	
				9. Bearing	

A
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C
TM
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SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
18		Strange noise in "R" position.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Engine speed signal	TM-106
				3. CAN communication line	TM-88
			OFF vehicle	4. Torque converter	TM-189
				5. Oil pump assembly	TM-184
				6. Gear system	
				7. Reverse brake	
				8. Control valve	
19	Others	Strange noise in "N" position.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Engine speed signal	TM-106
				3. CAN communication line	TM-88
			OFF vehicle	4. Torque converter	TM-189
				5. Oil pump assembly	TM-184
				6. Gear system	
				7. Control valve	
20		Vehicle does not decelerate by engine brake.	ON vehicle	1. CVT fluid level and state	TM-164
				2. CVT position	TM-173
				3. CAN communication line	TM-88
				4. Step motor	TM-143
				5. Primary speed sensor	TM-101
				6. Secondary speed sensor	TM-103
				7. Line pressure test	TM-80
				8. Engine speed signal	TM-106
				9. Accelerator pedal position sensor	TM-135
			OFF vehicle	10. Control valve	TM-184

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
21		Maximum speed low.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Line pressure test	TM-80
				3. Accelerator pedal position sensor	TM-135
				4. CAN communication line	TM-88
				5. Stall test	TM-79
				6. Step motor	TM-143
				7. Primary speed sensor	TM-101
				8. Secondary speed sensor	TM-103
				9. Primary pressure sensor	TM-127
				10. Secondary pressure sensor	TM-122
				11. CVT fluid temperature sensor	TM-98
			OFF vehicle	12. Torque converter	TM-189
				13. Oil pump assembly	TM-184
				14. Gear system	
				15. Forward clutch	
				16. Control valve	
22	Others	With selector lever in "P" position, vehicle does not enter parking condition or, with selector lever in another position, parking condition is not cancelled.	ON vehicle	1. Transmission range switch	TM-95
				2. CVT position	TM-173
			OFF vehicle	3. Parking components	TM-184
			23		Vehicle drives with CVT in "P" position.
2. CVT fluid level and state	TM-164				
3. CVT position	TM-173				
OFF vehicle	4. Parking components	TM-184			
	5. Gear system				
	6. Control valve				
24		Vehicle drives with CVT in "N" position.	ON vehicle	1. Transmission range switch	TM-95
				2. CVT fluid level and state	TM-164
				3. CVT position	TM-173
			OFF vehicle	4. Gear system	TM-184
				5. Forward clutch	
				6. Reverse brake	
				7. Control valve	

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C
TM
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SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
25		Engine stall.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Engine speed signal	TM-106
				3. Primary speed sensor	TM-101
				4. Torque converter clutch solenoid valve	TM-107
				5. CAN communication line	TM-88
				6. Stall test	TM-79
				7. Secondary pressure sensor	TM-122
			OFF vehicle	8. Torque converter	TM-189
				9. Control valve	TM-184
26		Engine stalls when selector lever is shifted "N"→"D" or "R".	ON vehicle	1. CVT fluid level and state	TM-164
				2. Engine speed signal	TM-106
				3. Primary speed sensor	TM-101
				4. Torque converter clutch solenoid valve	TM-107
				5. CAN communication line	TM-88
				6. Stall test	TM-79
			OFF vehicle	7. Torque converter	TM-189
				8. Control valve	TM-184
27	Others	Engine speed does not return to idle.	ON vehicle	1. CVT fluid level and state	TM-164
				2. Accelerator pedal position sensor	TM-135
				3. Secondary speed sensor	TM-103
				4. CAN communication line	TM-88
			OFF vehicle	5. Control valve	TM-184
28		CVT does not shift	ON vehicle	1. CVT fluid level and state	TM-164
				2. CVT position	TM-173
				3. Line pressure test	TM-80
				4. Engine speed signal	TM-106
				5. Accelerator pedal position sensor	TM-135
				6. CAN communication line	TM-88
				7. Primary speed sensor	TM-101
				8. Secondary speed sensor	TM-103
				9. Step motor	TM-143
			OFF vehicle	10. Control valve	TM-184
				11. Oil pump assembly	
29		Engine does not start in "N" or "P" position.	ON vehicle	1. Ignition switch and starter	PG-22, STR-10
				2. CVT position	TM-173
				3. Transmission range switch	TM-95

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic item	Reference
30	Others	Engine starts in positions other than "N" or "P".	ON vehicle	1. Ignition switch and starter	PG-22, STR-10
				2. CVT position	TM-173
				3. Transmission range switch	TM-95
31		When brake pedal is depressed with ignition switch ON, selector lever cannot be shifted from "P" position to other position.	ON vehicle	1. Stop lamp switch	TM-149
				2. Shift lock solenoid	
				3. CVT shift selector	
32		When brake pedal is not depressed with ignition switch ON, selector lever can be shifted from "P" position to other position.	ON vehicle	1. Stop lamp switch	TM-149
				2. Shift lock solenoid	
				3. CVT shift selector	
33		Cannot be changed to manual mode.	ON vehicle	1. Manual mode switch	TM-119
	2. CAN communication line			TM-88	
	3. Combination meter			MWI-66	

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PERIODIC MAINTENANCE

CVT FLUID

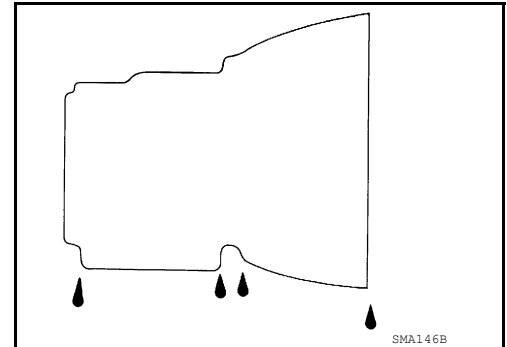
Inspection

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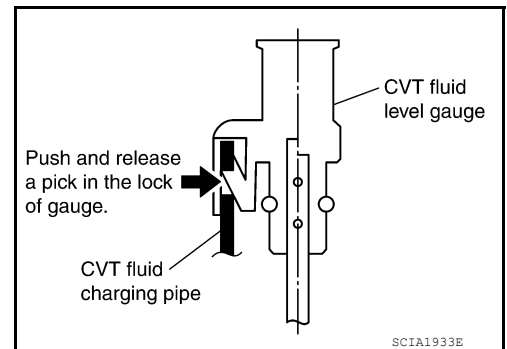
CHECKING CVT FLUID

The fluid level should be checked with the fluid warmed up to 50 – 80°C (122 – 176°F). The fluid level check procedure is as follows:

1. Check for fluid leakage.
2. With the engine warmed up, drive the vehicle in an urban area. When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50 – 80°C (122 – 176°F).
3. Park the vehicle on a level surface.
4. Apply parking brake firmly.
5. With engine at idle, while depressing brake pedal, move shift selector throughout the entire shift range.
6. Pull out the CVT fluid level gauge from the CVT fluid charging pipe after pressing the tab on the CVT fluid level gauge to release the lock.



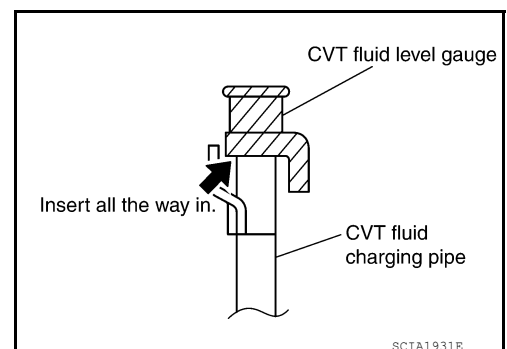
7. Wipe fluid off the CVT fluid level gauge. Insert the CVT fluid level gauge rotating 180° from the originally installed position, then securely push the CVT fluid level gauge until it meets the top end of the CVT fluid charging pipe.



8. Place the selector lever in "P" or "N" and check that the fluid level is within the specified range.

CAUTION:

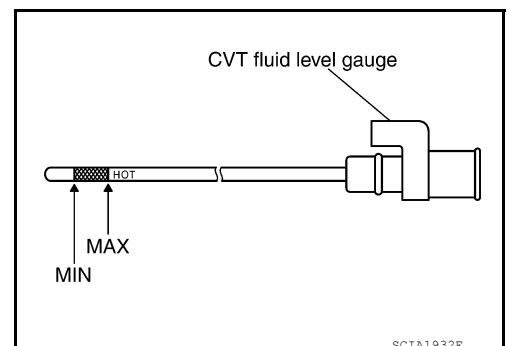
When wiping away the CVT fluid level gauge, always use lint-free paper, not a cloth rag.



8. Place the selector lever in "P" or "N" and check that the fluid level is within the specified range.

CAUTION:

When reinstalling CVT fluid level gauge, insert it into the CVT fluid charging pipe and rotate it to the original installation position until securely locked.



CVT FLUID CONDITION

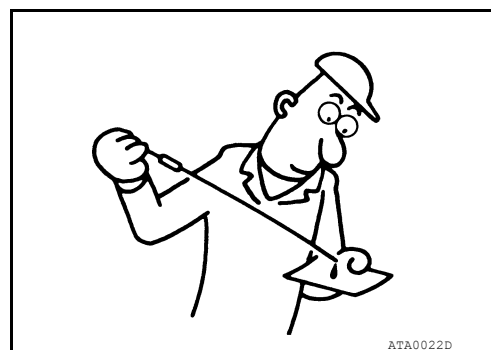
CVT FLUID

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

Check CVT fluid condition.

- If CVT fluid is very dark or smells burned, check operation of CVT. Flush cooling system after repair of CVT.
- If CVT fluid contains frictional material (clutches, brakes, etc.), replace radiator and flush cooler line using cleaning solvent and compressed air after repair of CVT. Refer to [TM-166, "Cleaning"](#).



Fluid status	Conceivable cause	Required operation
Varnished (viscous varnish state)	CVT fluid becomes degraded due to high temperatures.	Replace the CVT fluid and check the CVT main unit and the vehicle for malfunctions (wire harnesses, cooler pipes, etc.).
Milky white or cloudy	Water in the fluid	Replace the CVT fluid and check for places where water is getting in.
Large amount of metal powder mixed in	Unusual wear of sliding parts within CVT	Replace the CVT fluid and check for improper operation of the CVT.

Changing

INFOID:000000008180395

CAUTION:

Replace an O-ring with new ones at the final stage of the operation when installing.

1. Remove drain plug from oil pan.
2. Remove O-ring from drain plug.
3. Install O-ring to drain plug.

CAUTION:

Never reuse O-ring.

4. Install drain plug to oil pan. Refer to [TM-177, "Exploded View"](#).
5. Fill CVT fluid from CVT fluid charging pipe to the specified level.

CVT fluid : Refer to [TM-191, "General Specification"](#).

Fluid capacity : Refer to [TM-191, "General Specification"](#).

CAUTION:

- Use only Genuine NISSAN CVT Fluid NS-3. Never mix with other fluid.
 - Using CVT fluid other than Genuine NISSAN CVT Fluid NS-3 will deteriorate in driveability and CVT durability, and may damage the CVT, which is not covered by the warranty.
 - When filling CVT fluid, take care not to scatter heat generating parts such as exhaust.
 - Sufficiently shake the container of CVT fluid before using.
 - Delete CVT fluid deterioration date with CONSULT after changing CVT fluid. Refer to [TM-42, "CONSULT Function"](#).
6. With the engine warmed up, drive the vehicle in an urban area.
- NOTE:**
When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50 – 80°C (122 – 176°F).
7. Check CVT fluid level and condition.
 8. Repeat steps 1 to 5 if CVT fluid has been contaminated.
 9. Select "Work Support" in "TRANSMISSION" with CONSULT.
 10. Select "CONFORM CVTF DETERIORTN".
 11. Touch "Clear".

CVT FLUID COOLER SYSTEM

Cleaning

INFOID:000000008180396

Whenever an automatic transaxle is repaired, overhauled, or replaced, the CVT fluid cooler mounted in the radiator must be inspected and cleaned.

Metal debris and friction material, if present, can be trapped or be deposited in the CVT fluid cooler. This debris can contaminate the newly serviced CVT or, in severe cases, can block or restrict the flow of CVT fluid. In either case, malfunction of the newly serviced CVT may occur.

Debris, if present, may deposit as CVT fluid enters the cooler inlet. It will be necessary to back flush the cooler through the cooler outlet in order to flush out any built up debris.

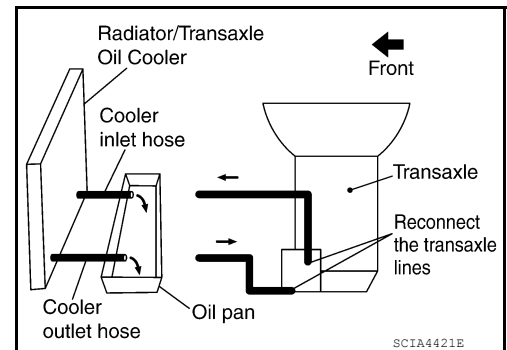
CVT FLUID COOLER CLEANING PROCEDURE

1. Position an oil pan under the transaxle's inlet and outlet cooler hoses.
2. Identify the inlet and outlet fluid cooler hoses.
3. Disconnect the fluid cooler inlet and outlet rubber hoses from the steel cooler tubes or bypass valve.

NOTE:

Replace the cooler hoses if rubber material from the hose remains on the tube fitting.

4. Allow any CVT fluid that remains in the cooler hoses to drain into the oil pan.

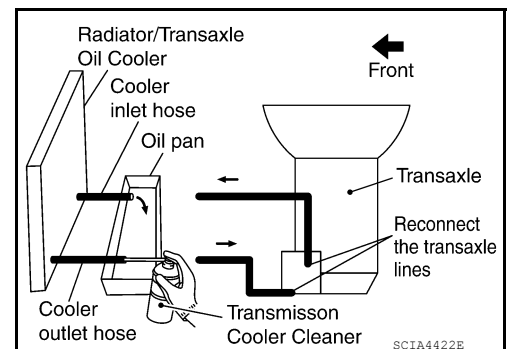


5. Insert the extension adapter hose of a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the cooler outlet hose.

CAUTION:

- **Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.**
- **Spray Transmission Cooler Cleaner only with adequate ventilation.**
- **Avoid contact with eyes and skin.**
- **Do not breath vapors or spray mist.**

6. Hold the hose and can as high as possible and spray Transmission Cooler Cleaner in a continuous stream into the cooler outlet hose until CVT fluid flows out of the cooler inlet hose for 5 seconds.



7. Insert the tip of an air gun into the end of the cooler outlet hose.
8. Wrap a shop rag around the air gun tip and end of the cooler outlet hose.

9. Blow compressed air regulated to 5 to 9 kg/cm² (70 to 130 psi) through the cooler outlet hose for 10 seconds to force out any remaining CVT fluid.

10. Repeat steps 5 through 9 three additional times.

11. Position an oil pan under the banjo bolts that connect the CVT fluid cooler steel lines to the transaxle.

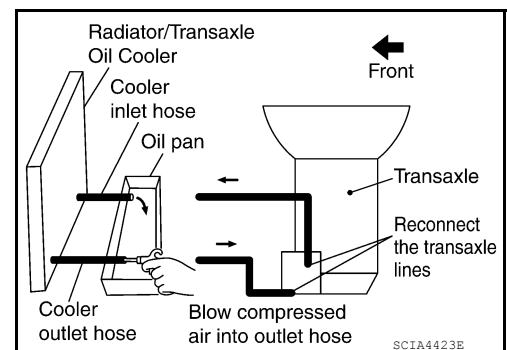
12. Remove the banjo bolts.

13. Flush each steel line from the cooler side back toward the transaxle by spraying Transmission Cooler Cleaner in a continuous stream for 5 seconds.

14. Blow compressed air regulated to 5 to 9 kg/cm² (70 to 130 psi) through each steel line from the cooler side back toward the transaxle for 10 seconds to force out any remaining CVT fluid.

15. Ensure all debris is removed from the steel cooler lines.

16. Ensure all debris is removed from the banjo bolts and fittings.



CVT FLUID COOLER SYSTEM

[CVT: RE0F09B]

< PERIODIC MAINTENANCE >

17. Perform "CVT FLUID COOLER DIAGNOSIS PROCEDURE".

CVT FLUID COOLER DIAGNOSIS PROCEDURE

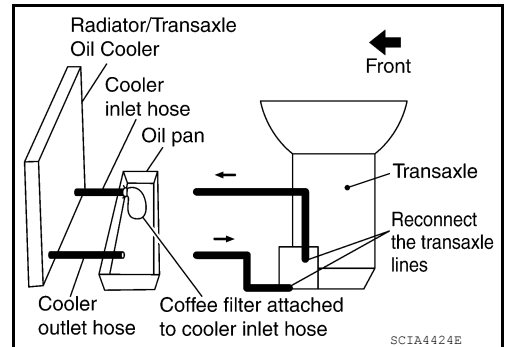
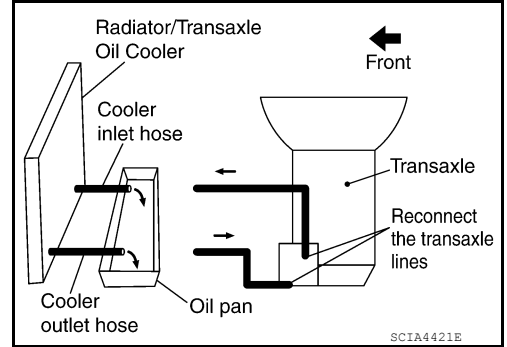
NOTE:

Insufficient cleaning of the cooler inlet hose exterior may lead to inaccurate debris identification.

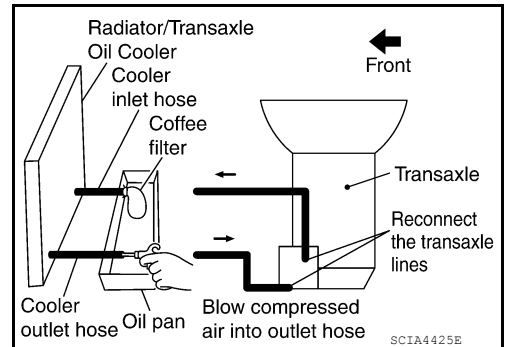
1. Position an oil pan under the transaxle's inlet and outlet cooler hoses.
2. Clean the exterior and tip of the cooler inlet hose.
3. Insert the extension adapter hose of a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the cooler outlet hose.

CAUTION:

- Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.
 - Spray Transmission Cooler Cleaner only with adequate ventilation.
 - Avoid contact with eyes and skin.
 - Do not breath vapors or spray mist.
4. Hold the hose and can as high as possible and spray Transmission Cooler Cleaner in a continuous stream into the cooler outlet hose until CVT fluid flows out of the cooler inlet hose for 5 seconds.
 5. Tie a common white, basket-type coffee filter to the end of the cooler inlet hose.

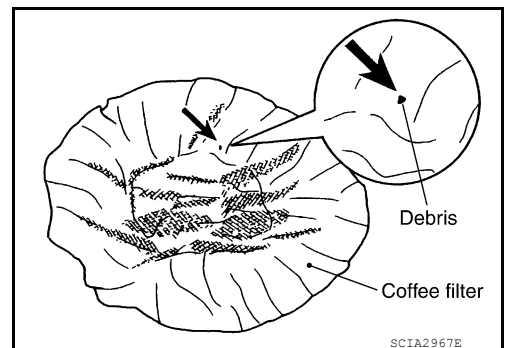


6. Insert the tip of an air gun into the end of the cooler outlet hose.
7. Wrap a shop rag around the air gun tip and end of cooler outlet hose.
8. Blow compressed air regulated to 5 to 9 kg/cm² (70 to 130 psi) through the cooler outlet hose to force any remaining CVT fluid into the coffee filter.
9. Remove the coffee filter from the end of the cooler inlet hose.
10. Perform "CVT FLUID COOLER INSPECTION PROCEDURE".



CVT FLUID COOLER INSPECTION PROCEDURE

1. Inspect the coffee filter for debris.
 - a. If small metal debris less than 1 mm (0.040 in) in size or metal powder is found in the coffee filter, this is normal. If normal debris is found, the CVT fluid cooler/radiator can be reused and the procedure is ended.

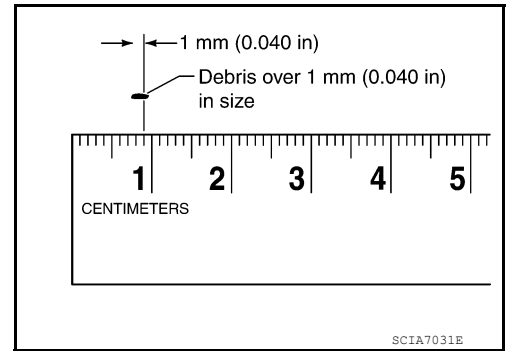


CVT FLUID COOLER SYSTEM

[CVT: RE0F09B]

< PERIODIC MAINTENANCE >

- b. If one or more pieces of debris are found that are over 1 mm (0.040 in) in size and/or peeled clutch facing material is found in the coffee filter, the fluid cooler is not serviceable. The radiator/ fluid cooler must be replaced and the inspection procedure is ended.



CVT FLUID COOLER FINAL INSPECTION

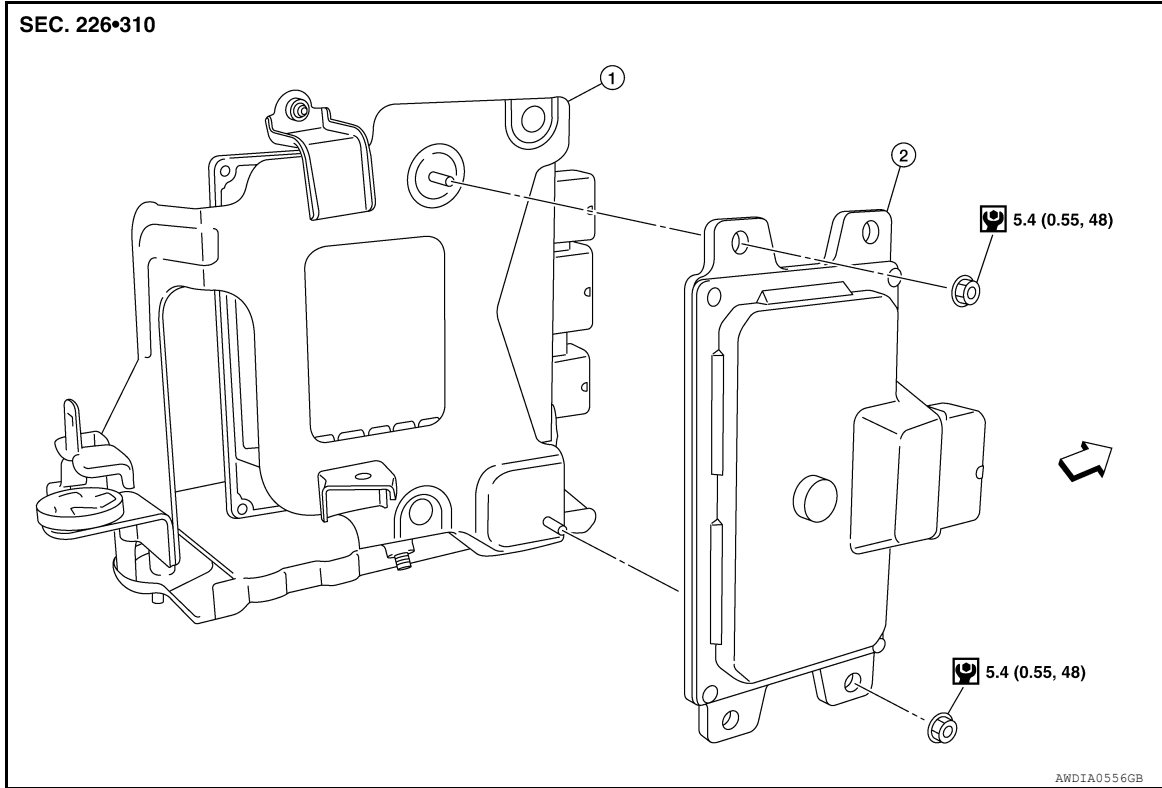
After performing all procedures, ensure that all remaining oil is cleaned from all components.

REMOVAL AND INSTALLATION

TCM

Exploded View

INFOID:000000007883151



- 1. Bracket
- 2. TCM

↶ Front

: N·m (kg-m, in-lb)

Removal and Installation

INFOID:000000007883152

CAUTION:

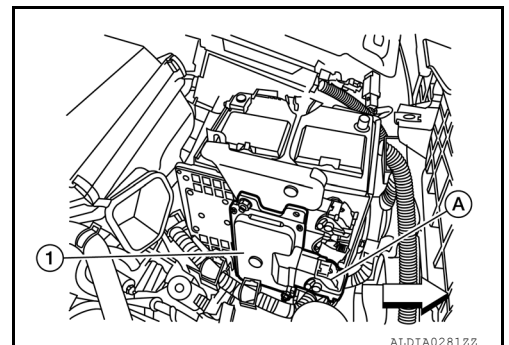
- Do not impact the TCM when removing or installing TCM.
- When replacing TCM and transaxle assembly as a set, replace transaxle assembly first and then replace TCM. Refer to [TM-76, "Description"](#).

REMOVAL

1. Disconnect the battery negative terminal. Refer to [PG-92, "Exploded View"](#).
2. Remove front air duct. Refer to [EM-24, "Removal and Installation"](#).
3. Disconnect TCM harness connector (A).

↶ : Front

4. Remove TCM nuts and TCM (1) from bracket.



ALDIA02812Z

TCM

< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

INSTALLATION

Installation is in the reverse order of removal.

Adjustment

INFOID:000000007883153

ADJUSTMENT AFTER INSTALLATION

After TCM is replaced, check programming as needed. Refer to [TM-76. "Procedure"](#).

CVT SHIFT SELECTOR

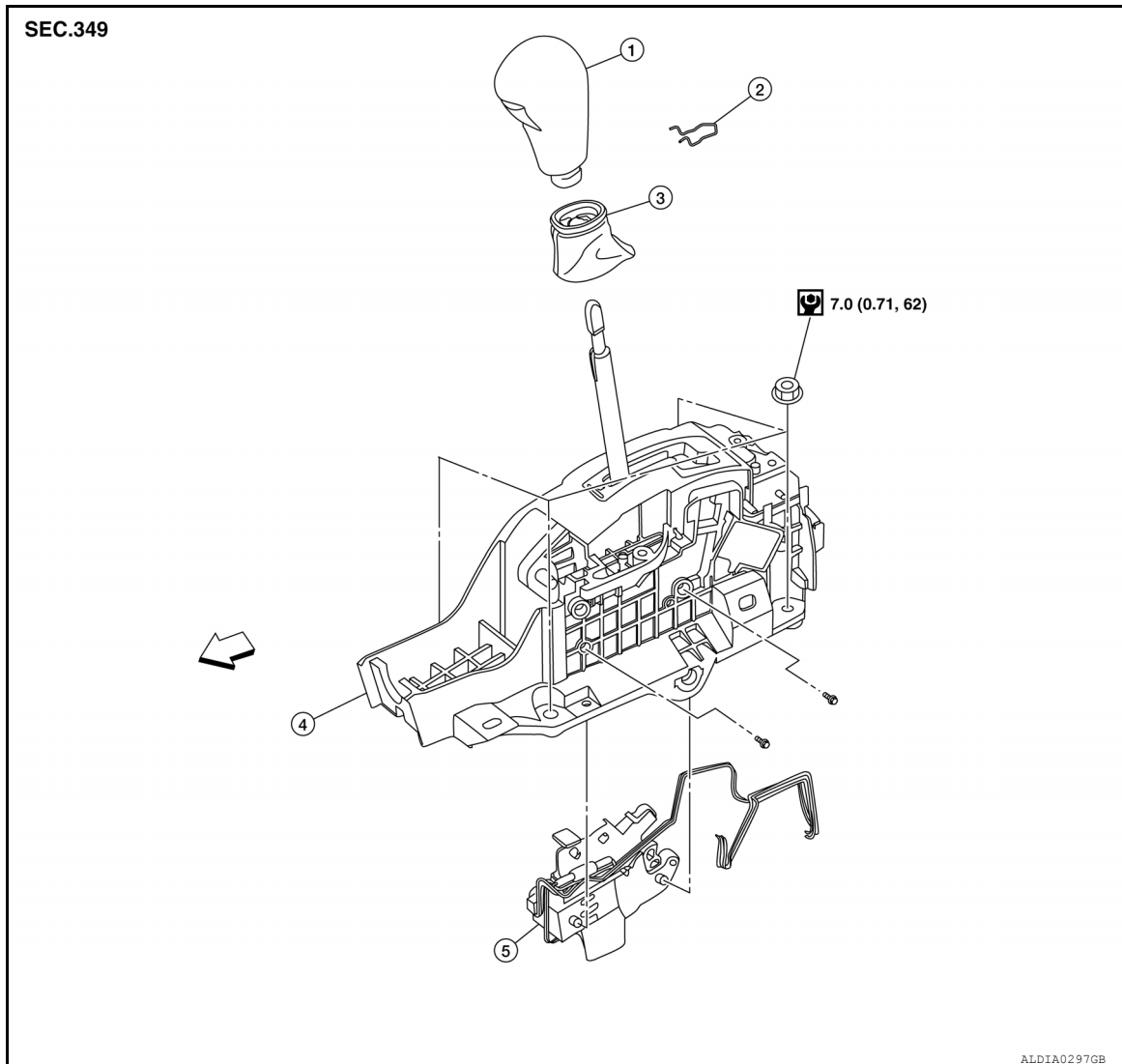
[CVT: RE0F09B]

< REMOVAL AND INSTALLATION >

CVT SHIFT SELECTOR

Exploded View

INFOID:000000007883154



- | | | |
|--------------------------------|-------------------------------|------------------------|
| 1. CVT shift selector handle | 2. Shift selector handle clip | 3. Shift selector boot |
| 4. CVT shift selector assembly | 5. Shift lock unit | ← Front |

Removal and Installation

INFOID:000000007883155

REMOVAL

1. Apply the parking brake.
CAUTION:
Make sure the vehicle cannot move with the parking brake applied.
2. Disconnect the battery negative terminal. Refer to [PG-92, "Exploded View"](#).

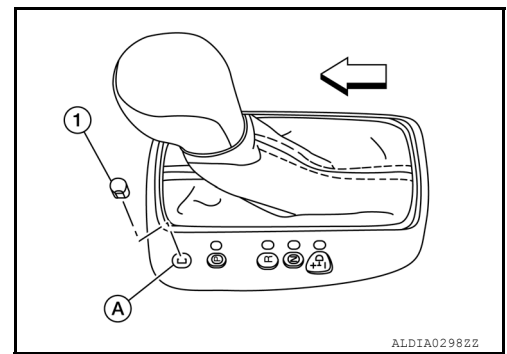
CVT SHIFT SELECTOR

[CVT: RE0F09B]

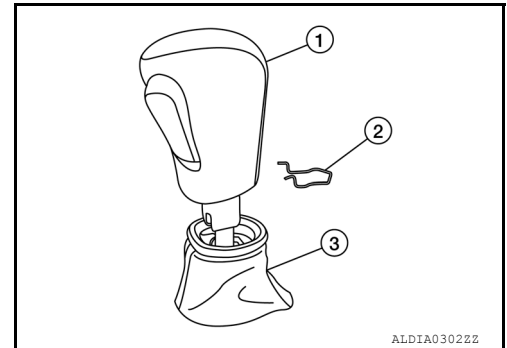
< REMOVAL AND INSTALLATION >

3. Remove shift lock override button cover (1) using suitable tool, and insert suitable tool into opening (A) to depress the shift lock override button. Move CVT shift selector to "N" position while depressing shift lock override button.

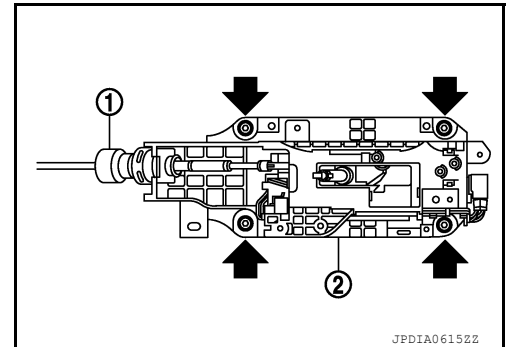
⇐ : Front



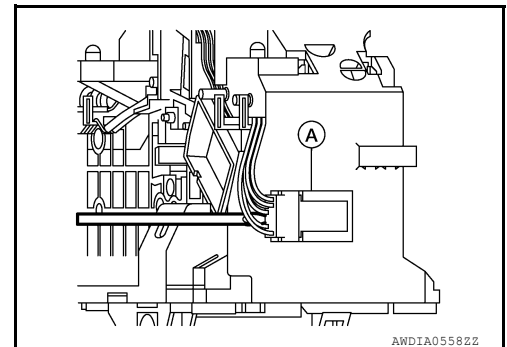
4. Slide shift selector boot (3) downward.
CAUTION:
Be careful not to damage shift selector boot.
5. Pull shift selector handle clip (2) out of CVT shift selector handle (1).
6. Remove CVT shift selector handle (1).



7. Remove center console assembly. Refer to [IP-15, "Removal and Installation"](#).
8. Depress shift lock override button and move CVT shift selector to "P" position.
9. Remove control cable (1) from CVT shift selector assembly (2).
10. Remove CVT shift selector assembly nuts (⇐), using suitable tool.



11. Disconnect CVT shift selector harness connector (A), using a suitable tool.



12. Remove CVT shift selector assembly from the vehicle.
13. Remove shift lock unit from CVT shift selector assembly.

INSTALLATION

Installation is in the reverse order of removal.

CVT SHIFT SELECTOR

[CVT: RE0F09B]

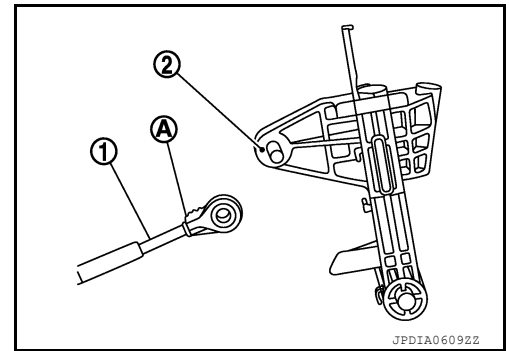
< REMOVAL AND INSTALLATION >

- When installing control cable (1) to CVT shift selector assembly (2), check that control cable is fully pressed in with the ribbed surface (A) facing upward.

NOTE:

Apply multi-purpose grease to control cable eye before assembly.

- Adjust control cable as necessary. Refer to [TM-173, "Inspection and Adjustment"](#).

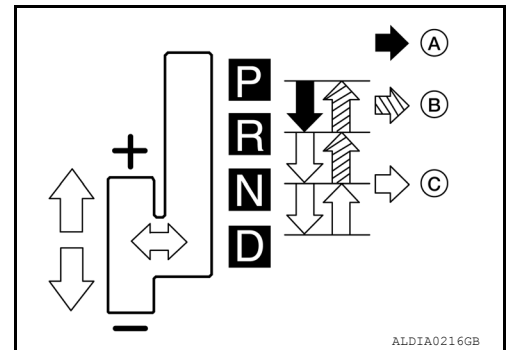


INFOID:000000007883156

Inspection and Adjustment

INSPECTION

- Move CVT shift selector to "P" position, and turn ignition switch ON (engine stop).
 - Check that CVT shift selector can be moved from "P" position when brake pedal is depressed. Also check that CVT shift selector can be moved from "P" position only when brake pedal is depressed.
 - Move CVT shift selector and check for excessive effort, sticking, noise or rattle.
 - Check that CVT shift selector stops at each position with the feel of engagement when it is moved through all the positions. Check that the actual position of CVT shift selector matches the position shown by shift position indicator and manual lever on the transaxle.
 - The method of operating CVT shift selector to individual positions correctly should be as shown.
 - (A): Press shift selector handle button to operate CVT shift selector, while depressing the brake pedal.
 - (B): Press shift selector handle button to operate CVT shift selector.
 - (C): CVT shift selector can be operated without pressing shift selector handle button.
 - When shift selector handle button is pressed in "P", "R", "N" or "D" position without applying forward/backward force to CVT shift selector, check shift selector handle button operation for sticking.
 - Check that back-up lamps illuminate only when CVT shift selector is placed in the "R" position.
 - Check that back-up lamps do not illuminate when CVT shift selector is pushed toward the "R" position when in the "P" or "N" position.
- CAUTION:**
Check the lighting without pressing shift button.
- Check that the engine can only be started with CVT shift selector in the "P" and "N" positions.
 - Check that transaxle is locked completely when CVT shift selector is in "P" position.
 - Check the operation of manual mode.
 - When CVT shift selector is set to manual shift gate, make sure manual mode is displayed on combination meter.
 - Shift CVT shift selector to "+" and "-" sides, and make sure set shift position changes.



ADJUSTMENT

- Apply the parking brake.

CAUTION:

Make sure the vehicle cannot move with the parking brake applied.

CVT SHIFT SELECTOR

[CVT: RE0F09B]

< REMOVAL AND INSTALLATION >

2. Loosen the control cable nut and place the manual lever in "P" position.
3. Place the CVT shift selector in "P" position.
4. Adjust control cable as follows.
 - From the transmission end push the control cable in with a load of 9.8 N (approximately 1 kg, 2.2 lb).
 - Release the cable and temporarily tighten the control cable nut.

NOTE:

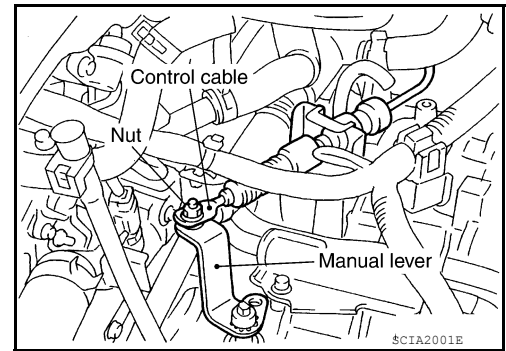
Do not move the manual lever. Make sure the manual lever stays in the "P" position.

5. Tighten the control cable nut to specified torque. Refer to [TM-175. "Exploded View"](#).

CAUTION:

Secure manual lever when tightening nut.

6. Check the operation of the CVT.



CONTROL CABLE

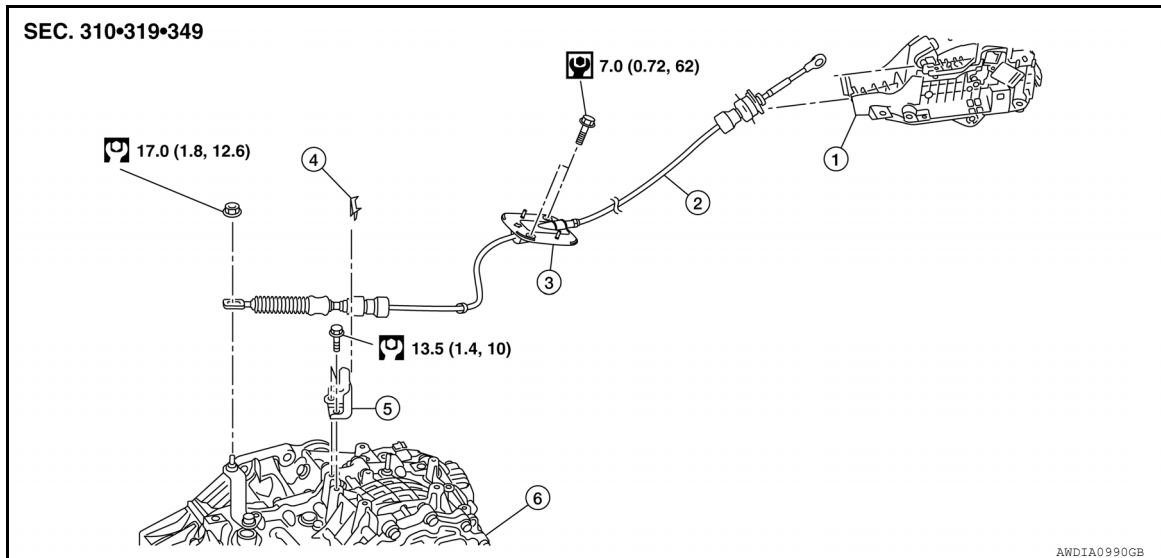
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

CONTROL CABLE

Exploded View

INFOID:000000007883157



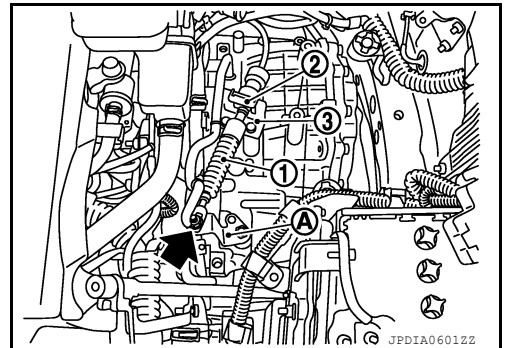
- | | | |
|--------------------------------|------------------|-----------------------|
| 1. CVT shift selector assembly | 2. Control cable | 3. Retainer grommet |
| 4. Lock plate | 5. Bracket | 6. Transaxle assembly |

Removal and Installation

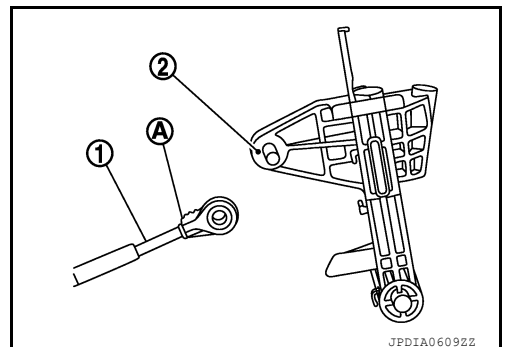
INFOID:000000007883158

REMOVAL

1. Apply the parking brake.
CAUTION:
Make sure the vehicle cannot move with the parking brake applied.
2. Remove air cleaner and air duct. Refer to [EM-24, "Removal and Installation"](#).
3. Remove control cable nut (←), using suitable tool.
4. Remove control cable (1) from manual lever (A).
5. Remove lock plate (2) from control cable (1).
6. Remove control cable (1) from bracket (3).



7. Remove center console. Refer to [IP-18, "Removal and Installation"](#).
8. Remove control cable (1) from CVT shift selector assembly (2).
 - (A): Ribbed surface



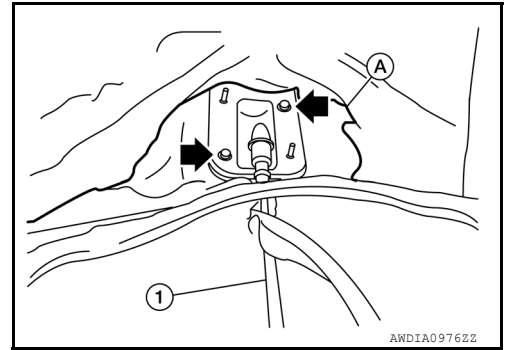
A
B
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L
M
N
O
P

CONTROL CABLE

< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

9. Pull back dash trim (A) and remove bolts (←), using suitable tool.
10. Remove the control cable (1) from the vehicle.



INSTALLATION

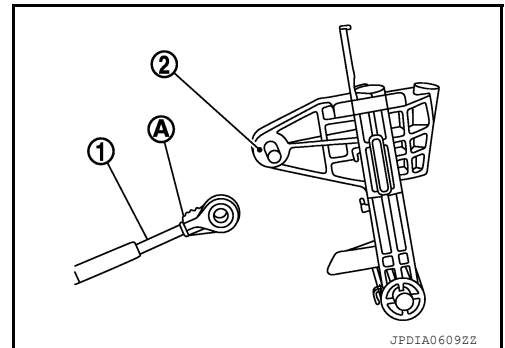
Installation is in the reverse order of removal.

- When installing control cable (1) to CVT shift selector assembly (2), make sure that control cable is fully pressed in with the ribbed surface (A) facing upward.

NOTE:

Apply multi-purpose grease to control cable before assembly.

- Adjust control cable as necessary. Refer to [TM-173, "Inspection and Adjustment"](#).



OIL PAN

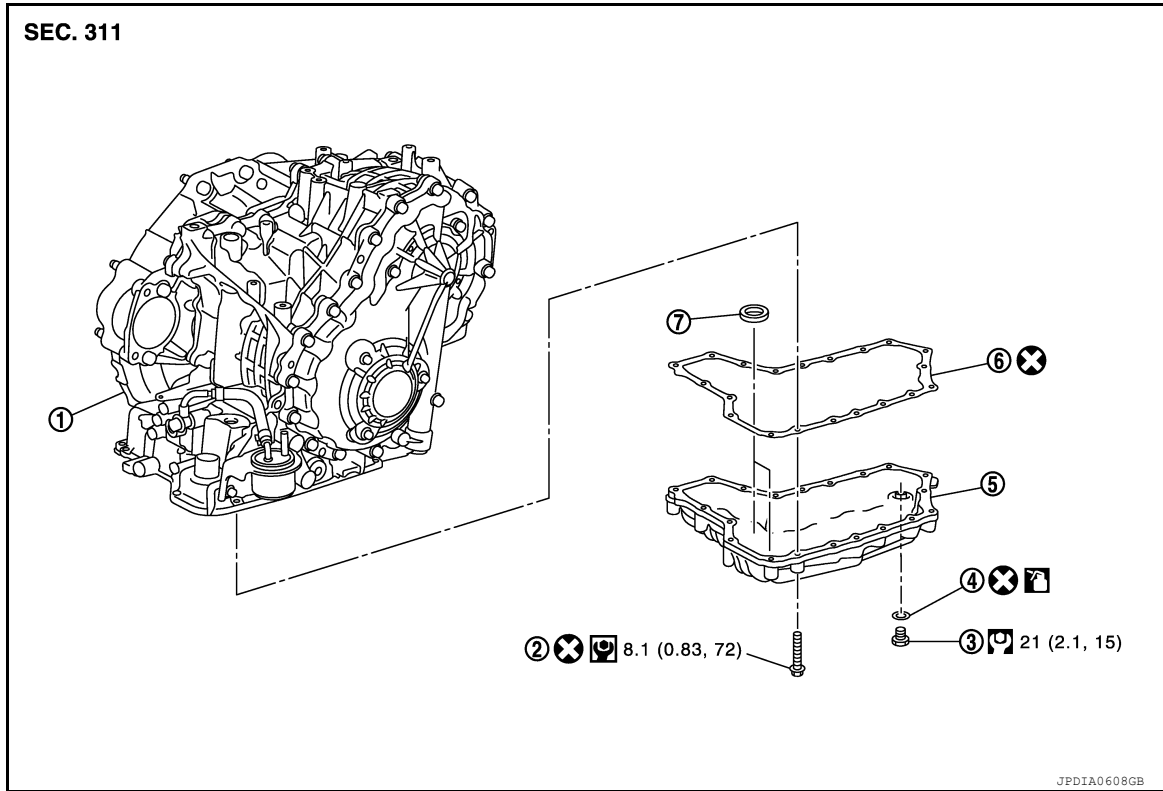
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

OIL PAN

Exploded View

INFOID:000000007883162



1. Transaxle assembly

2. Oil pan bolt

3. Drain plug

4. O-ring

5. Oil pan

6. Oil pan gasket

7. Magnet

⊗ : Always replace after every disassembly.

Ⓜ : N·m (kg-m, ft-lb)

Ⓜ : N·m (kg-m, in-lb)

🔧 : Apply CVT Fluid NS-3

Removal and Installation

INFOID:000000007883163

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

REMOVAL

1. Drain CVT fluid. Refer to [TM-165. "Changing"](#).
2. Remove O-ring from drain plug.

CAUTION:

Do not reuse O-ring.

OIL PAN

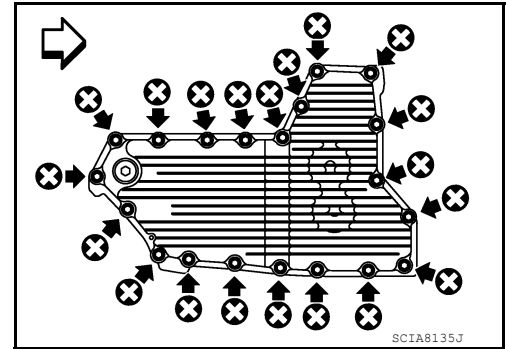
[CVT: RE0F09B]

< REMOVAL AND INSTALLATION >

3. Remove oil pan bolts (←), using suitable tool.

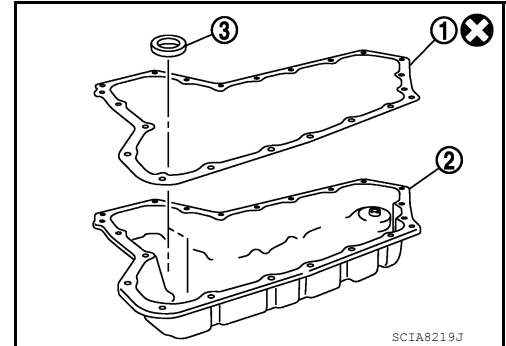
← : Front

4. Remove oil pan.



5. Remove oil pan gasket (1) from oil pan (2).

6. Remove magnet (3) from oil pan (2).



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- **Completely remove all moisture, oil and old gasket, etc. from the oil pan gasket mating surface of transaxle case and oil pan.**
- **Wipe magnet clean before installation.**
- **Do not reuse oil pan gasket and O-ring.**
- **Apply CVT fluid to O-ring.**
- Install the oil pan assembly to the transaxle case with the following procedure.
- Install the oil pan assembly to the transaxle case, and then temporarily tighten the oil pan bolts.

CAUTION:

Do not reuse oil pan bolts.

- Tighten the oil pan bolts in a criss-cross pattern to the specified torque.
- Tighten the oil pan bolts again clockwise to the specified torque.

Inspection

INFOID:000000007883164

Check foreign materials in oil pan to help determine causes of malfunction. If the CVT fluid is very dark, smells burned, or contains foreign particles, frictional material (clutches) may need replacement. A tacky film that will not wipe clean indicates varnish build up. Varnish can cause valves and clutches to stick and can inhibit pump pressure.

INSPECTION AFTER INSTALLATION

Check for CVT fluid leaks and check CVT fluid level. Refer to [TM-164, "Inspection"](#).

SECONDARY SPEED SENSOR

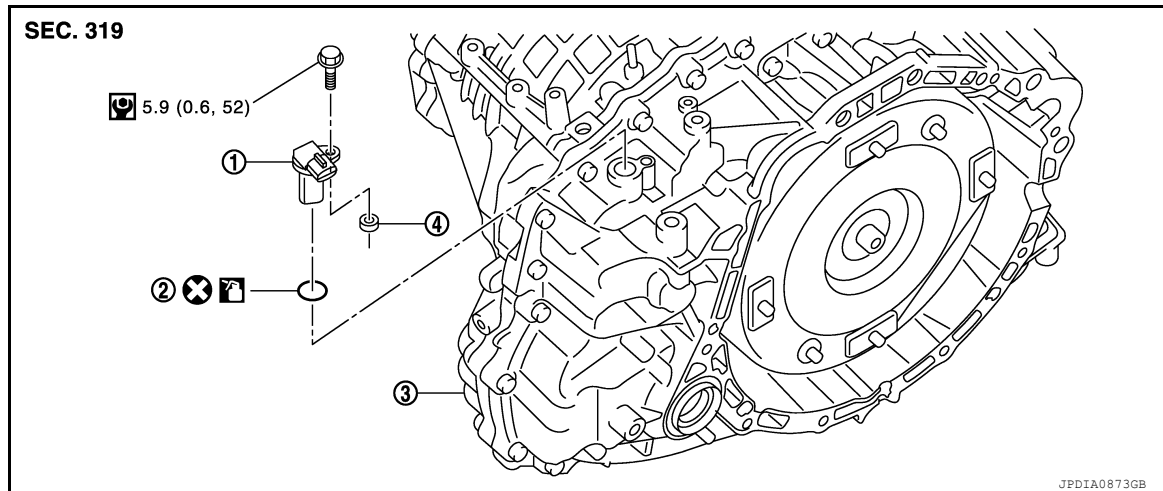
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

SECONDARY SPEED SENSOR

Exploded View

INFOID:000000007883168



A
B
C
TM

E
F
G

H
I

J
K

L
M

N
O

P

1. Secondary speed sensor
2. O-ring
3. Transaxle assembly
4. Shim

⊗ : Always replace after every disassembly.

Ⓒ : N·m (kg-m, in-lb)

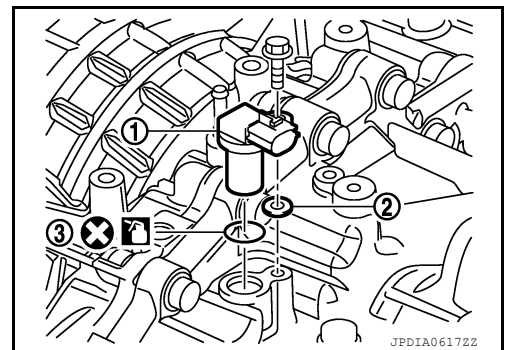
🔧 : Apply CVT Fluid NS-3

Removal and Installation

INFOID:000000007883169

REMOVAL

1. Disconnect the battery negative terminal. Refer to [PG-92, "Exploded View"](#).
2. Remove air cleaner and air duct. Refer to [EM-24, "Removal and Installation"](#).
3. Disconnect the harness connector from the secondary speed sensor.
4. Remove secondary speed sensor (1) and shim (2).
CAUTION:
Do not lose the shim.
5. Remove O-ring (3) from secondary speed sensor (1).
CAUTION:
Do not reuse O-ring.



INSTALLATION

Installation is in the reverse order of removal.

- CAUTION:**
- Do not reuse O-ring.
 - Apply CVT fluid to O-ring.

Inspection

INFOID:000000007883170

Check for CVT fluid leaks and check CVT fluid level. Refer to [TM-164, "Inspection"](#).

DIFFERENTIAL SIDE OIL SEAL

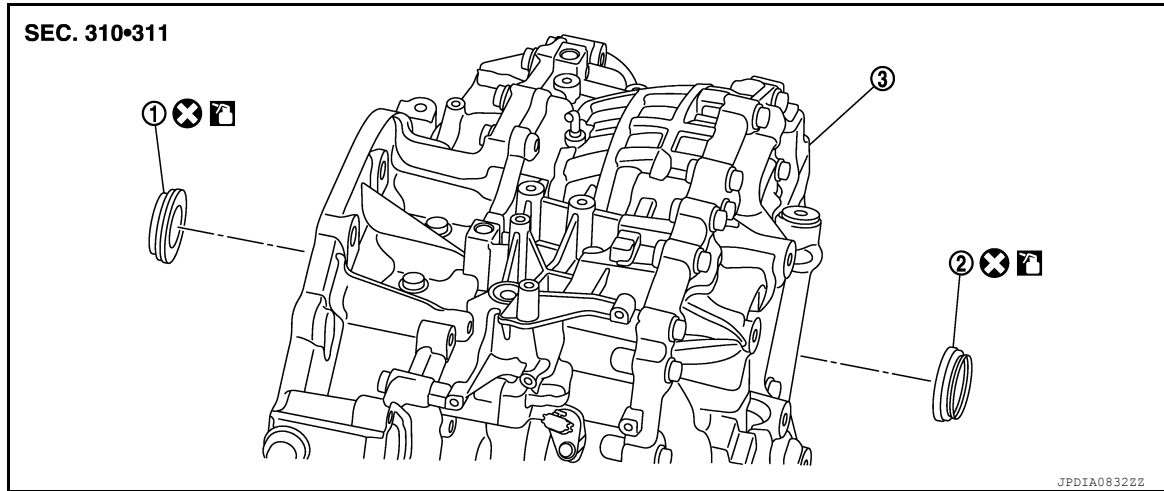
[CVT: RE0F09B]

< REMOVAL AND INSTALLATION >

DIFFERENTIAL SIDE OIL SEAL

Exploded View

INFOID:000000007883171



1. RH differential side oil seal 2. LH differential side oil seal 3. Transaxle assembly

⊗ : Always replace after every disassembly.

🖱 : Apply CVT Fluid NS-3

Removal and Installation

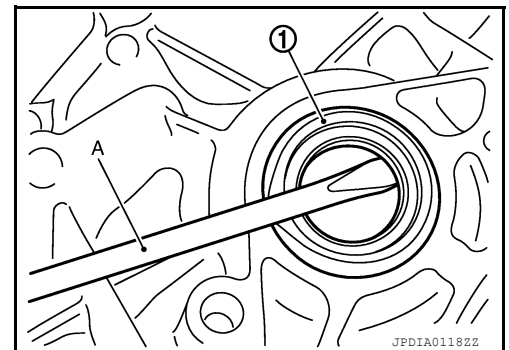
INFOID:000000007883172

REMOVAL

1. Remove front fender protector side cover (LH) or (RH) as necessary. Refer to [EXT-27, "FENDER PROTECTOR: Exploded View"](#).
2. Remove transfer assembly (RH only) (AWD models). Refer to [DLN-69, "Removal and Installation"](#).
3. Remove front drive shaft. Refer to [FAX-15, "Removal and Installation \(Left Side\)"](#) or [FAX-17, "Removal and Installation \(Right Side\)"](#).
4. Remove differential side oil seal (1), using suitable tool (A).

CAUTION:

Be careful not to scratch transaxle case and converter housing.



INSTALLATION

Installation is in the reverse order of removal.

- Install each differential side oil seal evenly using Tool so that differential side oil seal protrudes by the dimension (C) respectively.

CAUTION:

- Do not reuse differential side oil seals.
- Apply CVT fluid to differential side oil seals.

DIFFERENTIAL SIDE OIL SEAL

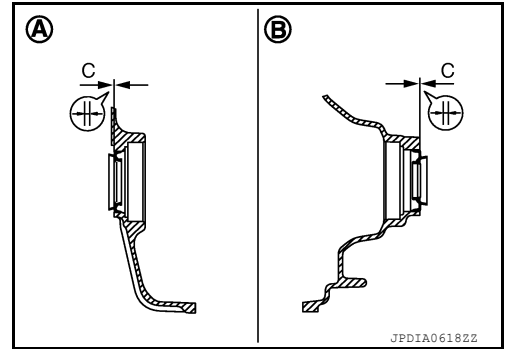
[CVT: RE0F09B]

< REMOVAL AND INSTALLATION >

- 2WD models

- (A) : Transaxle case side
- (B) : Converter housing side

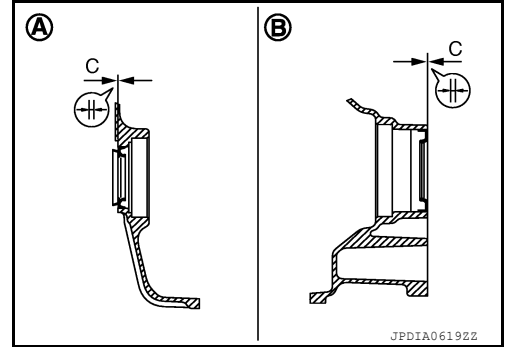
Dimension (C) : 0 ± 0.5 mm (0 ± 0.020 in)



- AWD models

- (A) : Transaxle case side
- (B) : Converter housing side

Dimension (C) : 0 ± 0.5 mm (0 ± 0.020 in)



Drift to be used:

Location	Tool number (Kent-Moore No.)
Transaxle case side	: — (J-47244)
Converter housing side (2WD models)	: ST33400001 (J-26082)
Converter housing side (AWD models)	: KV40100621 (J-25273)

Inspection

INFOID:000000007883173

Check for CVT fluid leaks and check CVT fluid level. Refer to [TM-164](#). "Inspection".

AIR BREATHER HOSE

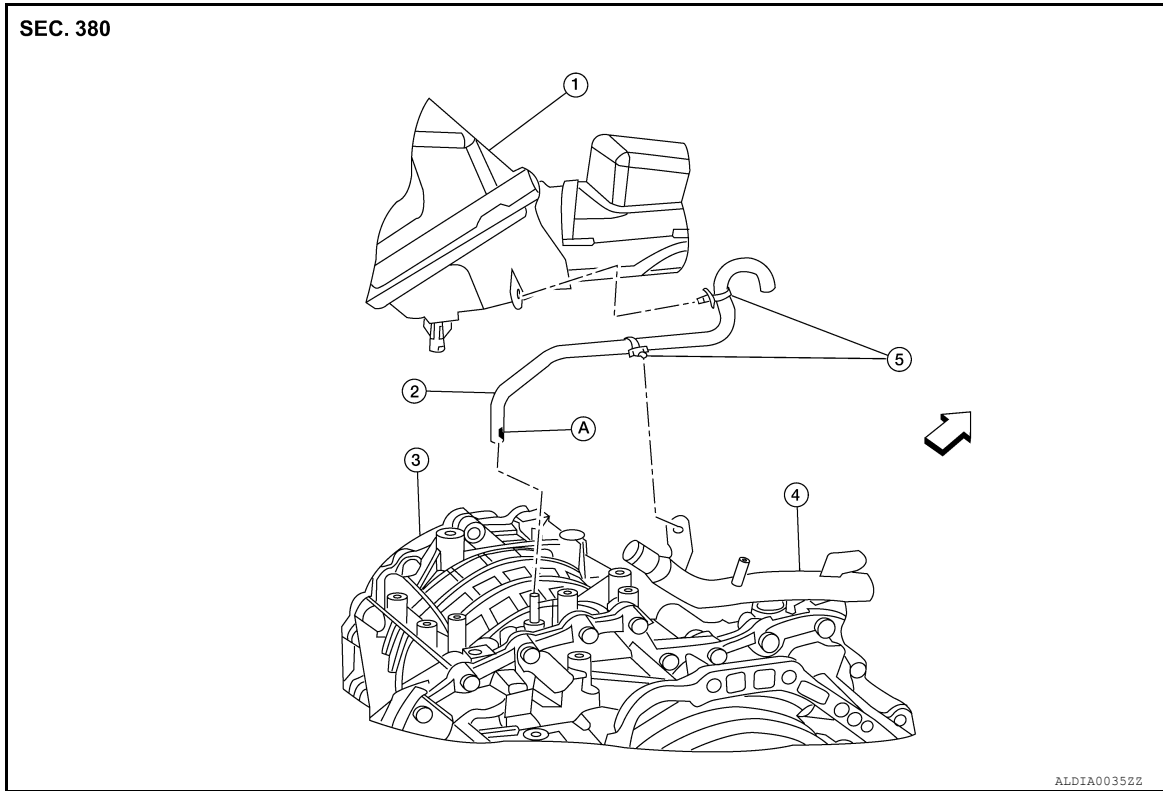
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

AIR BREATHER HOSE

Exploded View

INFOID:000000007883174



1. Air cleaner case

2. Air breather hose

3. Transaxle assembly

4. Heater pipe

5. Clip

A. Paint mark

← Front

Removal and Installation

INFOID:000000007883175

REMOVAL

1. Remove air cleaner and air duct. Refer to [EM-24, "Removal and Installation"](#).
2. Remove air breather hose from transaxle assembly.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- Install air breather hose with paint mark facing front.
- Insert air breather hose onto air breather tube until overlap area reaches the spool.
- Install air breather hose to heater pipe and air cleaner case by fully inserting the clip.
- Make sure there are no pinched or restricted areas on air breather hose caused by bending or winding when installing it.

CVT FLUID COOLER

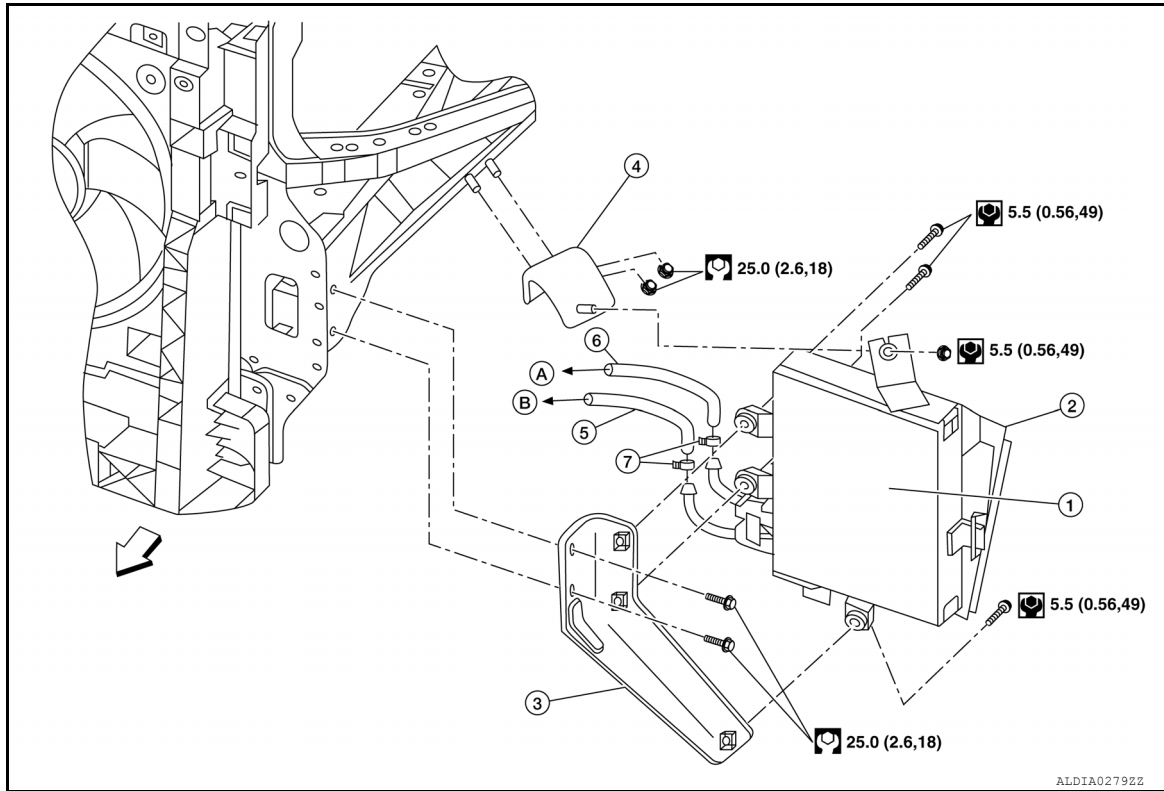
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

CVT FLUID COOLER

Exploded View

INFOID:000000008233710



- | | | |
|-----------------------|------------------------|------------------------|
| 1. CVT fluid cooler | 2. Air guide | 3. Oil cooler bracket |
| 4. Oil cooler bracket | 5. Cooler hose (lower) | 6. Cooler hose (upper) |
| 7. Clamp | A. To CVT fluid filter | B. From radiator |
| ↙ Front | | |

Removal and Installation

INFOID:000000008166370

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

REMOVAL

1. Remove front road wheel and tire (LH). Refer to [WT-52, "Adjustment"](#).
2. Remove fender protector side cover (LH). Refer to [EXT-27, "FENDER PROTECTOR : Exploded View"](#).
3. Loosen front of fender protector (LH). Refer to [EXT-27, "FENDER PROTECTOR : Exploded View"](#).
4. Remove cooler hose (upper) and cooler hose (lower) from CVT fluid cooler.
5. Remove nuts from oil cooler bracket and bolts from oil cooler bracket.
6. Remove CVT fluid cooler from vehicle.
7. Remove air guide if necessary.

INSTALLATION

Installation is in the reverse order of removal.

- After completing installation, check fluid level and check for fluid leaks. Refer to [TM-164, "Inspection"](#).

TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

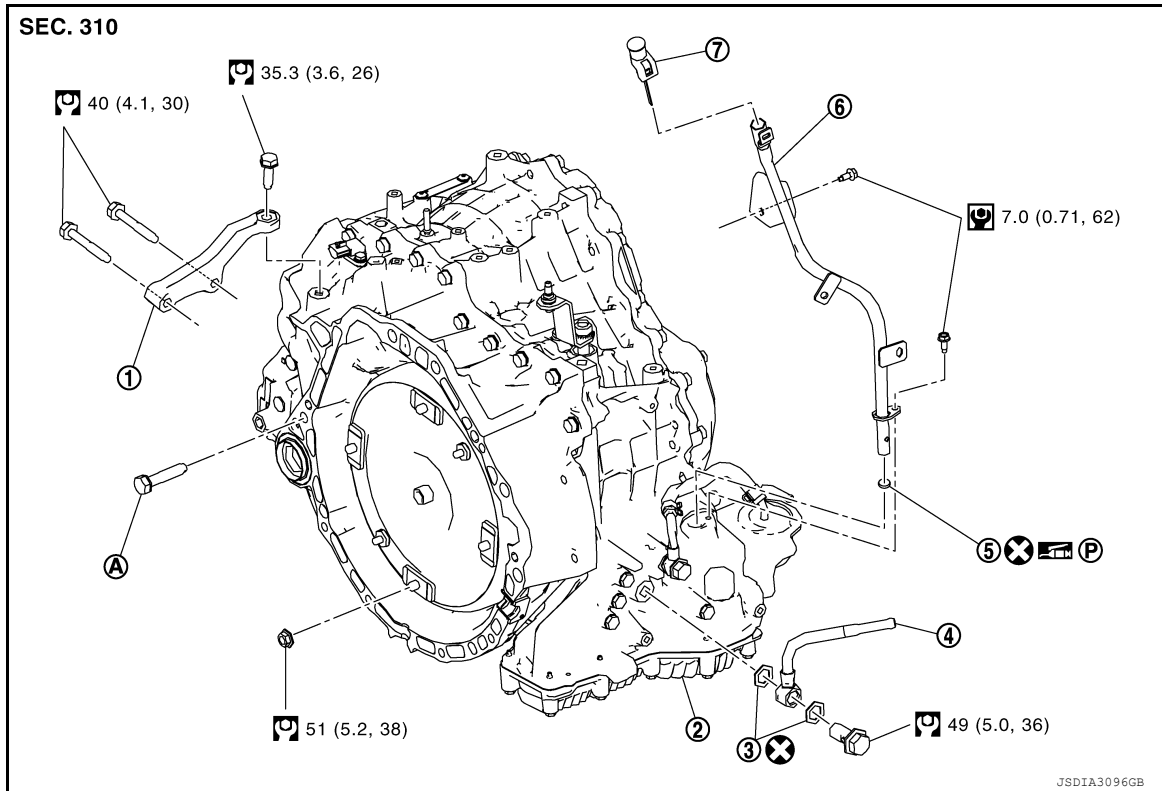
UNIT REMOVAL AND INSTALLATION

TRANSAXLE ASSEMBLY

Exploded View

INFOID:000000007883176

2WD Models



- | | | |
|---|-----------------------|----------------------------|
| 1. Gusset | 2. Transaxle assembly | 3. Copper washer |
| 4. CVT fluid cooler tube | 5. O-ring | 6. CVT fluid charging pipe |
| 7. CVT fluid level gauge | | |
| A. For tightening torque, refer to TM-185, "Removal and Installation" . | | |

: N·m (kg-m, ft-lb)

: N·m (kg-m, in-lb)

: Always replace after every disassembly.

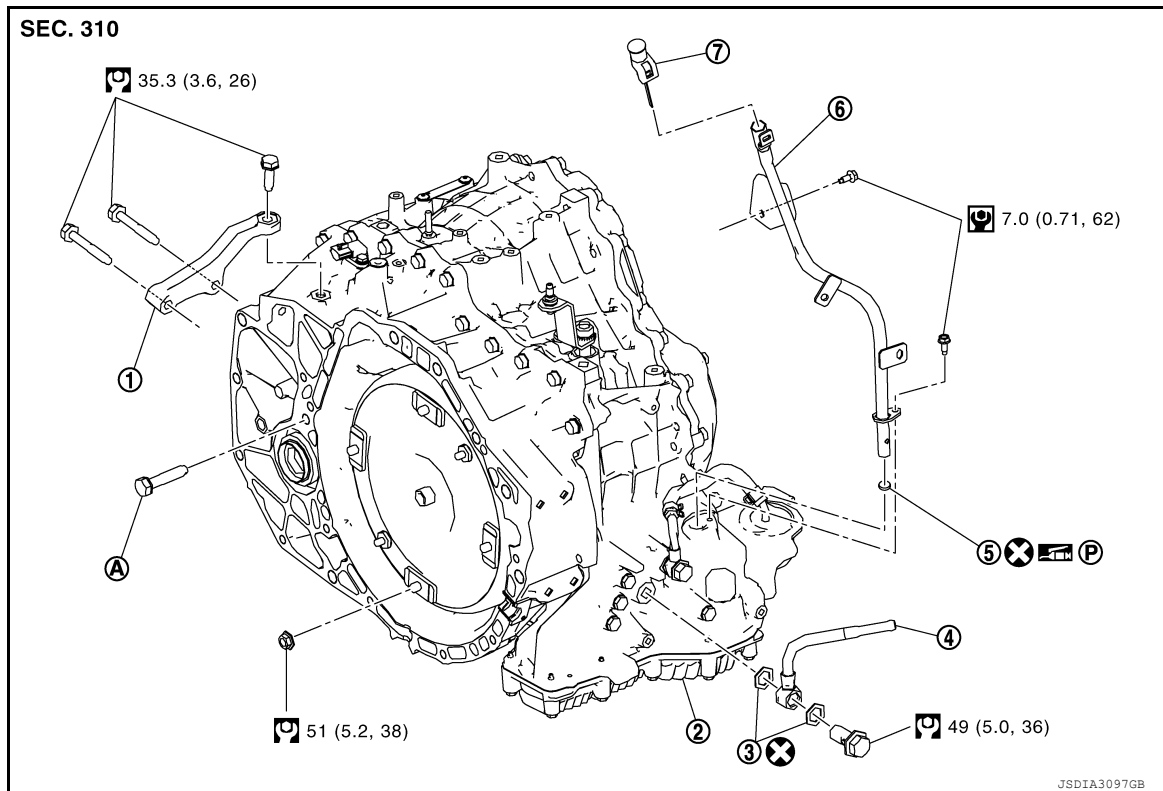
: Apply petroleum jelly.

TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

AWD Models



- | | | |
|---|-----------------------|----------------------------|
| 1. Gusset | 2. Transaxle assembly | 3. Copper washer |
| 4. CVT fluid cooler tube | 5. O-ring | 6. CVT fluid charging pipe |
| 7. CVT fluid level gauge | | |
| A. For tightening torque, refer to TM-185, "Removal and Installation" . | | |

: N·m (kg-m, ft-lb)

: N·m (kg-m, in-lb)

: Always replace after every disassembly.

: Apply petroleum jelly.

Removal and Installation

INFOID:000000007883177

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator.

CAUTION:

- Perform this step when the engine is cold.
- When replacing TCM and transaxle assembly as a set, replace transaxle assembly first and then replace TCM. Refer to [TM-76, "Description"](#).

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

REMOVAL

1. Remove the engine and transaxle with the front suspension member as a unit. Refer to [EM-102, "2WD : Removal and Installation"](#) (2WD), [EM-107, "AWD : Removal and Installation"](#) (AWD).
2. Separate the engine from the transaxle and remove from the front suspension member. Refer to [EM-102, "2WD : Removal and Installation"](#) (2WD), [EM-107, "AWD : Removal and Installation"](#) (AWD).
3. Remove LH driveshaft. Refer to [FAX-15, "Removal and Installation \(Left Side\)"](#).
4. Remove engine mounting insulator (front) nut. Refer to [EM-102, "2WD : Exploded View"](#) (2WD), [EM-106, "AWD : Exploded View"](#) (AWD).

TRANSAXLE ASSEMBLY

[CVT: RE0F09B]

< UNIT REMOVAL AND INSTALLATION >

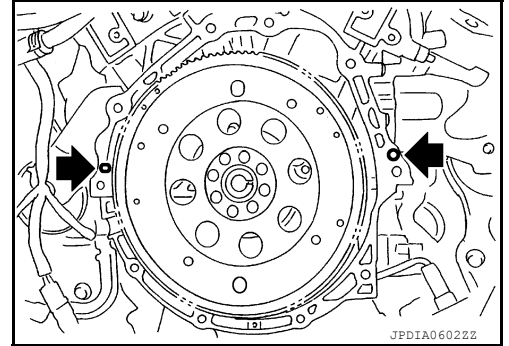
5. Remove engine mounting insulator (LH) bolts from the front suspension member. Refer to [EM-102. "2WD : Exploded View"](#) (2WD), [EM-106. "AWD : Exploded View"](#) (AWD).
6. Lift the transaxle from the front suspension member.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

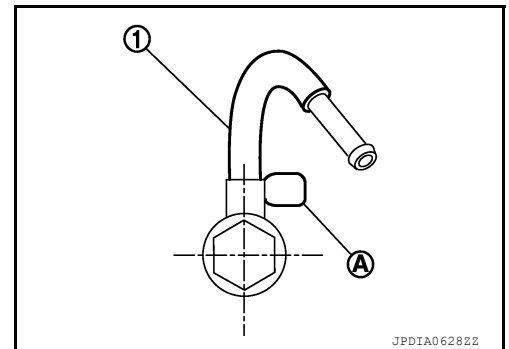
- Always replace side oil seals before installation of CVT. Refer to [TM-180. "Removal and Installation"](#).
- Check alignment of dowel pins (←) when installing transaxle assembly to engine assembly.



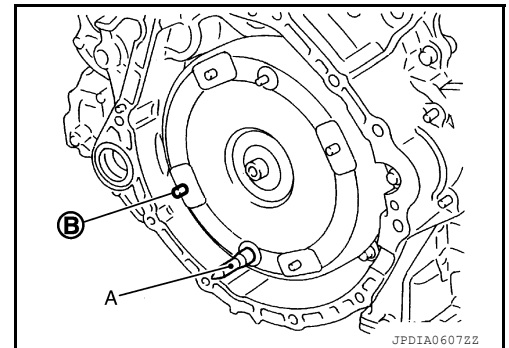
- When installing CVT fluid cooler tube (1) to transaxle assembly:
 - Contact CVT fluid cooler tube (1) with boss portion (A) of the transaxle case.
 - Tighten the bolt of CVT fluid cooler tube (1) without moving the CVT fluid cooler tube (1).

CAUTION:

Do not reuse copper sealing washers.



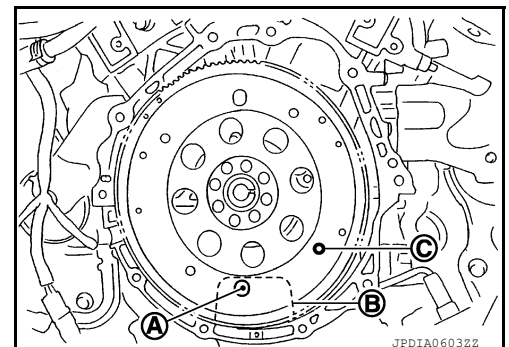
- Align the torque converter stud bolts (B) and drive plate holes.
 - When using a suitable tool (A), set it to the alignment stud bolt which is used to align the torque converter to the drive plate.
 - Rotate torque converter so that the alignment stud bolt aligns with the position of the service hole



- Rotate crankshaft so that the hole (A) for inserting alignment stud bolt of drive plate aligns with the service hole (B).
 - When not using suitable tool for alignment, insert stud bolt of torque converter into the hole (C) of drive plate, aligning the drive plate hole position and torque converter stud bolts.

CAUTION:

Be careful not to strike the drive plate when installing the torque converter stud bolt.



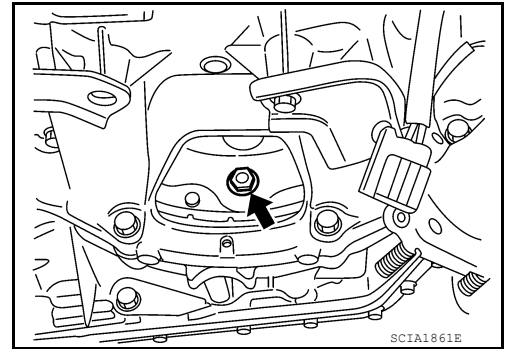
TRANSAXLE ASSEMBLY

[CVT: RE0F09B]

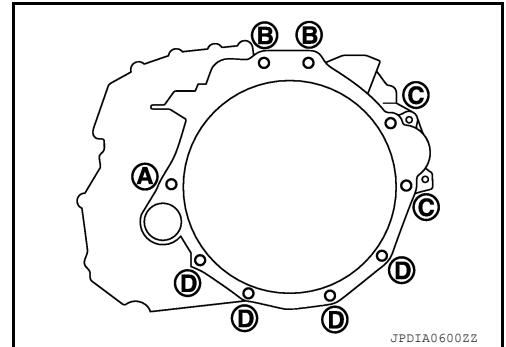
< UNIT REMOVAL AND INSTALLATION >

- When installing the torque converter nuts (←) temporarily tighten the nuts. Then, after installing the engine and transaxle assembly bolts tighten the nuts to the specified torque.

Torque converter nuts : 51 N·m (5.2 kg-m, 38 ft-lb)



- When installing transaxle assembly to the engine assembly, install the bolts in accordance with the following.



Insertion direction	Engine assembly to transaxle assembly	Transaxle assembly to engine assembly		Engine assembly to transaxle assembly
Bolt position	A	B	C	D
Number of bolts	1	2	2	4
Bolt length mm (in)	55 (2.17)	39 (1.54)	108 (4.25)	45 (1.77)
Tightening torque N·m (kg-m, ft-lb)	74.5 (7.6, 55)			50 (5.1, 37)

CAUTION:

- When turning crankshaft, turn it clockwise as viewed from the front of the engine.
- When tightening the nuts for the torque converter after installing the crankshaft pulley bolts, confirm the tightening torque of the crankshaft pulley bolts. Refer to [EM-54, "Exploded View"](#).
- Rotate crankshaft several turns and check that transaxle rotates freely without binding after converter is installed to drive plate.

Inspection and Adjustment

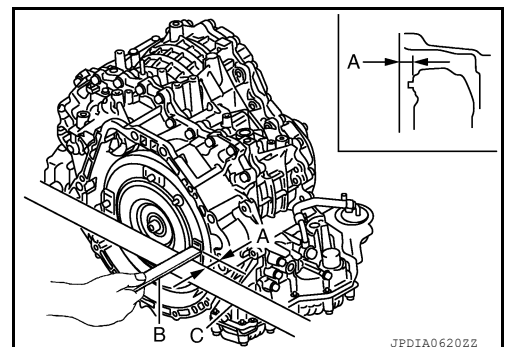
INFOID:000000007883178

INSPECTION BEFORE INSTALLATION

After inserting a torque converter to transaxle assembly, check that dimension (A) is within the reference value limit.

- B : Scale
- C : Straightedge

Dimension A : Refer to [TM-192, "Torque Converter"](#).



INSPECTION AFTER INSTALLATION

Check the following.

- Check for CVT fluid leakage and check CVT fluid level. Refer to [TM-164, "Inspection"](#).
- Check CVT position. Refer to [TM-85, "Inspection and Adjustment"](#).

TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

- Start and warm up the engine. Visually check that there is no leakage of engine coolant and CVT fluid.

ADJUSTMENT AFTER INSTALLATION

Perform "ADDITIONAL SERVICE WHEN REPLACE TRANSAXLE ASSEMBLY". Refer to [TM-77, "Description"](#).

TORQUE CONVERTER

< UNIT DISASSEMBLY AND ASSEMBLY >

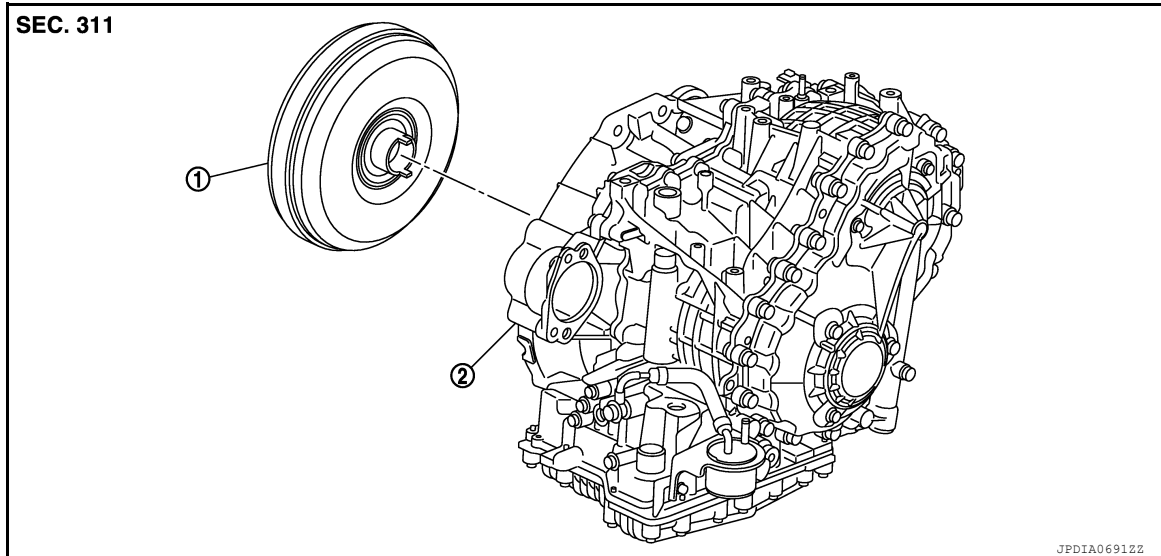
[CVT: RE0F09B]

UNIT DISASSEMBLY AND ASSEMBLY

TORQUE CONVERTER

Exploded View

INFOID:000000007883179



1. Torque converter

2. Transaxle assembly

Disassembly

INFOID:000000007883180

1. Remove transaxle assembly. Refer to [TM-185, "Removal and Installation"](#).
2. Remove torque converter from transaxle assembly.

Assembly

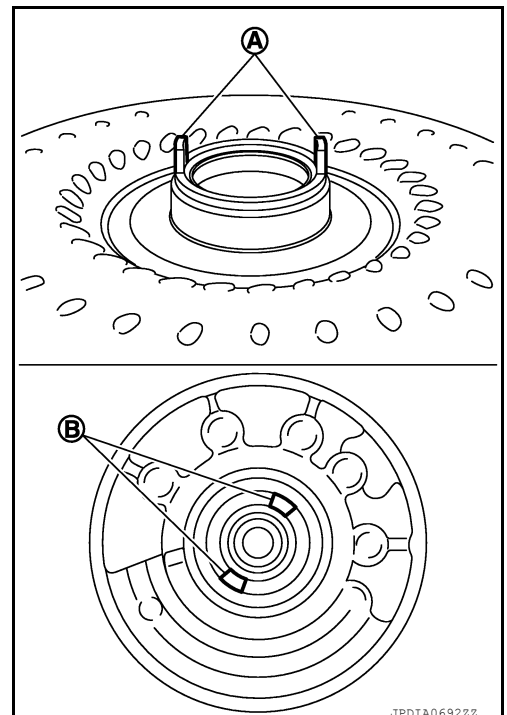
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Installation is in the reverse order of removal.

- Attach the pawl (A) of the torque converter to the inner gear hole (B) on the oil pump side.

CAUTION:

Rotate the torque converter for installing torque converter.



TORQUE CONVERTER

< UNIT DISASSEMBLY AND ASSEMBLY >

[CVT: RE0F09B]

Inspection

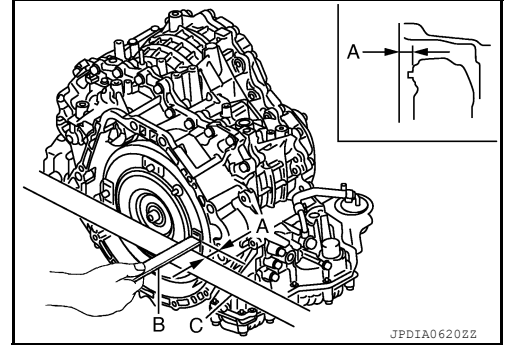
INFOID:000000007883182

INSPECTION AFTER INSTALLATION

After inserting a torque converter to transaxle assembly, check dimension (A) is within the reference value limit.

- B : Scale
- C : Straightedge

Dimension A : Refer to [TM-192, "Torque Converter"](#).



SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[CVT: RE0F09B]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specification

INFOID:000000007883183

Applied model		VQ35DE	
		2WD	AWD
CVT model		RE0F09B	
CVT assembly	Model code number	1XE1B	1XE1C
Transmission gear ratio	D range	2.371 – 0.439	
	Reverse	1.766	
	Final drive	5.173	
Recommended fluid		Genuine NISSAN CVT Fluid NS-3*1	
Fluid capacity liter (US qt, Imp qt)		10.2 (10-3/4, 9)*2	

CAUTION:

- Use only Genuine NISSAN CVT Fluid NS-3. Never mix with other fluid.
- Using CVT fluid other than Genuine NISSAN CVT Fluid NS-3 will deteriorate in driveability and CVT durability, and may damage the CVT, which is not covered by the NISSAN new vehicle limited warranty.

*1: Refer to [MA-11, "Fluids and Lubricants"](#).

*2: The fluid capacity is the reference value. Check the fluid level with CVT fluid level gauge.

Shift Characteristics

INFOID:000000007883184

Numerical value data are reference values.

Unit: rpm

Throttle position	Shift pattern (Infiniti drive mode selector)	Engine speed	
		At 40 km/h (25 MPH)	At 60 km/h (37 MPH)
8/8	"D" position (STANDARD)	3,200 – 4,100	4,400 – 5,300
	"D" position (ECO)	3,200 – 4,100	4,400 – 5,300
	"D" position (SPORT)	3,000 – 4,000	4,000 – 5,800
2/8	"D" position (STANDARD)	900 – 1,800	1,000 – 1,900
	"D" position (ECO)	900 – 1,800	1,000 – 1,900
	"D" position (SPORT)	1,700 – 3,700	1,900 – 3,800

CAUTION:

Lock-up clutch is engaged when vehicle speed is approximately 18 km/h (11 MPH) to 90 km/h (56 MPH).

Stall Speed

INFOID:000000007883185

Stall speed	2,700 – 3,250 rpm
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Line Pressure

INFOID:000000007883186

Unit: kPa (kg/cm², psi)

Engine speed	Line pressure
	"R" and "D" positions
At idle	700 (7.13, 101.5)
At stall	5,700 (58.14, 826.5)

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[CVT: RE0F09B]

Torque Converter

INFOID:000000007883192

Dimension between end of converter housing and torque converter	14.0 mm (0.55 in)
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