

TM

SECTION

TRANSAXLE & TRANSMISSION

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TM

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PRECAUTION

PRECAUTIONS

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

INFOID:000000011573894

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. 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

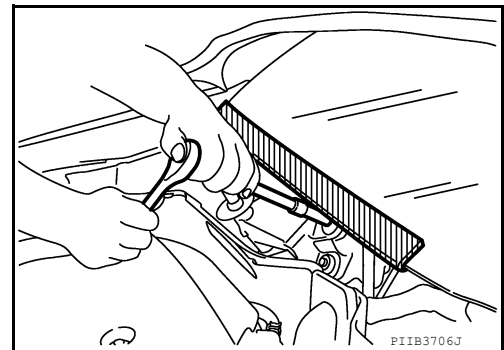
WARNING:

- 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 three minutes before performing any service.

Precaution for Procedure without Cowl Top Cover

INFOID:000000011220225

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 TCM and Transaxle Assembly Replacement

INFOID:000000011220226

CAUTION:

- To replace TCM, refer to [TM-79, "Description"](#).
- To replace transaxle assembly, refer to [TM-80, "Description"](#).

PRECAUTIONS

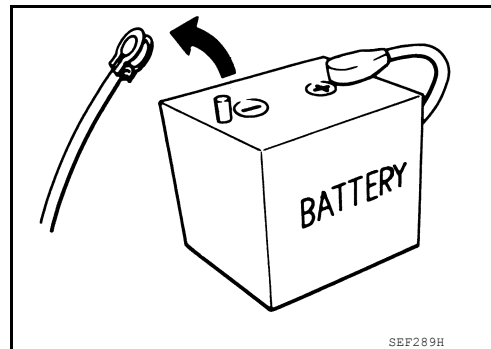
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[CVT: RE0F10J]

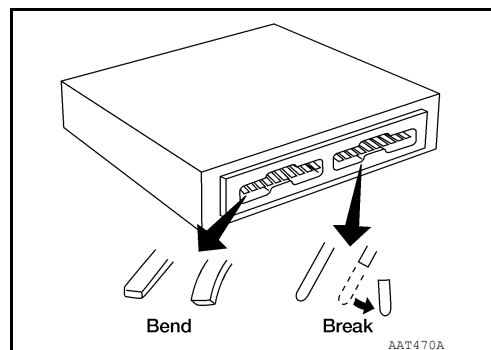
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General Precautions

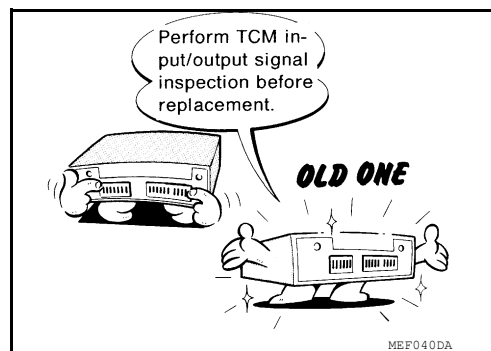
- Turn ignition switch OFF and disconnect the battery cable from the negative terminal before connecting or disconnecting the CVT assembly harness connector. Because battery voltage is applied to TCM even if ignition switch is turned OFF.



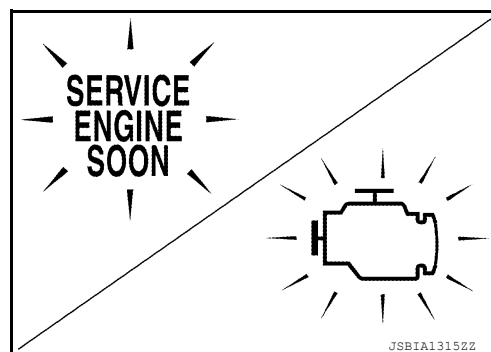
- When connecting or disconnecting pin connectors into or from TCM, do not damage pin terminals (bend or break). Check that there are not any bends or breaks on TCM pin terminal, when connecting pin connectors.



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



- Perform "DTC (Diagnostic Trouble Code) CONFIRMATION PROCEDURE". If the repair is completed 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.

On Board Diagnosis (OBD) System of CVT and Engine

INFOID:0000000011220228

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

PRECAUTIONS

< PRECAUTION >

[CVT: RE0F10J]

CAUTION:

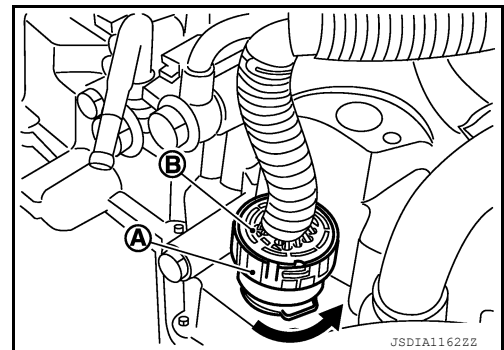
- Be sure to turn the ignition switch OFF and disconnect the battery cable from the negative terminal before any repair or inspection work. The open/short circuit of related switches, sensors, solenoid valves, etc. will cause the MIL to light up.
- Be sure to connect and lock the connectors securely 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 EGR 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.

Removal and Installation Procedure for CVT Unit Connector

INFOID:000000011220229

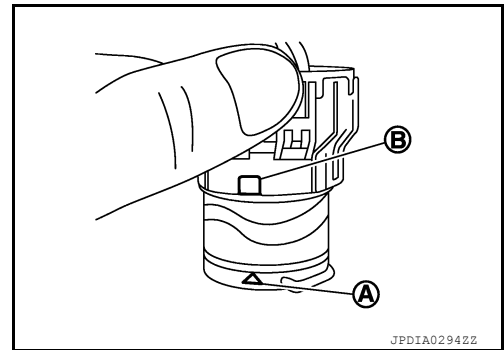
REMOVAL

- Rotate bayonet ring (1) counterclockwise. Pull out CVT unit harness connector (2) upward and remove it.

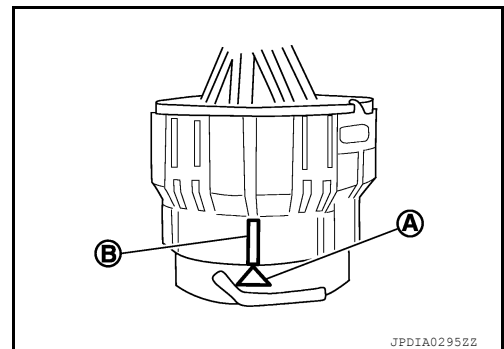


INSTALLATION

1. Align marking (A) on CVT unit harness connector terminal with marking (B) on bayonet ring. Insert CVT unit harness connector.
2. Rotate bayonet ring clockwise.



3. Rotate bayonet ring clockwise until marking (A) on CVT unit harness connector terminal body is aligned with the slit (B) on bayonet ring as shown in the figure (correctly fitting condition).



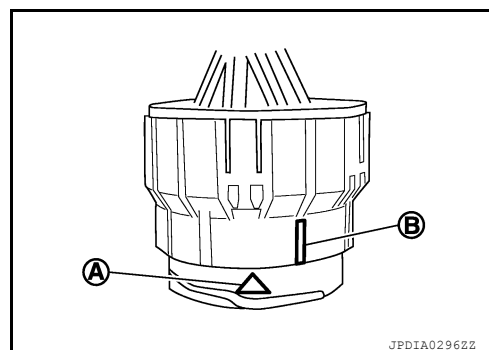
CAUTION:

PRECAUTIONS

< PRECAUTION >

[CVT: RE0F10J]

- Securely align marking (A) on CVT unit harness connector terminal body with bayonet ring slit (B). 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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PREPARATION

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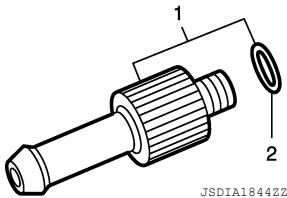
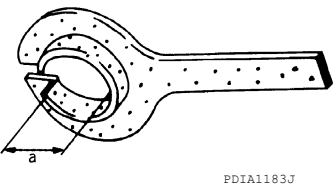
PREPARATION

PREPARATION

Special Service Tools

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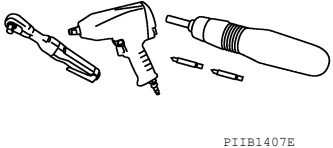
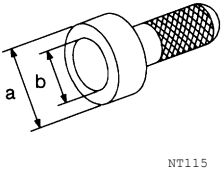
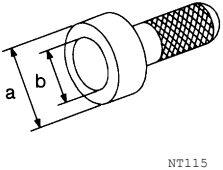
The actual shape of the tools may differ from those illustrated here.

Tool number (TechMate No.) Tool name	Description
1. KV311039S0 (—) Charging pipe set 2. KV31103920* (—) O-ring	CVT fluid changing and adjustment
	
KV38107900 (—) Protector	Installing drive shaft a: 32 mm (1.26 in) dia.
	

*: The O-ring as a unit part is set as a SST.

Commercial Service Tools

INFOID:0000000011220231

Tool name	Description
Power tool	Loosening nuts, screws and bolts
	
Drift	Installing differential side oil seal a: 56 mm (2.20 in) dia. b: 50 mm (1.97 in) dia.
	
Drift	Installing converter housing oil seal a: 65 mm (2.56 in) dia. b: 60 mm (2.36 in) dia.
	

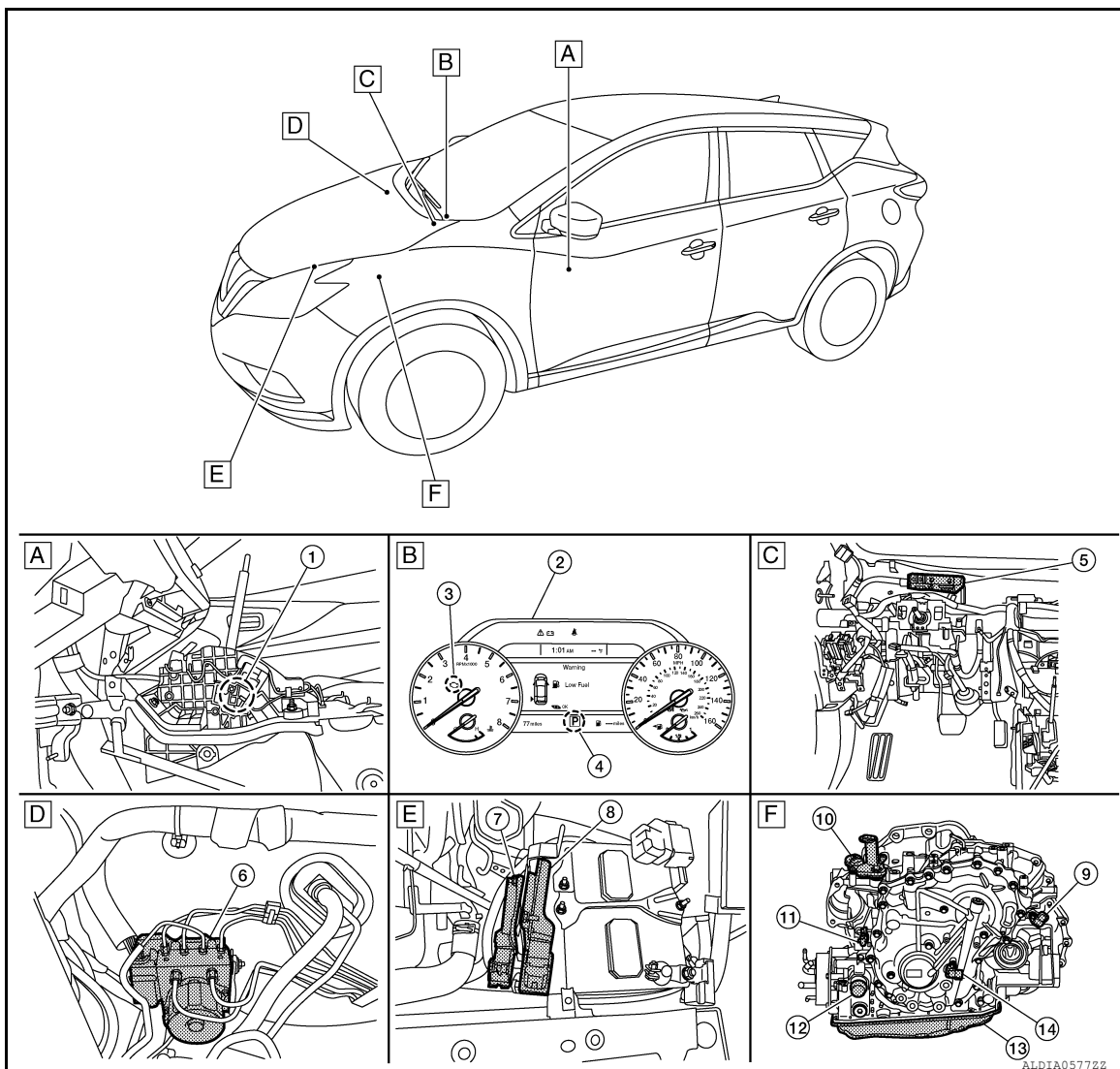
SYSTEM DESCRIPTION

COMPONENT PARTS

CVT CONTROL SYSTEM

CVT CONTROL SYSTEM : Component Parts Location

INFOID:000000011220232



A CVT shift selector assembly

B Combination meter

C Behind of combination meter

D Engine room (RH side)

E Engine room (LH side)

F Transaxle assembly

COMPONENT DESCRIPTION

COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

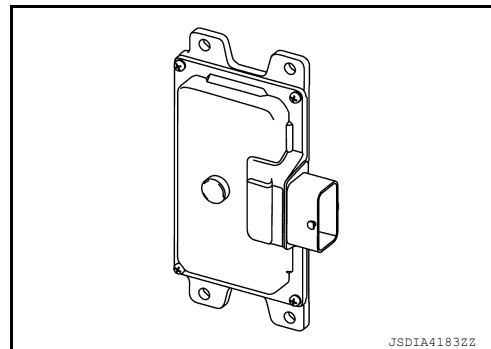
No.	Component		Function
①	Manual mode switch		TM-18, "CVT CONTROL SYSTEM : Manual Mode Switch"
②	Combination meter		Mainly transmits the following signal to TCM via CAN communication • Manual mode signal • Non-manual mode signal • Manual mode shift up signal • Manual mode shift down signal Mainly receives the following signals from TCM via CAN communication. • Shift position signal Refer to MWI-5, "METER SYSTEM : Component Parts Location" for detailed installation location.
③	Malfunction indicator lamp (MIL)		TM-18, "CVT CONTROL SYSTEM : Malfunction Indicator Lamp (MIL)"
④	Shift position indicator		TM-18, "CVT CONTROL SYSTEM : Shift Position Indicator"
⑤	BCM (view with combination meter removed)		Mainly transmits the following signal to TCM via CAN communication • Stop lamp switch signal Refer to BCS-4, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
⑥	ABS actuator and electronic unit (control unit)		Mainly transmits the following signal to TCM via CAN communication • Vehicle speed signal • ABS operation signal • TCS operation signal • VDC operation signal Refer to BRC-10, "Component Parts Location" for detailed installation location.
⑦	TCM		TM-13, "CVT CONTROL SYSTEM : TCM"
⑧	ECM		Mainly transmits the following signal to TCM via CAN communication. • Engine and CVT integrated control signal NOTE: General term for the communication (torque-down permission, torque down request, etc.) exchanged between the ECM and TCM. • Engine speed signal • Engine coolant temperature signal • Accelerator pedal position signal • Closed throttle position signal Mainly receives the following signals from TCM via CAN communication. • Malfunction indicator lamp signal Refer to EC-15, "ENGINE CONTROL SYSTEM : Component Parts Location" for detailed installation location.
⑨	Output speed sensor		TM-15, "CVT CONTROL SYSTEM : Output Speed Sensor"
⑩	Transmission range switch		TM-13, "CVT CONTROL SYSTEM : Transmission Range Switch"
⑪	Input speed sensor		TM-13, "CVT CONTROL SYSTEM : Input Speed Sensor"
⑫	CVT unit connector		—
⑬	Control valve	CVT fluid temperature sensor*	TM-15, "CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor"
		Primary pressure sensor*	TM-16, "CVT CONTROL SYSTEM : Primary Pressure Sensor"
		Secondary pressure sensor*	TM-16, "CVT CONTROL SYSTEM : Secondary Pressure Sensor"
		Line pressure solenoid valve*	TM-16, "CVT CONTROL SYSTEM : Line Pressure Solenoid Valve"
		Primary pressure solenoid valve*	TM-17, "CVT CONTROL SYSTEM : Primary Pressure Solenoid Valve"
		Secondary pressure solenoid valve*	TM-17, "CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve"
		Torque converter clutch solenoid valve*	TM-17, "CVT CONTROL SYSTEM : Torque Converter Clutch Solenoid Valve"
		Select solenoid valve*	TM-18, "CVT CONTROL SYSTEM : Select Solenoid Valve"
⑭	Primary speed sensor		TM-14, "CVT CONTROL SYSTEM : Primary Speed Sensor"

*: These components are included in control valve assembly.

CVT CONTROL SYSTEM : TCM

INFOID:0000000011220233

- The TCM consists of a microcomputer and connectors for signal input and output and for power supply.
- The vehicle driving status is judged based on the signals from the sensors, switches, and other control units, and the optimal transaxle control is performed.
- For TCM control items, refer to [TM-28, "CVT CONTROL SYSTEM : System Description"](#).

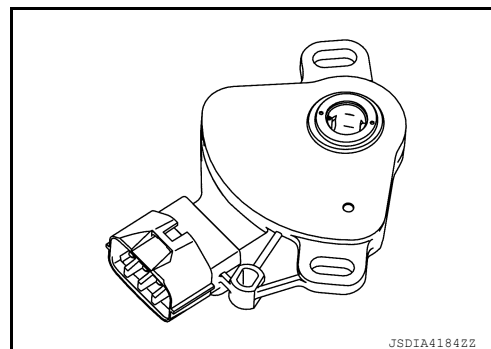


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CVT CONTROL SYSTEM : Transmission Range Switch

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- The transmission range switch is installed to upper part of transaxle case.
- The transmission range switch detects the selector lever position.

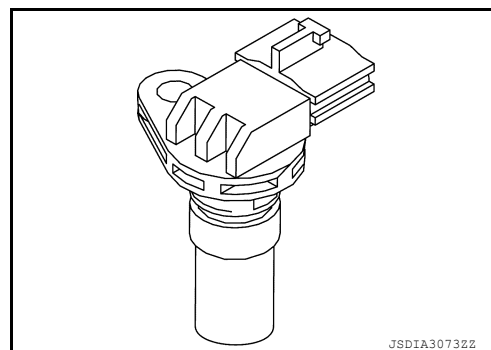


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CVT CONTROL SYSTEM : Input Speed Sensor

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- The input speed sensor is installed to the front side of transaxle case.
- The input speed sensor detects input shaft speed.



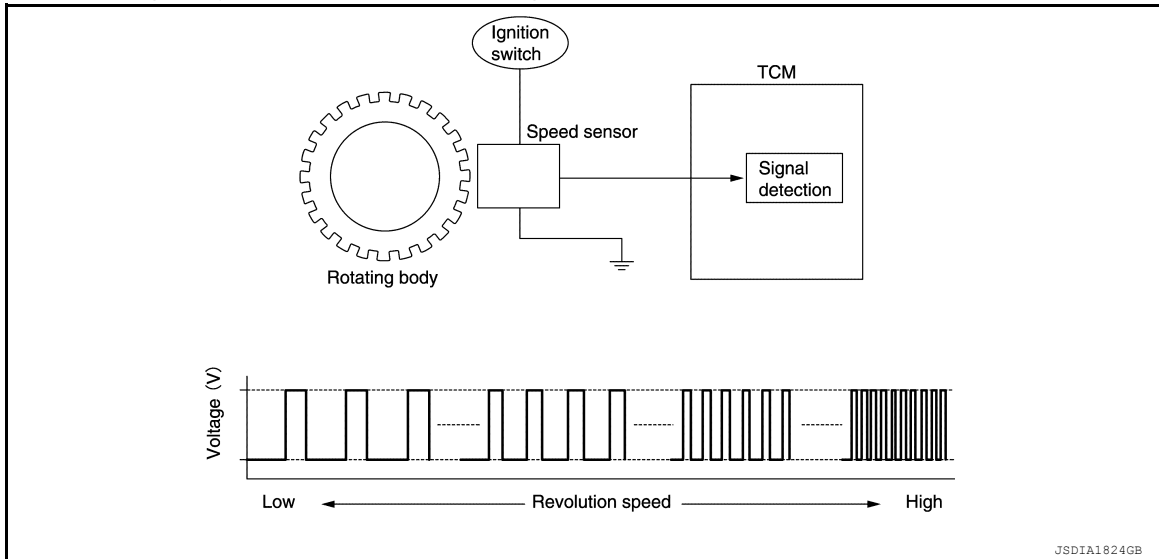
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COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

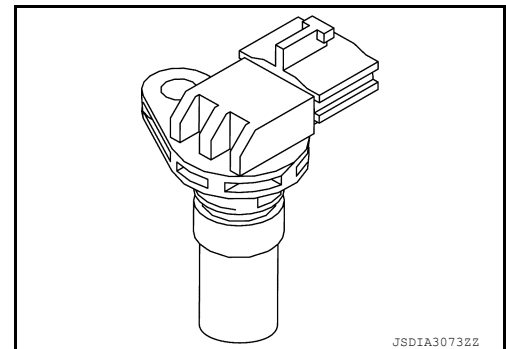
- The input speed sensor generates an ON-OFF pulse signal according to the rotating body speed. TCM judges the rotating body speed from the pulse signal.



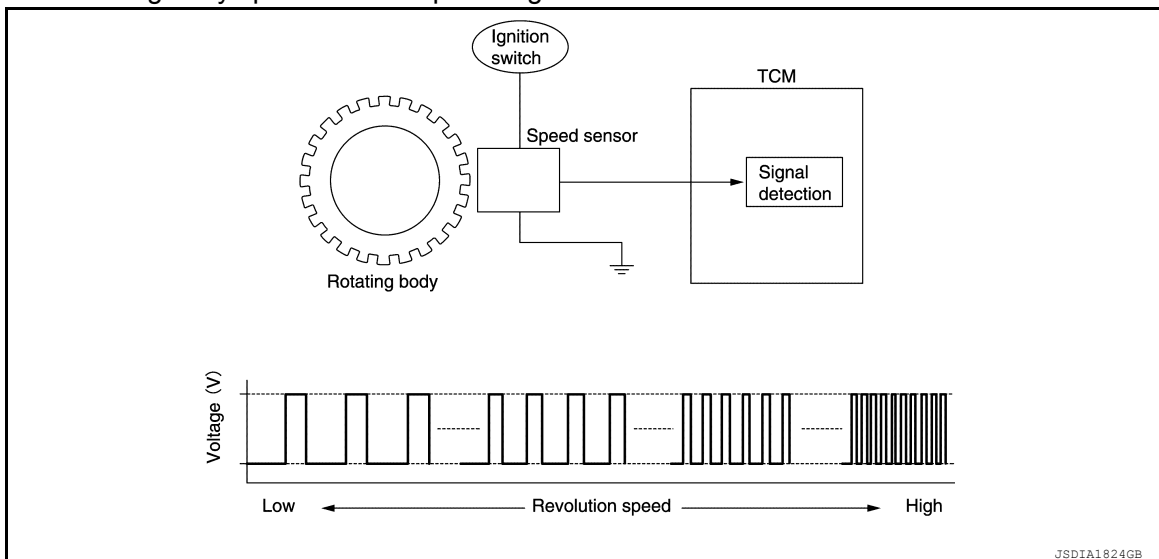
CVT CONTROL SYSTEM : Primary Speed Sensor

INFOID:000000011220236

- The primary speed sensor is installed to transaxle side cover.
- The primary speed sensor detects primary pulley speed.



- 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.



COMPONENT PARTS

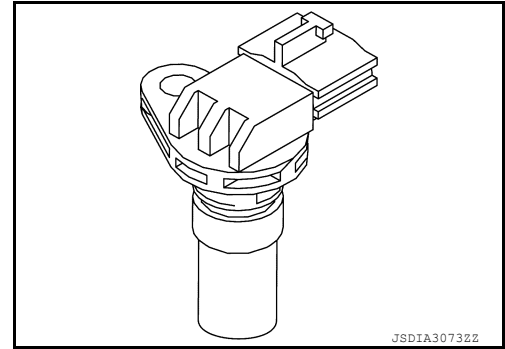
< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

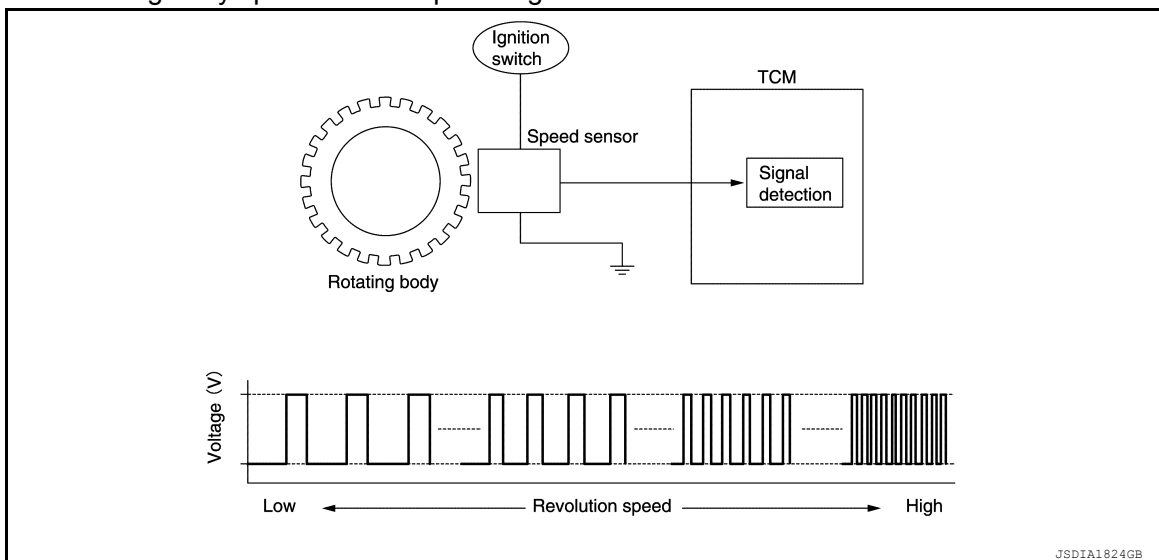
CVT CONTROL SYSTEM : Output Speed Sensor

INFOID:0000000011220237

- The output speed sensor is installed to the back side of transaxle case.
- The output speed sensor detects final gear speed.
-



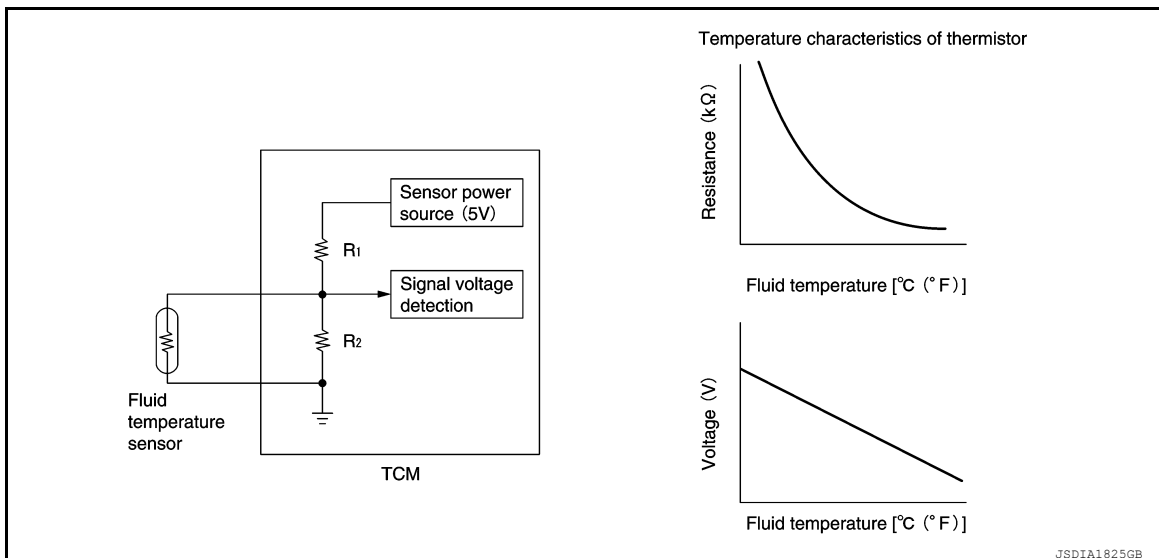
- The output speed sensor generates an ON-OFF pulse signal according to the rotating body speed. TCM judges the rotating body speed from the pulse signal.



CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor

INFOID:0000000011220238

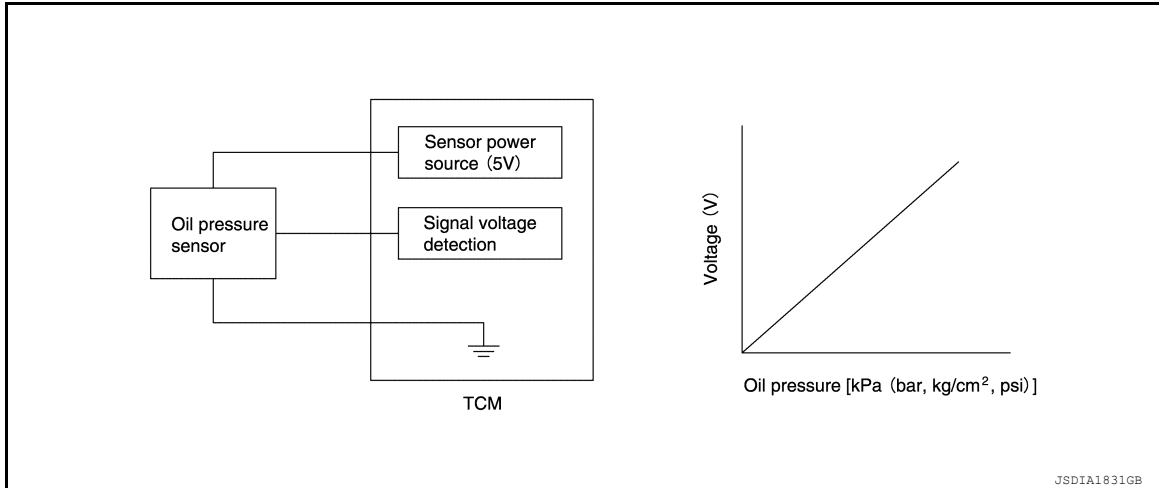
- The CVT fluid temperature sensor is installed to control valve.
- The CVT fluid temperature sensor detects CVT fluid temperature in oil pan.
- The fluid temperature sensor uses a thermistor, and changes the signal voltage by converting changes in the CVT fluid temperature to a resistance value. TCM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



CVT CONTROL SYSTEM : Primary Pressure Sensor

INFOID:0000000011220239

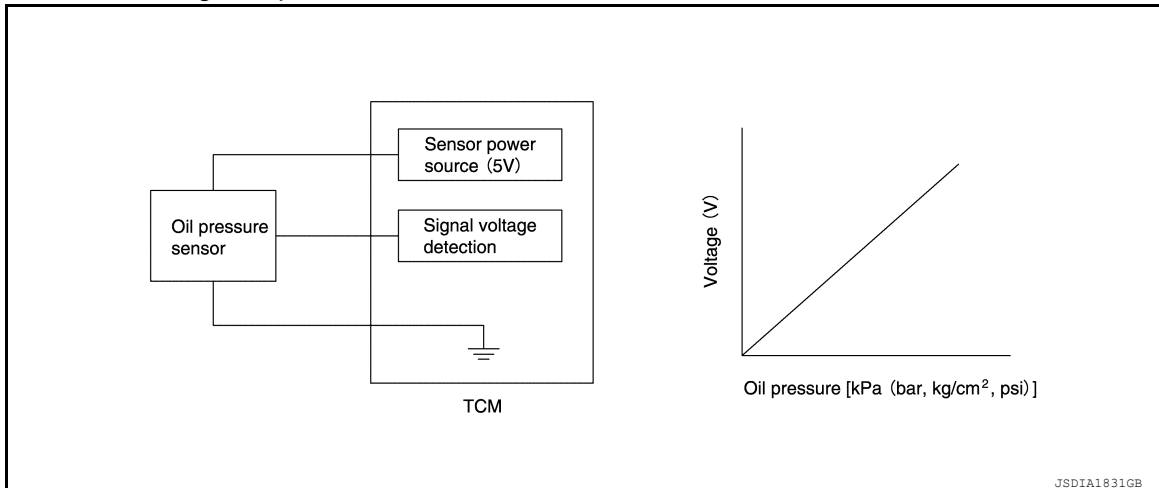
- The primary pressure sensor is installed to control valve.
- The primary pressure sensor detects the pressure applied to the primary pulley.
- When pressure is applied to the ceramic device in the primary pressure sensor, the ceramic device is deformed, resulting in voltage change. TCM evaluates the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



CVT CONTROL SYSTEM : Secondary Pressure Sensor

INFOID:0000000011220240

- The secondary pressure sensor is installed to control valve.
- The secondary pressure sensor detects the pressure applied to the secondary pulley.
- 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 : Line Pressure Solenoid Valve

INFOID:0000000011220241

- The line pressure solenoid valve is installed to control valve.
- The line pressure solenoid valve controls the pressure regulator valve. For information about the pressure regulator valve, refer to [TM-24, "TRANSAXLE : Component Description"](#).

COMPONENT PARTS

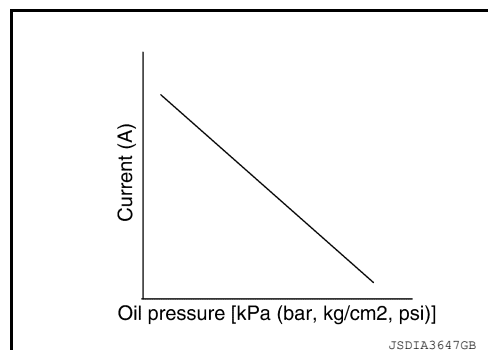
< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

- The line pressure solenoid valve uses the 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.



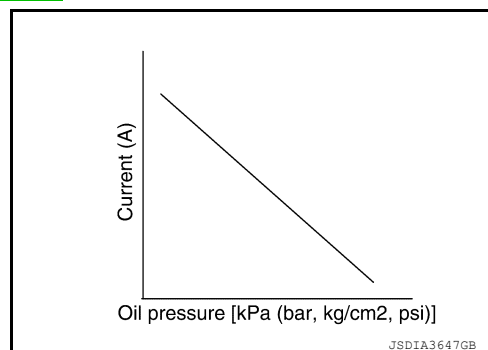
CVT CONTROL SYSTEM : Primary Pressure Solenoid Valve

INFOID:0000000011220242

- The primary pressure solenoid valve is installed to control valve.
- The primary pressure solenoid valve controls the primary reducing valve. For information about the primary reducing valve, refer to [TM-24, "TRANSAXLE : Component Description"](#).
- The primary pressure solenoid valve uses the 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.



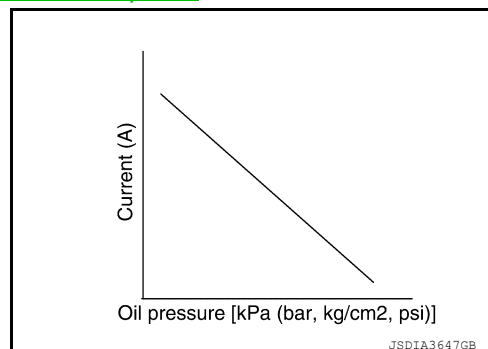
CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve

INFOID:0000000011220243

- The secondary pressure solenoid valve is installed to control valve.
- The secondary pressure solenoid valve controls the secondary reducing valve. For information about the secondary reducing valve, refer to [TM-24, "TRANSAXLE : Component Description"](#).
- The secondary pressure solenoid valve uses the 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 : Torque Converter Clutch Solenoid Valve

INFOID:0000000011220244

- The torque converter clutch solenoid valve is installed to control valve.
- The torque converter clutch solenoid valve controls the torque converter clutch control valve. For information about the torque converter clutch control valve, refer to [TM-24, "TRANSAXLE : Component Description"](#).

COMPONENT PARTS

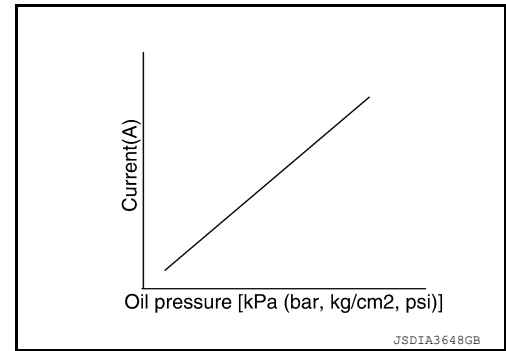
< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

- The torque converter clutch solenoid valve utilizes 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.



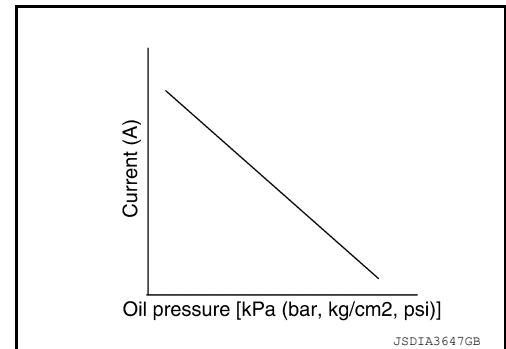
CVT CONTROL SYSTEM : Select Solenoid Valve

INFOID:0000000011220245

- The select solenoid valve is installed to control valve.
- The select solenoid valve adjusts the tightening pressure of the forward clutch and reverse brake.
- The select solenoid valve uses the 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 : Manual Mode Switch

INFOID:0000000011220246

- 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:0000000011220247

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

CVT CONTROL SYSTEM : Malfunction Indicator Lamp (MIL)

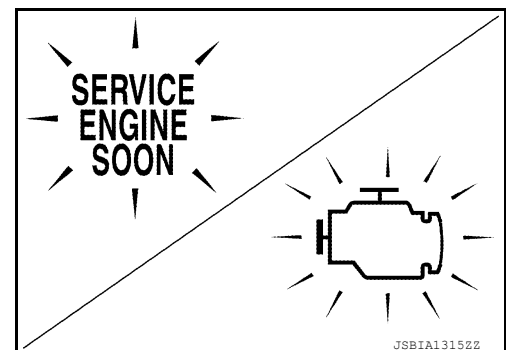
INFOID:0000000011220248

The malfunction indicator lamp (MIL) is located on the combination meter.

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

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

For details, refer to [EC-28. "Malfunction Indicator Lamp \(MIL\)".](#)



SHIFT LOCK SYSTEM

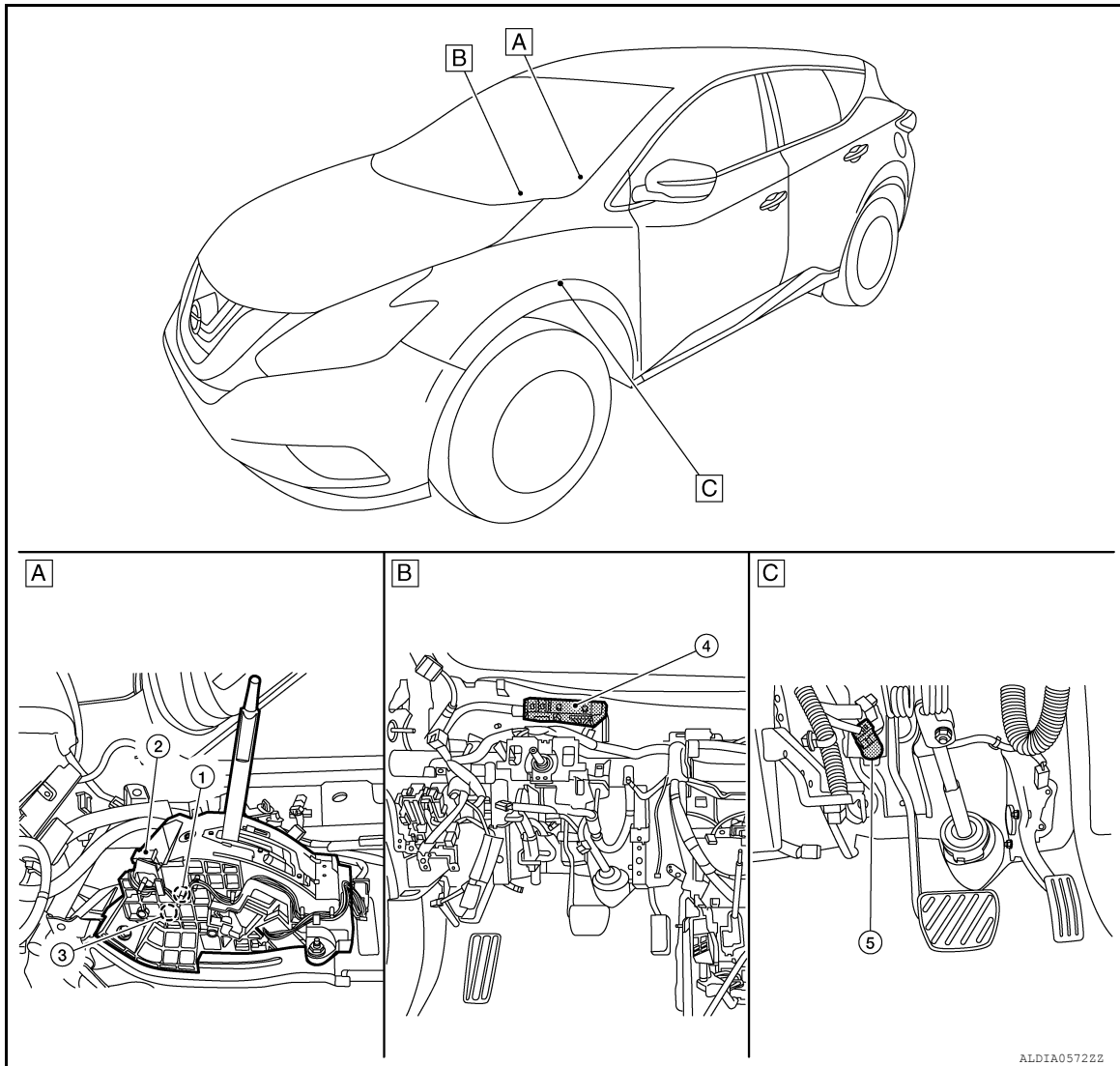
COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

SHIFT LOCK SYSTEM : Component Parts Location

INFOID:0000000011220249



- A. Between front seats (view with center console removed) B. View with instrument panel removed C. Brake pedal area

COMPONENT DESCRIPTION

No.	Component	Function
1.	Shift lock solenoid	The shift lock solenoid operates according to the signal from the BCM and moves the lock lever.
2.	Shift lock release button	Forcibly releases the shift lock when pressed.
3.	Park position switch	The park position switch detects that the selector lever is in "P" position.
4.	BCM	When the stop lamp switch signal is received by the BCM, the BCM supplies power to the shift lock solenoid coil.
5.	Stop lamp switch	When the stop lamp switch supplies power to the BCM, the BCM supplies power to the shift lock solenoid.

STRUCTURE AND OPERATION

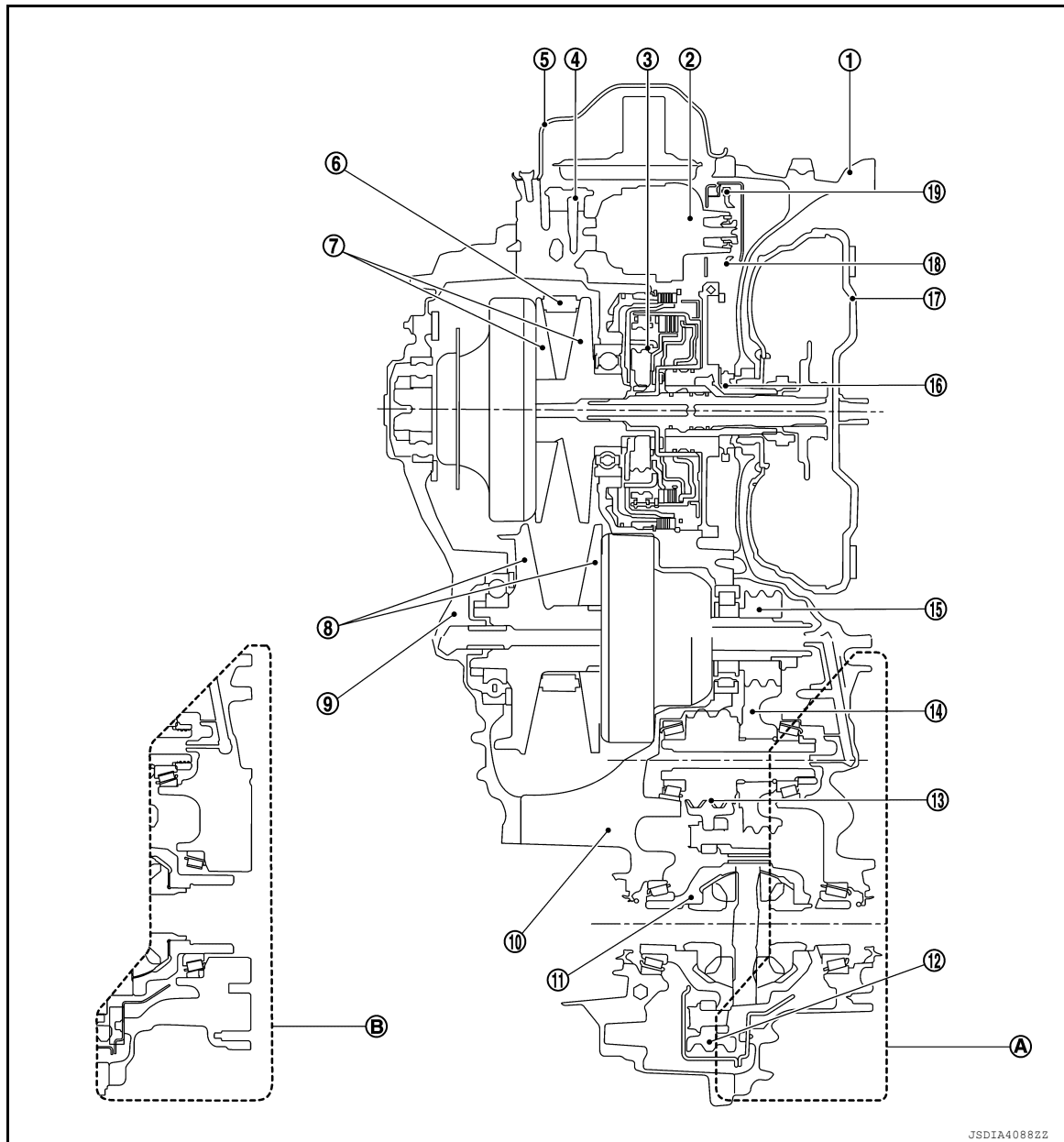
< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

STRUCTURE AND OPERATION TRANSAXLE

TRANSAXLE : Cross-Sectional View

INFOID:0000000011220250



- | | | |
|---------------------|---------------------|-------------------|
| ① Converter housing | ② Oil pump | ③ Planetary gear |
| ④ Control valve | ⑤ Oil pan | ⑥ Chain belt |
| ⑦ Planetary pulley | ⑧ Secondary pulley | ⑨ Side cover |
| ⑩ Transaxle case | ⑪ Differential case | ⑫ Final gear |
| ⑬ Reduction gear | ⑭ Idler gear | ⑮ Output gear |
| ⑯ Drive sprocket | ⑰ Torque converter | ⑱ Driven sprocket |
| Ⓐ FWD models | Ⓑ AWD models | |

TRANSAXLE : Transaxle Mechanism

INFOID:0000000011220251

TORQUE CONVERTER (WITH LOCK-UP FUNCTION)

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.

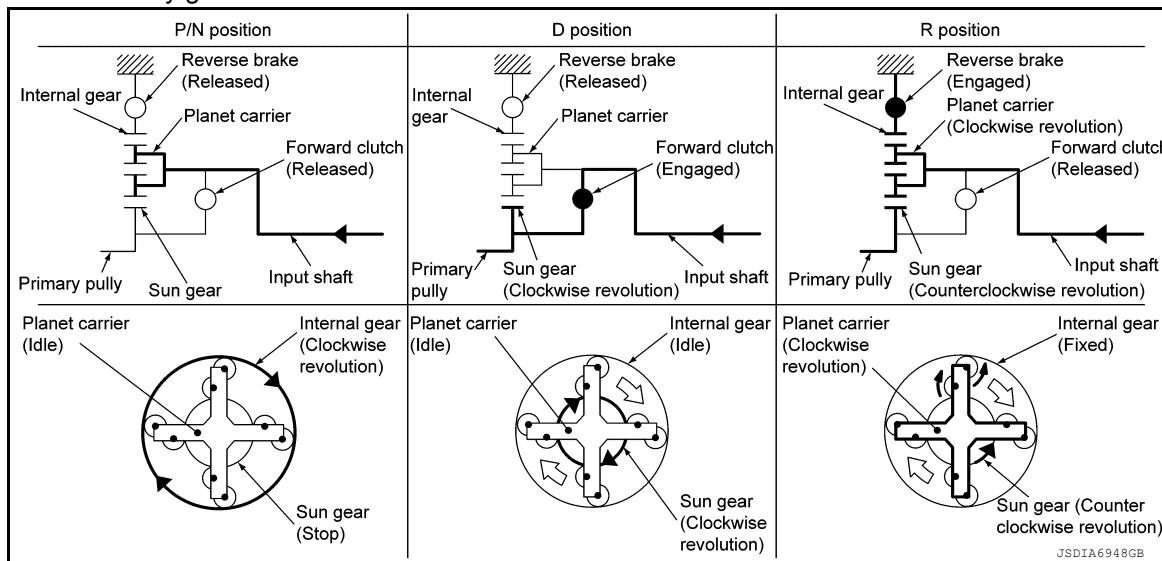
OIL PUMP

Utilizes a vane-type oil pump that is driven by the engine through the oil pump drive chain in order to increase efficiency of pump discharge volume in low-speed zone and optimize pump discharge volume in high-speed zone. 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

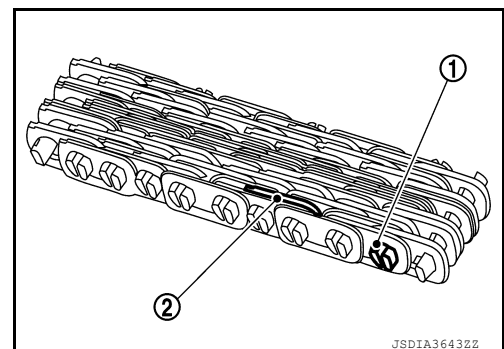


BELT & PULLEY

It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the chain belt. The groove width changes according to wrapping radius of chain 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.

Chain belt

The chain belt consists of approximately 150 locker pins ① and 1,000 link plates ②. Chains are rotated by locker pins sandwiched by pulleys. This produces tension difference in chains among pulleys. Accordingly, the power is transferred by the tension.



Pulley

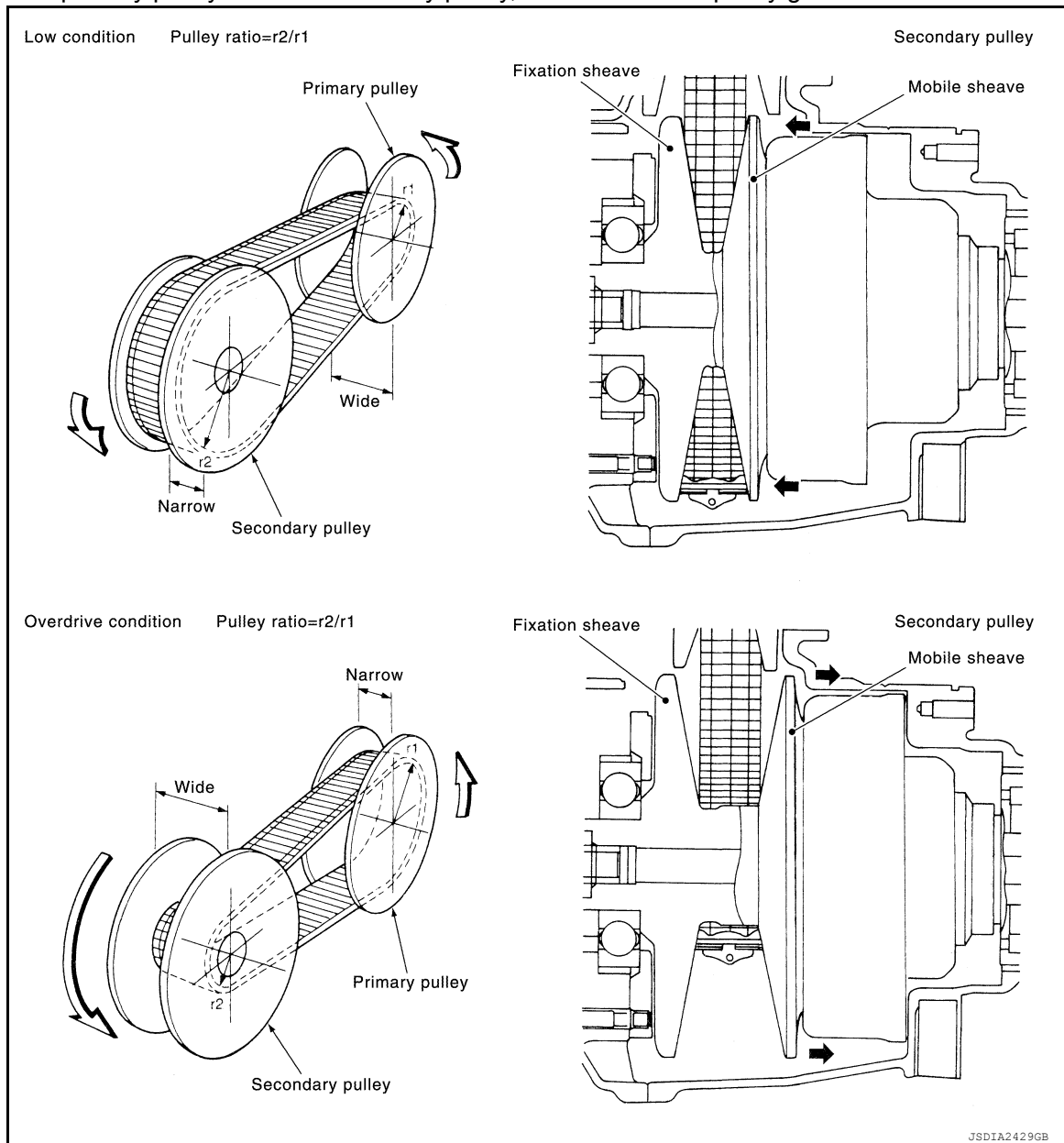
The primary pulley (input shaft side) and the secondary pulley (output shaft side) have the shaft with slope (fixed cone surface), movable sheave (movable cone surface that can move in the axial direction) and oil pressure chamber at the back of the movable sheave.

STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

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

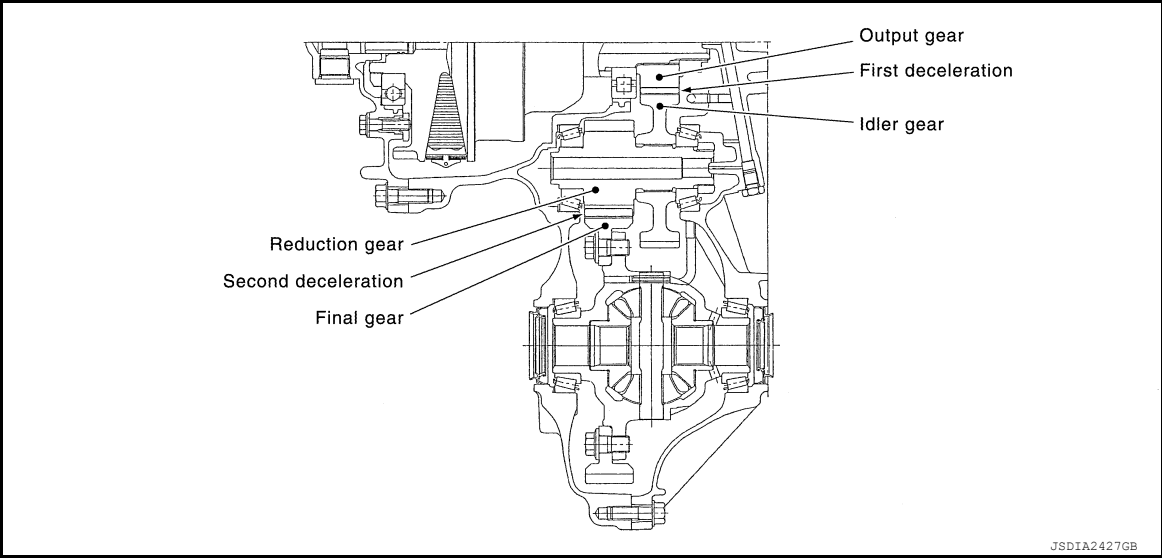
The deceleration gears are composed of 2 stages: primary deceleration (output gear, idler gear pair) and secondary deceleration (reduction gear, final gear pair). All of these gears are helical gears.

STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

The lubrication oil is the same as the CVT fluid which lubricates the entire transaxle.



TRANSAXLE : Operation Status

INFOID:0000000011220252

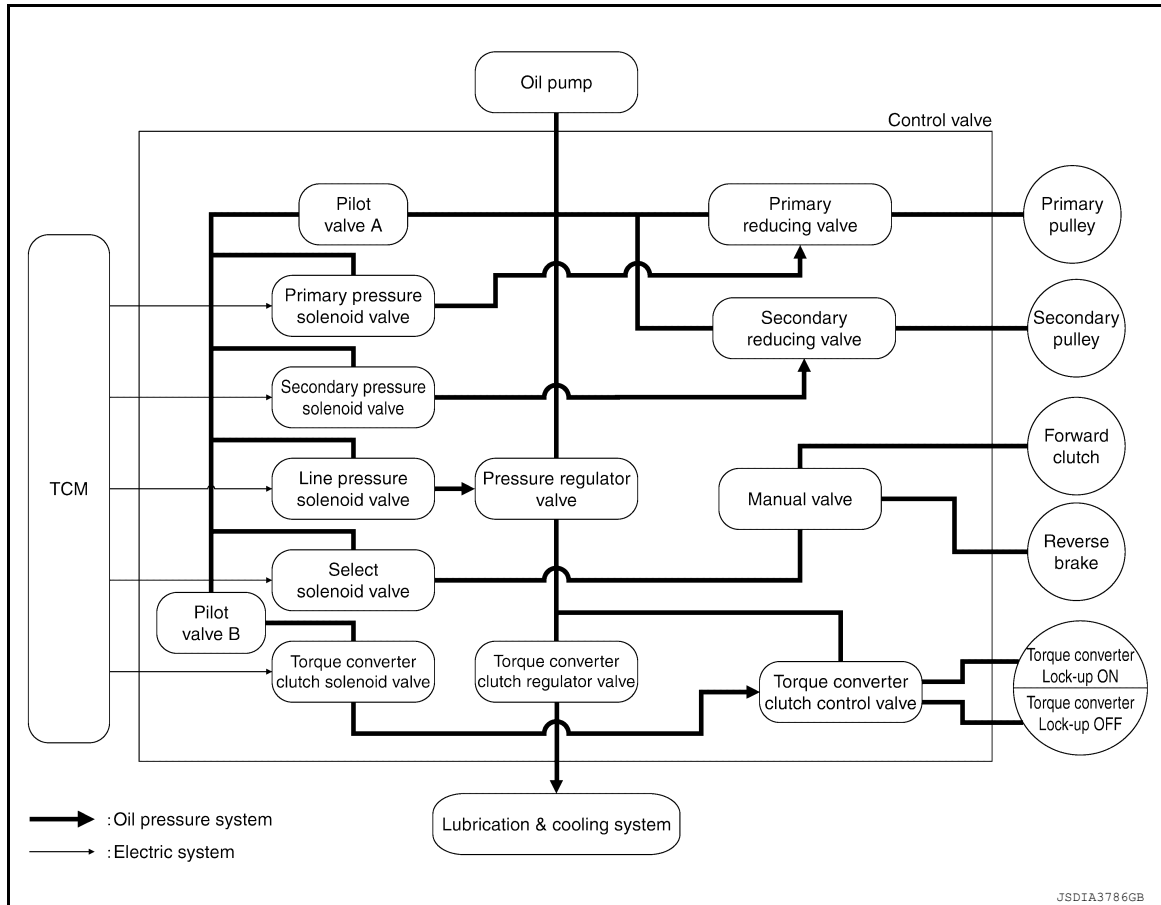
×: Engaged or applied.

Selector lever position	Parking mechanism	Forward clutch	Reverse brake	Primary pulley	Secondary pulley	Chain belt	Final drive
P	×						
R			×	×	×	×	×
N							
D		×		×	×	×	×

TRANSAXLE : Oil Pressure System

INFOID:000000011220253

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



TRANSAXLE : Component Description

INFOID:000000011220254

Part name	Function
Torque converter	Increases engine torque and transmits it to the transaxle.
Oil pump	Utilizes a vane-type oil pump that is driven by the engine through the oil pump drive chain in order to increase efficiency of pump discharge volume in low-speed zone and optimize pump discharge volume in high-speed zone. 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.

STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

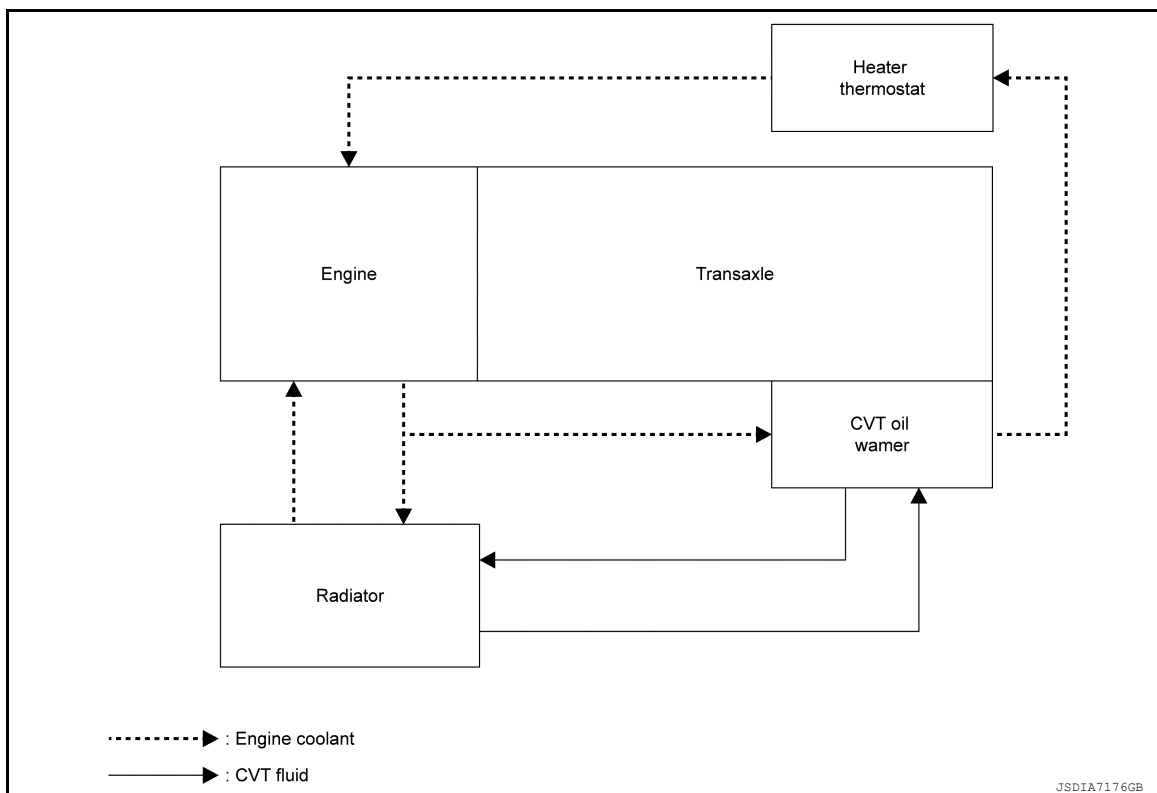
Part name	Function
Input shaft	The input shaft is directly connected to forward clutch drum and transmits traction force from torque converter. In shaft center, there are holes for hydraulic distribution to primary pulley and hydraulic distribution for lockup ON/OFF.
Primary pulley	It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the chain belt. 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	
Chain 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 secondary pulley 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	
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.
Manual valve	Distributes the clutch operation pressure to each circuit according to the selector lever position.
Secondary reducing valve	Reduces line pressure and adjusts secondary pressure.
Primary reducing valve	Reduces line pressure and adjusts primary pressure.
Pilot valve A	Reduces line pressure and adjusts pilot pressure to the solenoid valves listed below. • Primary pressure solenoid valve • Secondary pressure solenoid valve • Select solenoid valve • Line pressure solenoid valve
Pilot valve B	Reduces pilot pressure and adjusts pilot pressure to the torque converter clutch solenoid valve.

FLUID COOLER & FLUID WARMER SYSTEM

FLUID COOLER & FLUID WARMER SYSTEM : System Description

INFOID:000000011220255

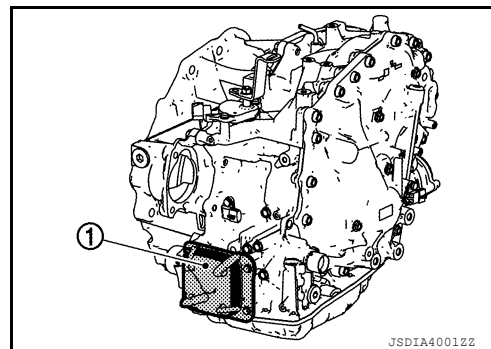
CVT FLUID COOLER SCHEMATIC



COMPONENT DESCRIPTION

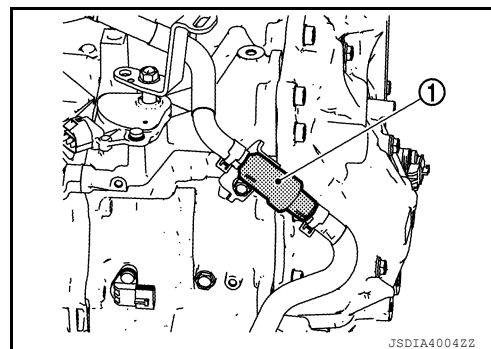
CVT Oil Warmer

- The CVT oil warmer ① is installed on the front part of transaxle assembly.
- When engine is started while engine and CVT are cold, engine coolant temperature rises more quickly than CVT fluid temperature. CVT oil warmer is provided with two circuits for CVT and engine coolant respectively so that warmed engine coolant warms CVT quickly. This helps shorten CVT warming up time, improving fuel economy.
- A cooling effect is obtained when CVT fluid temperature is high.



Heater Thermostat

- The heater thermostat ① is installed on the front part of transaxle assembly.
- The heater thermostat open and close with set temperature.



SHIFT LOCK SYSTEM

SHIFT LOCK SYSTEM : System Description

INFOID:0000000011220256

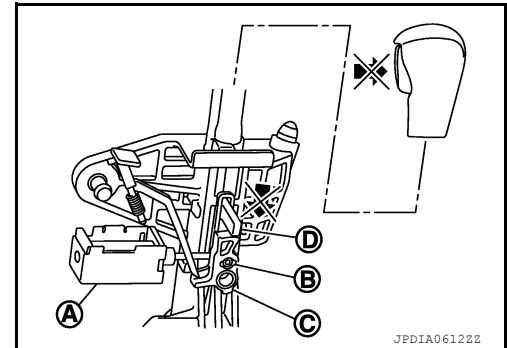
The shift selector lever cannot be shifted from the “P” position unless the brake pedal is depressed while the ignition switch is set to ON. The shift lock is unlocked by turning the shift lock solenoid ON when the ignition switch is set to ON, the park position switch is turned ON (shift selector lever 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.

SHIFT LOCK OPERATION AT “P” POSITION

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

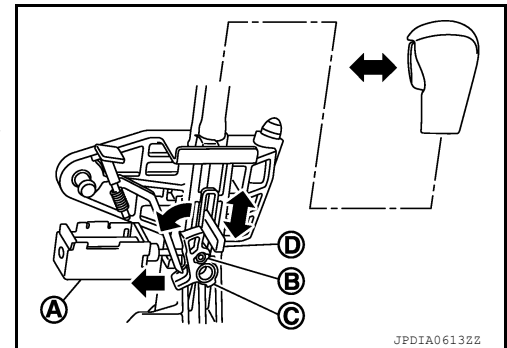
The shift lock solenoid (A) is turned OFF (not energized) and the solenoid rod (B) is extended with the spring when the brake pedal is not depressed (no selector operation allowed) with the ignition switch ON.

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.



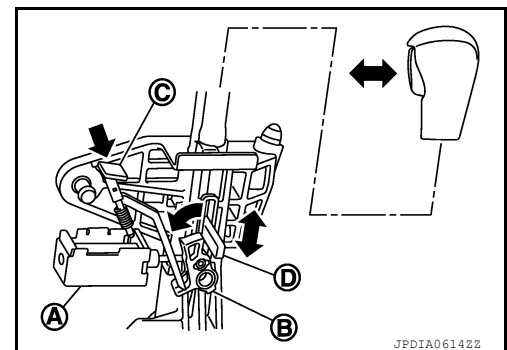
When Brake Pedal Is Depressed (Shift Operation Allowed)

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.

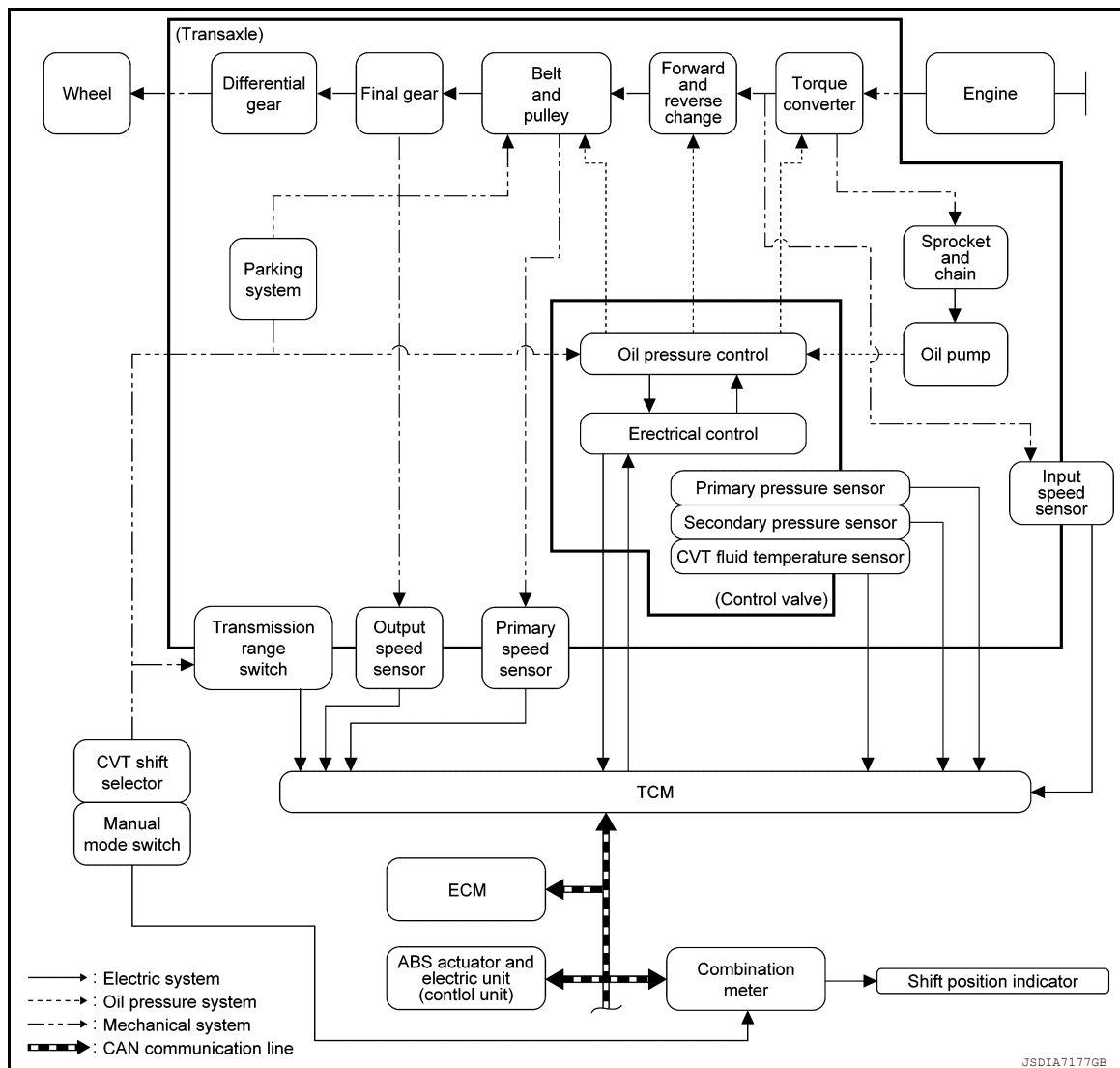
SYSTEM

CVT CONTROL SYSTEM

CVT CONTROL SYSTEM : System Description

INFOID:0000000011220257

SYSTEM DIAGRAM



JSDIA7177GB

MAIN CONTROL CONTENTS OF TCM

Controls	Reference
Line pressure control	TM-33. "LINE PRESSURE CONTROL : System Description"
Shift control	TM-34. "SHIFT CONTROL : System Description"
Select control	TM-36. "SELECT CONTROL : System Description"
Lock-up control	TM-37. "LOCK-UP CONTROL : System Description"
Fail-safe	TM-54. "Fail-safe"
Self-diagnosis function	TM-42. "CONSULT Function"
Communication function with CONSULT	TM-42. "CONSULT Function"

LIST OF CONTROL ITEMS AND INPUT/OUTPUT

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

Control Item		Shift control	Line pressure control	Select control	Lock-up control	Fail-safe function*
Input	Engine torque signal (CAN communication)	×	×	×	×	×
	Engine speed signal (CAN communication)	×	×	×	×	×
	Accelerator pedal position signal (CAN communication)	×	×	×	×	
	Closed throttle position signal (CAN communication)	×	×		×	
	Stop lamp switch signal (CAN communication)	×	×	×	×	
	Primary pressure sensor					×
	Secondary pressure sensor	×	×			×
	CVT fluid temperature sensor	×	×	×	×	×
	Primary speed sensor	×	×	×	×	×
	Output speed sensor	×	×		×	×
	Input speed sensor	×	×	×	×	×
	Transmission range switch	×	×	×	×	×
	Manual mode switch (CAN communication)	×	×		×	
Output	Line pressure solenoid valve	×	×	×		×
	Primary pressure solenoid valve	×	×			×
	Torque converter clutch solenoid valve				×	×
	Secondary pressure solenoid valve	×	×			×
	Select solenoid valve	×		×		×
	Shift position indicator (CAN communication)			×		

*: If these input/output signals show errors, TCM activates the fail-safe function.

CVT CONTROL SYSTEM : Fail-safe

INFOID:0000000011773701

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.

If the vehicle shows following behaviors including “poor acceleration”, a malfunction of the applicable system is detected by TCM and the vehicle may be in a fail-safe mode. At this time, check the DTC code and perform inspection and repair according to the malfunction diagnosis procedures.

Fail-safe function

DTC	Vehicle behavior	Conditions of vehicle
P062F	Not changed from normal driving	—
P0705	- Shift position indicator on combination meter is not displayed - Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

DTC	Vehicle behavior	Conditions of vehicle
P0706	- Shift position indicator on combination meter is not displayed - Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—
P0711	- Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)
P0712	- Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)
P0713	- Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)
P0715	- Start is slow - Acceleration is slow - Lock-up is not performed - Manual mode is not activated	—
P0717	- Start is slow - Acceleration is slow - Lock-up is not performed	—
P0740	- Start is slow - Acceleration is slow - Lock-up is not performed	—
P0743	- Start is slow - Acceleration is slow - Lock-up is not performed	—
P0744	- Start is slow - Acceleration is slow - Lock-up is not performed	—
P0746	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

DTC	Vehicle behavior	Conditions of vehicle	
P0776	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed • Vehicle speed is not increased	When a malfunction occurs on the low oil pressure side	A
	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	When a malfunction occurs on the high oil pressure side	B
P0778	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—	C
P0779	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—	TM
P0826	Manual mode is not activated	—	E
P0841	Not changed from normal driving	—	F
P0847	Not changed from normal driving	—	G
P0848	Not changed from normal driving	—	
P084C	Not changed from normal driving	—	
P084D	Not changed from normal driving	—	H
P0863	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—	I
P0890	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed • Vehicle speed is not increased	—	J
P0962	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—	K
P0963	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—	L
P0965	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	When a malfunction occurs on the low oil pressure side	M
	• Selector shock is large • Lock-up is not performed	When a malfunction occurs on the high oil pressure side	N
P0966	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—	O
P0967	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—	P

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

DTC	Vehicle behavior	Conditions of vehicle
P2765	- Start is slow - Acceleration is slow - Lock-up is not performed - Manual mode is not activated	—
P2813	- Selector shock is large - Start is slow - Acceleration is slow - Vehicle speed is not increased	When a malfunction occurs on the low oil pressure side
	Selector shock is large	When a malfunction occurs on the high oil pressure side
P2814	Selector shock is large	—
P2815	Selector shock is large	—
U0073	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—
U0100	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—
U0102	Not changed from normal driving	—
U0121	Not changed from normal driving	—
U0140	Not changed from normal driving	—
U0141	Not changed from normal driving	—
U0155	Not changed from normal driving	—
U0164	Not changed from normal driving	—
U0300	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—
U1000	Not changed from normal driving	—
U1117	Not changed from normal driving	—
U1118	Not changed from normal driving	—

CVT CONTROL SYSTEM : Protection Control

INFOID:000000011220259

The TCM becomes the protection control status temporarily to protect the safety when the safety of TCM and transmission is lost. It automatically returns to the normal status if the safety is secured.

The TCM has the following protection control.

CONTROL FOR WHEEL SPIN

Control	When a wheel spin is detected, the engine output and gear ratio are limited and the line pressure is increased. Limits engine output when a wheel spin occurs in any of right and left drive wheels.
Vehicle behavior in control	If the accelerator is kept depressing during wheel spin, the engine revolution and vehicle speed are limited to a certain degree.
Normal return condition	Wheel spin convergence returns the control to the normal control.

TORQUE IS REDUCED WHEN DRIVING WITH THE REVERSE GEAR

Control	Engine output is controlled according to a vehicle speed while reversing the vehicle.
Vehicle behavior in control	Power performance may be lowered while reversing the vehicle.
Normal return condition	Torque returns to normal by positioning the selector lever in a range other than "R" position.

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

CONTROL WHEN FLUID TEMPERATURE IS HIGH

Control	When the CVT fluid temperature is high, the gear shift permission maximum revolution and the maximum torque are reduced than usual to prevent increase of the oil temperature.
Vehicle behavior in control	Power performance may be lowered, compared to normal control.
Normal return condition	The control returns to the normal control when CVT fluid temperature is lowered.

REVERSE PROHIBIT CONTROL

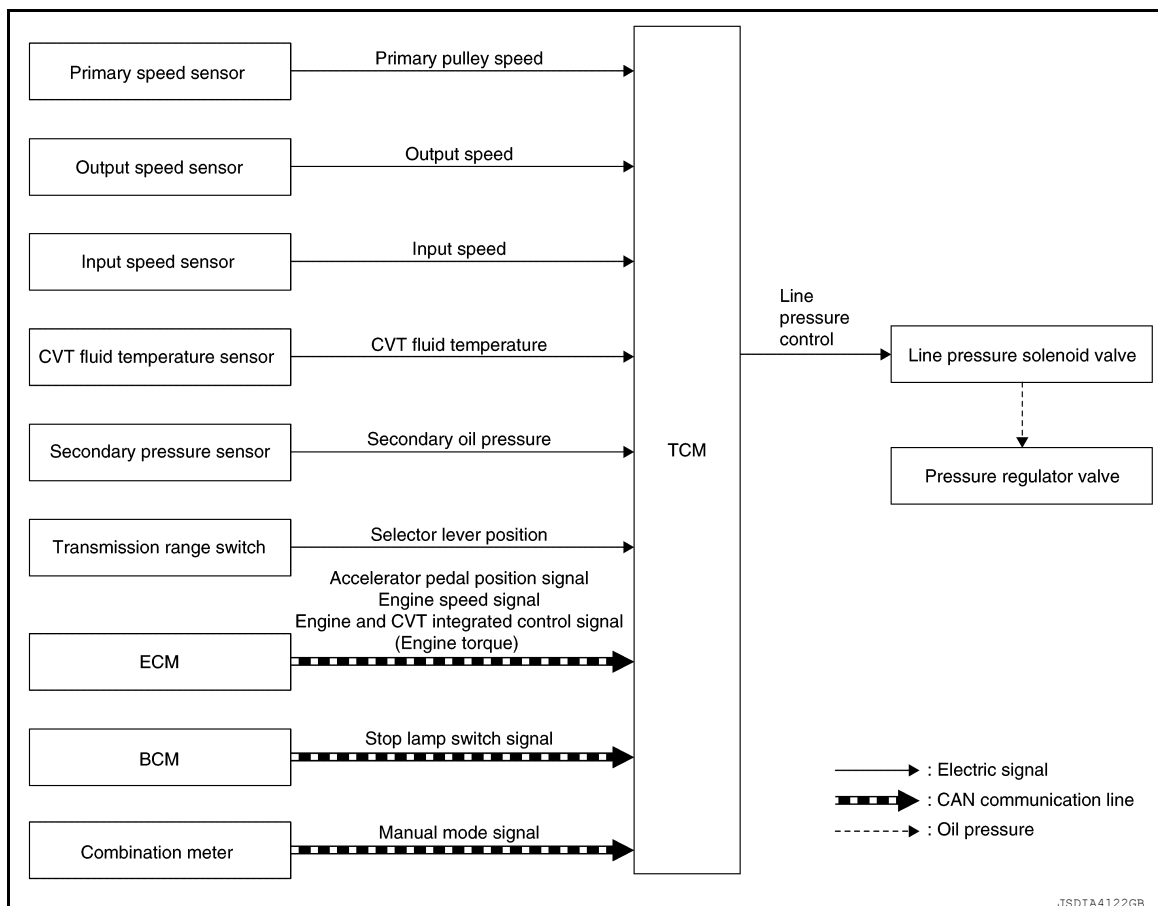
Control	The reverse brake is controlled to avoid becoming engaged when the selector lever is set in "R" position while driving in forward direction at more than the specified speed.
Vehicle behavior in control	If the selector lever is put at "R" position when driving with the forward gear, the gear becomes neutral, not reverse.
Normal return condition	The control returns to normal control when the vehicle is driven at low speeds. (The reverse brake becomes engaged.)

LINE PRESSURE CONTROL

LINE PRESSURE CONTROL : System Description

INFOID:0000000011220260

SYSTEM DIAGRAM



DESCRIPTION

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

Normal Oil Pressure Control

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

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, vehicle speed, input torque, stop lamp switch signal, transmission range switch signal, lock-up signal, power voltage, target shift ratio, oil temperature, oil pressure, and manual mode signal.

Secondary Pressure Feedback Control

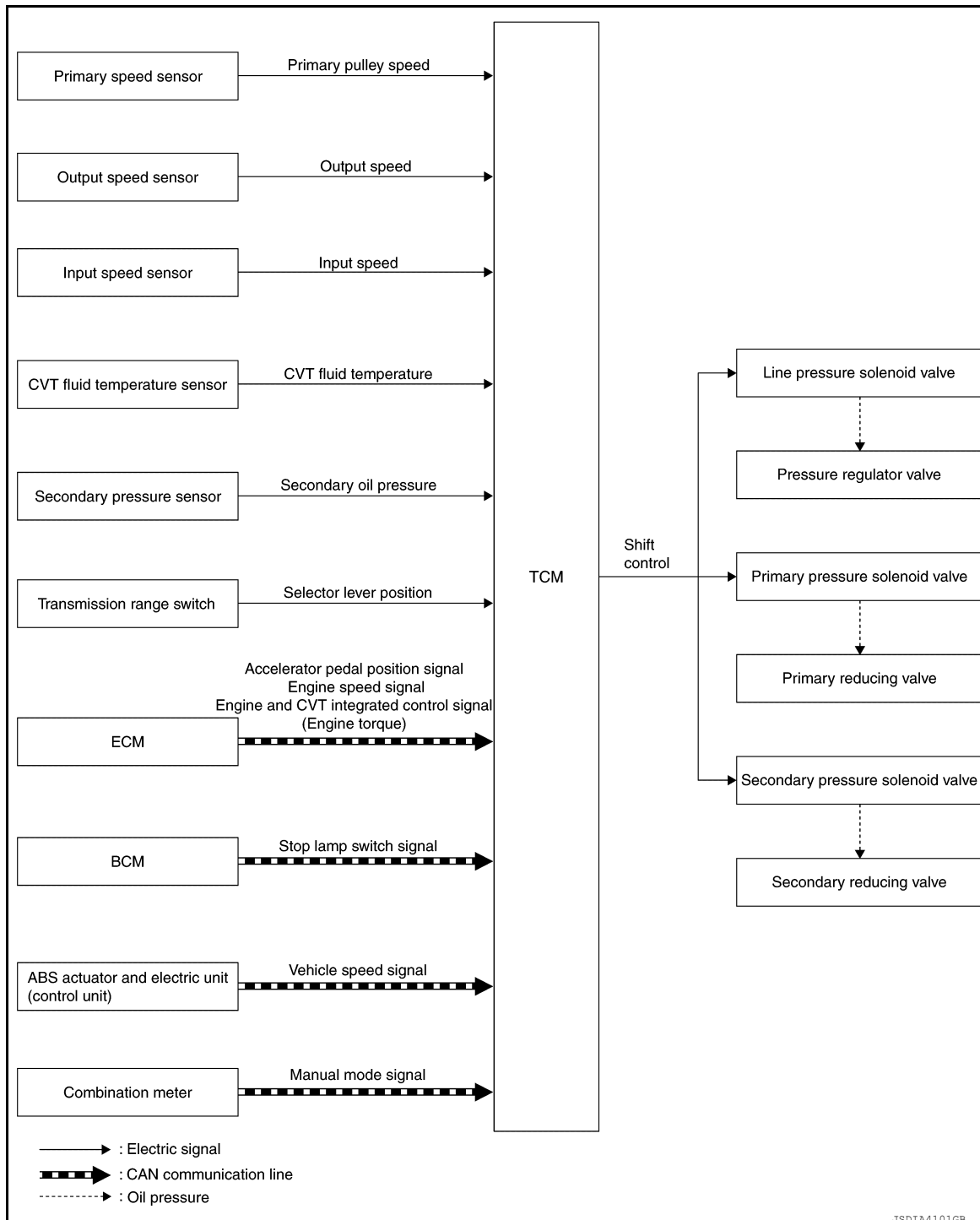
In normal oil pressure control and oil pressure control in shifting, highly accurate secondary pressure is determined by detecting the secondary pressure using an oil pressure sensor and by feedback control.

SHIFT CONTROL

SHIFT CONTROL : System Description

INFOID:0000000011220261

SYSTEM DIAGRAM



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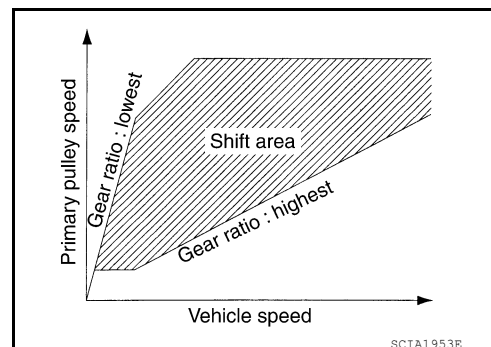
DESCRIPTION

To select the gear ratio that can give the driving force to meet driver's intent or vehicle situation, the vehicle driving condition such as vehicle speed or accelerator pedal position is detected and the most appropriate gear ratio is selected and the shifting method before reaching the speed is determined. The information is output to the primary pressure solenoid valve and secondary pressure solenoid valve to control the line pressure input/output to the pulley, to determine the pulley (movable pulley) position and to control the gear position.

Shift Position Function

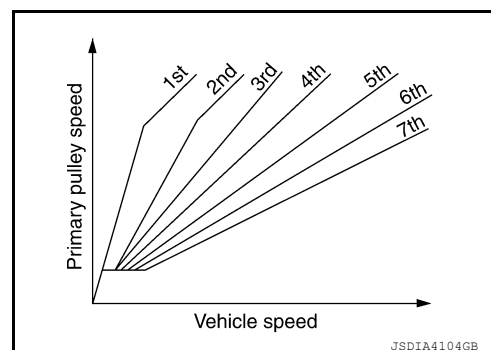
• D Position

Gear shifting is performed in all shifting ranges from the lowest to the highest gear ratio.



• M Position (Manual Mode)

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 transmission from the driving status of vehicle when the selector lever shifts to UP side (+ side) or DOWN side (-side). The combination meter blinks shift 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 M7.

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:

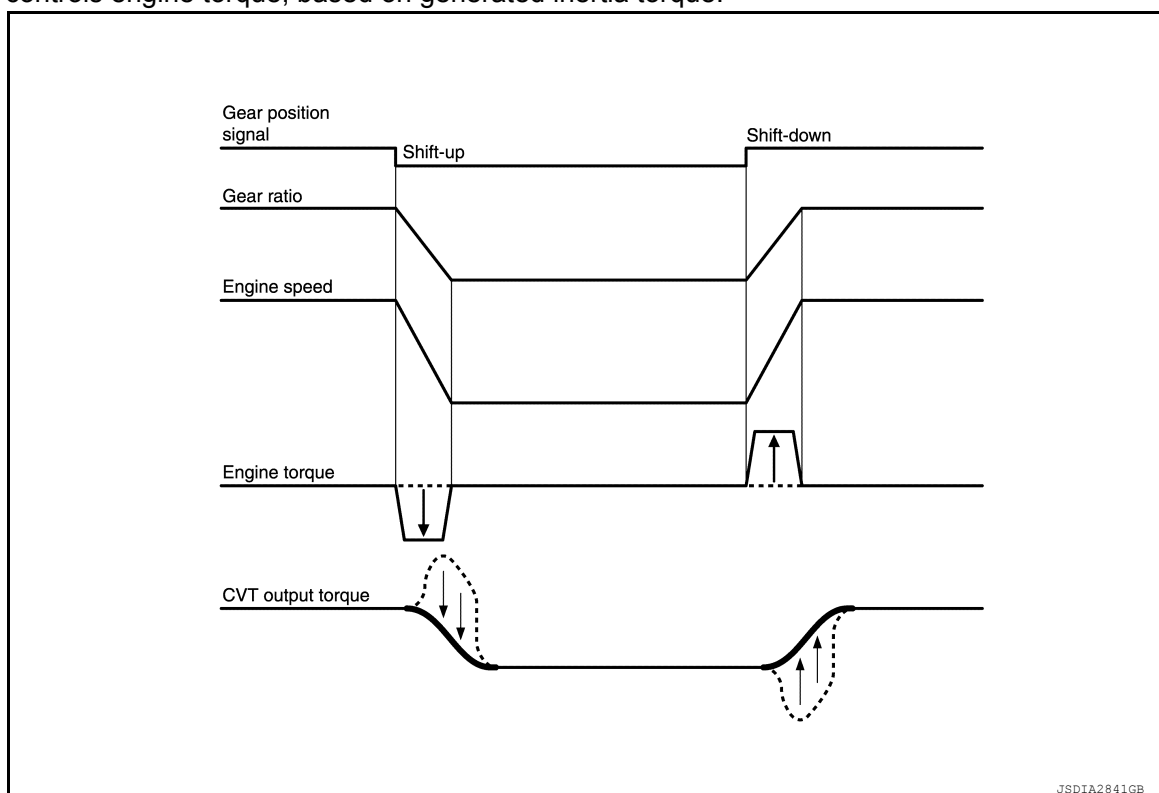
- When CAN communication is abnormal.
- During the retard inhibit signal transmission from ECM within the engine-CVT integrated control.
- Engine coolant temperature is less than 20°C (68°F).
- CVT fluid temperature is more than 120°C (248°F).
- Vehicle speed is less than 20 km/h (13 MPH).
- When ABS,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

SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

- 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.

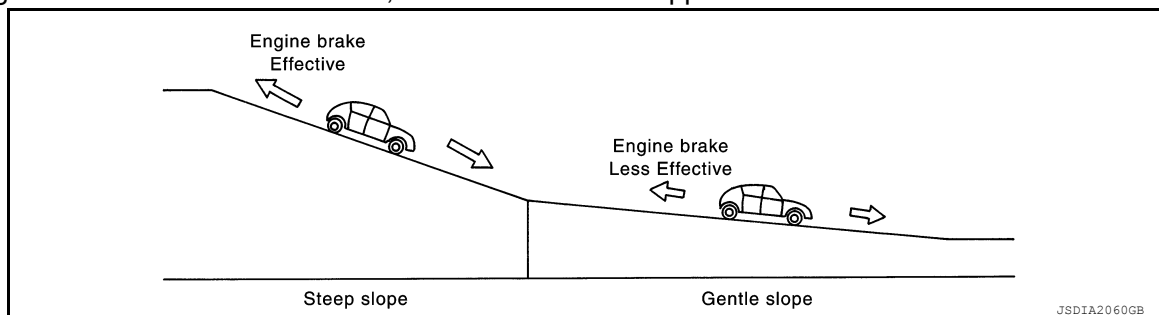


Hill Climbing And Descending Control

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 acceleration performance in re-acceleration 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

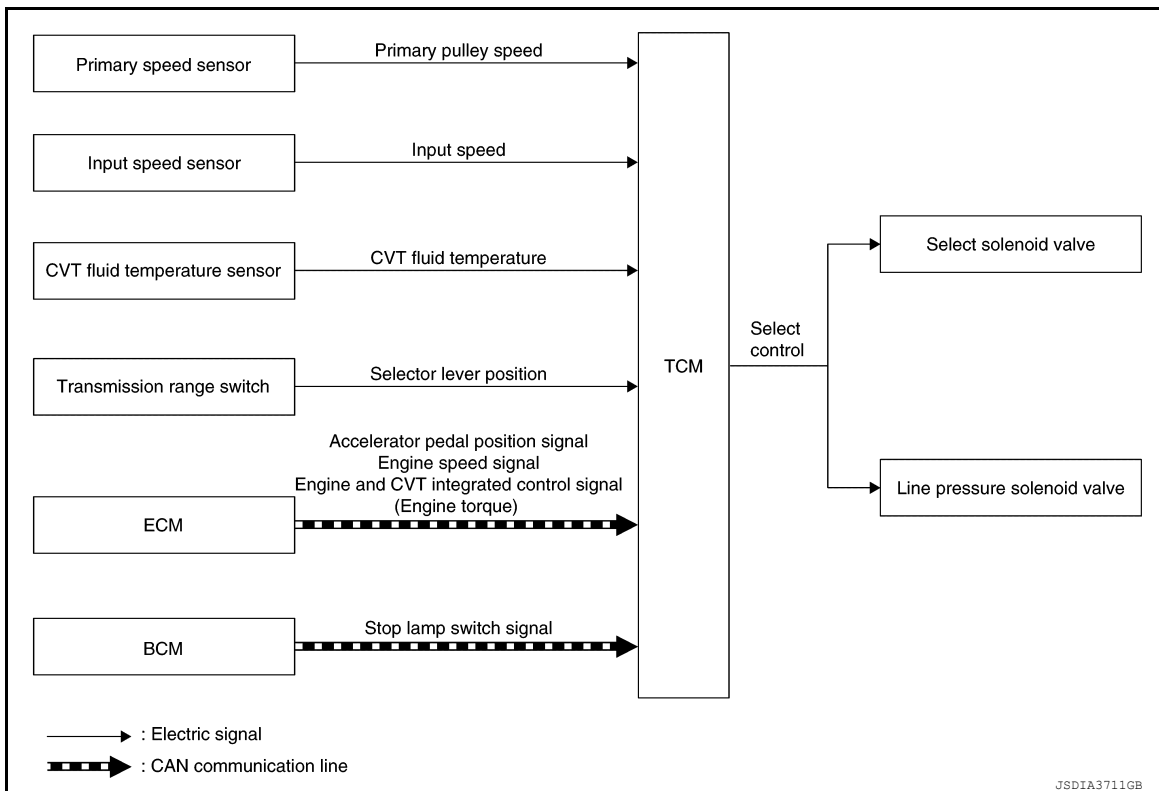
From change of the vehicle speed or accelerator pedal position, the acceleration request level of the driver or driving scene is evaluated. In start or acceleration during driving, the gear shift characteristics with linearity of revolution increase and vehicle speed increase are gained to improve the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

SELECT CONTROL

SELECT CONTROL : System Description

INFOID:0000000011220262

SYSTEM DIAGRAM



DESCRIPTION

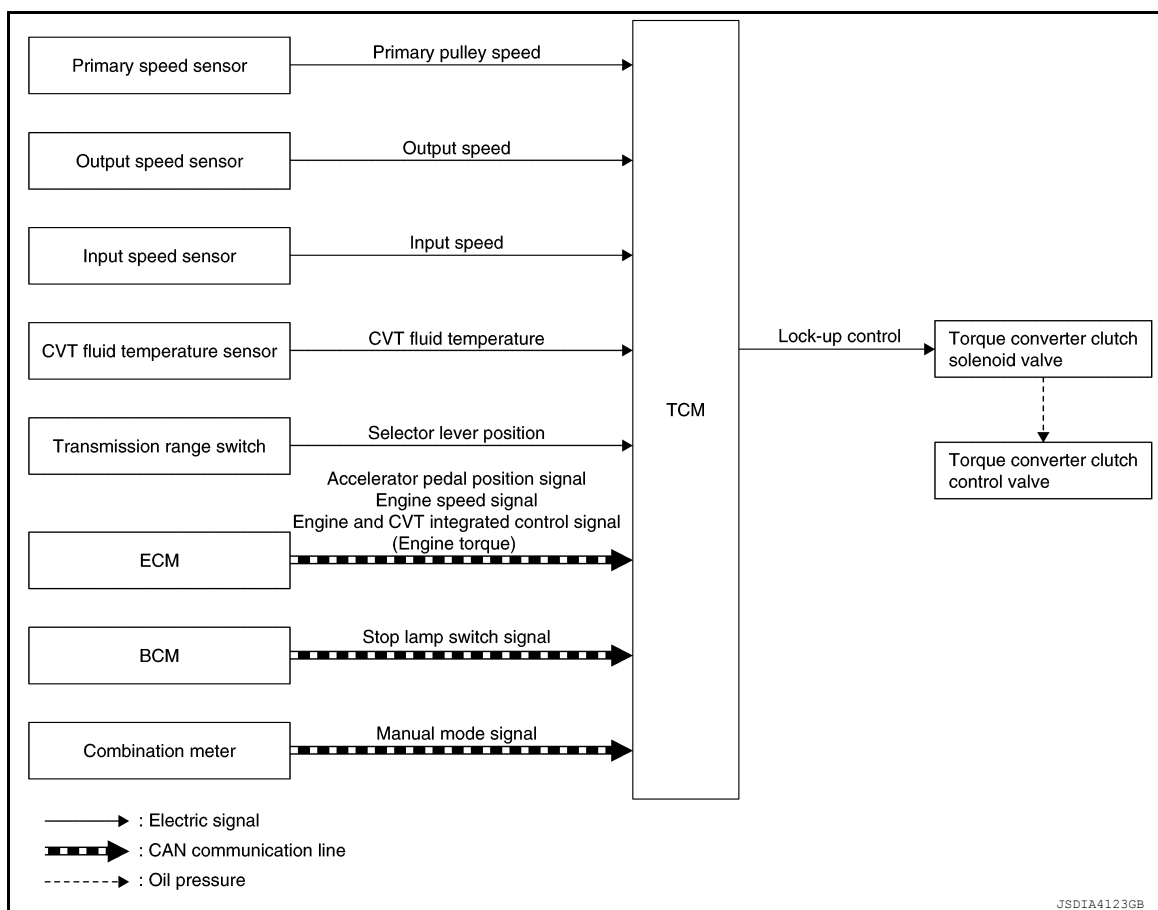
Based on accelerator pedal angle, engine speed, primary pulley speed, and the input speed, the optimum operating pressure is set to reduce impact of a selector lever operation while shifting from "N" ("P") to "D" ("R") position.

LOCK-UP CONTROL

LOCK-UP CONTROL : System Description

INFOID:0000000011220263

SYSTEM DIAGRAM



DESCRIPTION

- Controls for improvement of the transmission efficiency by engaging the torque converter clutch in the torque converter and eliminating slip of the converter. Achieves comfortable driving with slip control of the torque converter clutch.
- The oil pressure feed circuit for the torque converter clutch piston chamber is connected to the torque converter clutch control valve. The torque converter clutch control valve is switched by the torque converter clutch solenoid valve with the signal from TCM. This controls the oil pressure circuit, which is supplied to the torque converter clutch piston chamber, to the release side or engagement side.
- 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 engagement

In lock-up engagement, the torque converter clutch solenoid valve makes the torque converter clutch control valve locked up to generate the lock-up apply pressure. This pushes the torque converter clutch piston for engagement.

Lock-up release condition

In lock-up release, the torque converter clutch solenoid valve makes the torque converter clutch control valve non-locked up to drain the lock-up apply pressure. This does not engage the torque converter clutch piston.

ON BOARD DIAGNOSTIC (OBD) SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

ON BOARD DIAGNOSTIC (OBD) SYSTEM

Description

INFOID:0000000011220265

This is an on board diagnosis system which records diagnosis information related to the exhaust gases. It detects malfunctions related to sensors and actuators. The malfunctions are indicated by means of the malfunction indicator lamp (MIL) and are stored as DTC in the ECU memory. The diagnosis information can be checked using a diagnosis tool (GST: Generic Scan Tool).

Function of OBD

INFOID:0000000011220266

The GST is connected to the diagnosis connector on the vehicle and communicates with the on-board control units to perform diagnosis. The diagnosis connector is the same as for CONSULT. Refer to [GI-50, "Description"](#).

A

B

C

TM

E

F

G

H

I

J

K

L

M

N

O

P

DIAGNOSIS SYSTEM (TCM)

DIAGNOSIS DESCRIPTION

DIAGNOSIS DESCRIPTION : 1 Trip Detection Diagnosis and 2 Trip Detection Diagnosis

INFOID:0000000011220267

NOTE:

"Start the engine and turn OFF the ignition switch after warm-up." This is defined as 1 trip.

1 TRIP DETECTION DIAGNOSIS

When initial malfunction is detected, TCM memorizes DTC. In these diagnoses, some illuminate MIL and some do not. Refer to [TM-59, "DTC Index"](#).

2 TRIP DETECTION DIAGNOSIS

When initial malfunction is detected, TCM memorizes DTC of the 1st trip. MIL does not light at this stage. <1 trip>

If the same malfunction is detected again in next driving, TCM memorizes DTC. When DTC is memorized, MIL lights. <2 trip>

"Trip" of the "2 trip detection diagnosis" indicates the driving mode that executes self-diagnosis during driving.

×: Check possible —: Check not possible

Item	DTC at the 1st trip		DTC		MIL	
	Display at the 1st trip	Display at the 2nd trip	Display at the 1st trip	Display at the 2nd trip	Illumination at the 1st trip	Illumination at the 2nd trip
1 trip detection diagnosis (Refer to TM-59, "DTC Index")	—	—	×	—	×	—
2 trip detection diagnosis (Refer to TM-59, "DTC Index")	×	—	—	×	—	×

DIAGNOSIS DESCRIPTION : DTC and DTC of 1st Trip

INFOID:0000000011220268

2 TRIP DETECTION DIAGNOSIS THAT ILLUMINATES MIL

- The DTC number of the 1st trip is the same as the DTC number.
- When a malfunction is detected at the 1st trip, TCM memorizes DTC of the 1st trip. MIL does not light at this stage. If the same malfunction is not detected at the 2nd trip (conforming to necessary driving conditions), DTC at the 1st trip is erased from TCM. If the same malfunction is detected at the 2nd trip, TCM memorizes DTC and MIL lights at the same time.
- The DTC of the 1st trip is specified in Service \$01 of SAE J1979/ISO 15031-5. Since detection of DTC at the 1st trip does not illuminate MIL, warning for a problem is not given to a driver.
- For procedure to delete DTC and 1st trip DTC from TCM, refer to [TM-42, "CONSULT Function"](#).
- If DTC of the 1st trip is detected, it is necessary to check the cause according to the "Diagnosis flow". Refer to [TM-76, "Work Flow"](#).

DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp (MIL)

INFOID:0000000011220269

- TCM not only detects DTC, but also sends the MIL signal to ECM through CAN communication. ECM sends the MIL signal to the combination meter through CAN communication according to the signal, and illuminates MIL.
- For malfunction indicator lamp (MIL) description, refer to [EC-28, "Malfunction Indicator Lamp \(MIL\)"](#).

DIAGNOSIS DESCRIPTION : Counter System

INFOID:0000000011220270

RELATION BETWEEN DTC AT 1ST TRIP/DTC/MIL AND DRIVING CONDITIONS (FOR 2 TRIP DETECTION DIAGNOSIS THAT ILLUMINATES MIL)

- When initial malfunction is detected, TCM memorizes DTC of the 1st trip. MIL does not light at this stage.
- If the same malfunction is detected at the 2nd trip, TCM memorizes DTC and MIL lights at the same time.
- Then, MIL goes after driving the vehicle for 3 trips under "Driving condition B" without malfunction.
- DTC is displayed until 40 trips of "Driving condition A" are satisfied without detecting the same malfunction. DTC is erased when 40 trips are satisfied.

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

- When the self-diagnosis result is acceptable at the 2nd trip (conforming to driving condition B), DTC of the 1st trip is erased.

COUNTER SYSTEM LIST

Item	Driving condition	Trip
MIL (OFF)	B	3
DTC (clear)	A	40
DTC at 1st trip (clear)	B	1

DRIVING CONDITION

Driving condition A

Driving condition A is the driving condition that provides warm-up.

In specific, count-up is performed when all of the following conditions are satisfied.

- Engine speed is 400 rpm or more.
- After start of the engine, the water temperature increased by 20°C (36°F) or more.
- Water temperature was 70°C (158°F) or more.
- The ignition switch was changed from ON to OFF.

NOTE:

- If the same malfunction is detected regardless of the driving condition, reset the A counter.
- When the above is satisfied without detecting the same malfunction, count up the A counter.
- When MIL goes off due to the malfunction and the A counter reaches 40, the DTC is erased.

Driving condition B

Driving condition B is the driving condition that performs all diagnoses once.

In specific, count-up is performed when all of the following conditions are satisfied.

- Engine speed is 400 rpm or more.
- Water temperature was 70°C (158°F) or more.
- In closed loop control, vehicle speed of 70 – 120 km/h (43 – 75 MPH) continued for 60 seconds or more.
- In closed loop control, vehicle speed of 30 – 60 km/h (19 – 37 MPH) continued for 10 seconds or more.
- In closed loop control, vehicle speed of 4 km/h (2 MPH) or less and idle determination ON continued for 12 seconds or more.
- After start of the engine, 22 minutes or more have passed.
- The condition that the vehicle speed is 10 km/h (6 MPH) or more continued for 10 seconds or more in total.
- The ignition switch was changed from ON to OFF.

NOTE:

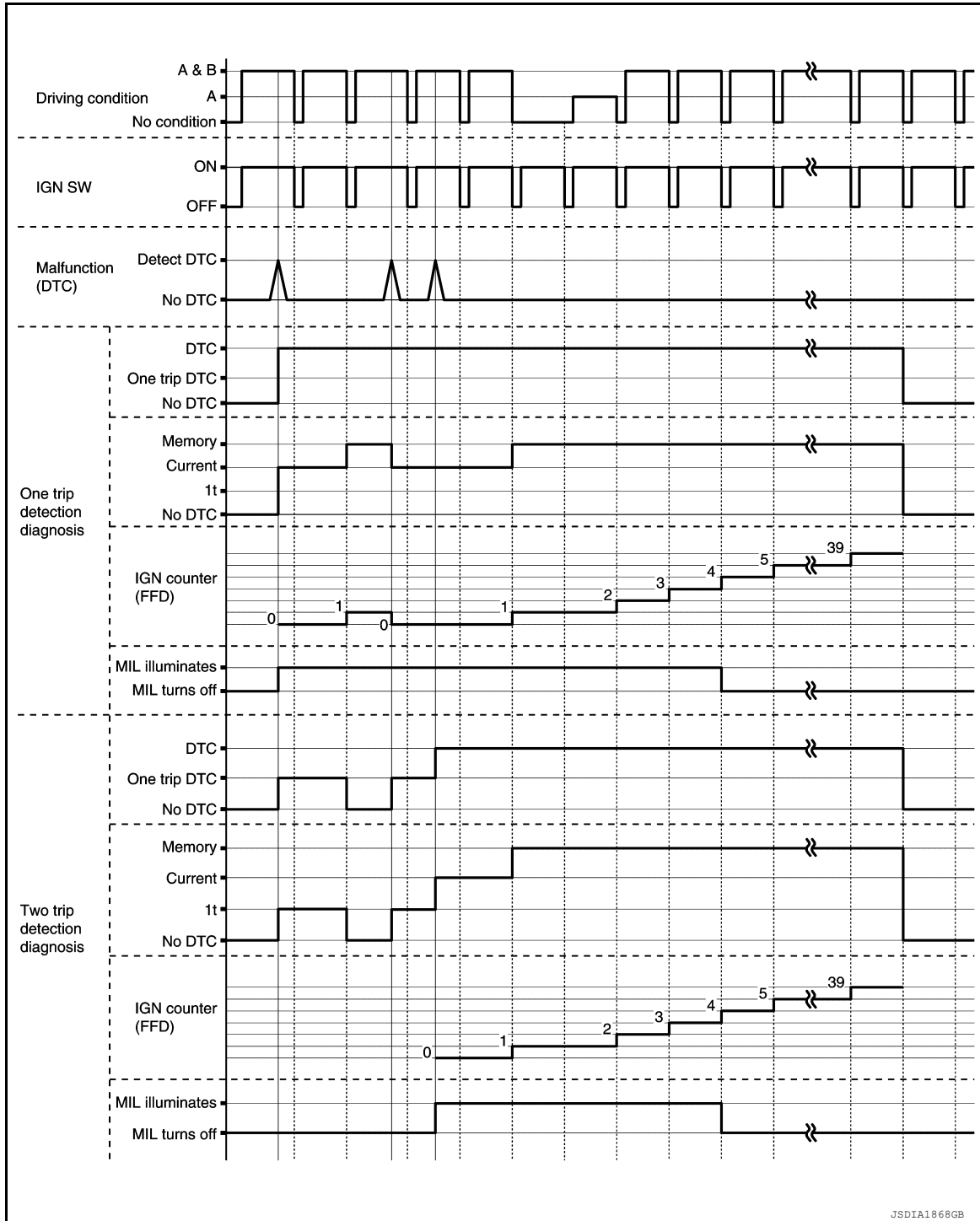
- If the same malfunction is detected regardless of the driving condition, reset the B counter.
- When the above is satisfied without detecting the same malfunction, count up the B counter.
- When the B counter reaches 3 without malfunction, MIL goes off.
- When the B counter is counted once without detecting the same malfunction after TCM memorizes DTC of the 1st trip, DTC of the 1st trip is erased.

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

TIME CHART



CONSULT Function

INFOID:0000000011220271

CAUTION:

After disconnecting the CONSULT vehicle interface (VI) from the data link connector, the ignition must be cycled OFF → ON (for at least 5 seconds) → OFF. If this step is not performed, the BCM may not go to “sleep mode”, potentially causing a discharged battery and a no-start condition.

APPLICABLE ITEM

Conditions	Function
Work Support	The settings for ECU functions can be changed.
Self Diagnostic Results	The ECU self diagnostic results are displayed.
Data Monitor	The ECU input/output data is displayed in real time.
CAN Diagnosis Support Monitor	The result of transmit/receive diagnosis of CAN communication is displayed.
ECU Identification	The ECU part number is displayed.
CALIB DATA	The calibration data status of TCM can be checked.

SELF DIAGNOSTIC RESULTS

Refer to [TM-59. "DTC Index"](#).

DTC at 1st trip and method to read DTC

- DTC (P0705, P0711, P0720, etc.) is specified by SAE J2012/ISO 15031-6.
- DTC and DTC at 1st trip are 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".
- When the DTC at the 1st trip is detected, "1t" is displayed.

DTC deletion method

NOTE:

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

The ignition counter is displayed in "FFD" and the number of times of satisfied "Driving condition A" is displayed after normal recovery of DTC. Refer to [TM-40. "DIAGNOSIS DESCRIPTION : Counter System"](#).

- If malfunction (DTC) is currently detected, "0" is displayed.
- After normal recovery, every time "Driving condition A" is satisfied, the display value increases from 1 → 2 → 3...38 → 39.
- When MIL turns OFF due to the malfunction and the counter reaches 40, the DTC is erased.

NOTE:

The counter display of "40" cannot be checked.

DATA MONITOR

NOTE:

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

Monitored item	(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 (ABS) received through CAN communication. • Models with ABS are displayed.
INPUT SPEED SENSOR	(rpm)	Displays the input speed calculated from the pulse signal of the input speed sensor.
PRI SPEED SEN	(rpm)	Displays the primary pulley speed calculated from the pulse signal of the primary speed sensor.
SEC REV SENSOR	(rpm)	Displays the secondary pulley speed calculated from the pulse signal of the output speed sensor.
ENG SPEED SIG	(rpm)	Displays the engine speed received through CAN communication.
SEC PRESSURE SEN	(V)	Displays the signal voltage of the secondary pressure sensor.
PRI PRESSURE 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.
G SENSOR	(G)	Displays the signal voltage of the G sensor.

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

Monitored item	(Unit)	Remarks
VIGN SEN	(V)	Displays the battery voltage applied to TCM.
PVING VOLT	(V)	Displays the backup voltage of TCM.
VEHICLE SPEED	(km/h or mph)	Displays the vehicle speed recognized by TCM.
INPUT REV	(rpm)	Displays the input shaft speed of CVT 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.
PULLEY 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	(deg)	Displays the estimated throttle position received through CAN communication.
VENG TRQ	(Nm)	Display the engine torque recognized by TCM.
PRI TRQ	(Nm)	Display the input shaft torque of CVT.
TRQ RTO		Display the torque ratio of torque converter.
SEC PRESSURE	(MPa)	Displays the secondary pressure calculated from the signal voltage of the secondary pressure sensor.
PRI PRESSURE	(MPa)	Displays the primary pressure calculated from the signal voltage of the primary pressure sensor.
FLUID TEMP	(°C or °F)	Displays the CVT fluid temperature calculated from the signal voltage of the CVT fluid temperature sensor.
DSR REV	(rpm)	Displays the target primary pulley speed calculated from processing of gear shift control.
TGT PLY GR RATIO		Displays the target gear ratio of the pulley 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.
TRGT PRI PRESSURE	(MPa)	Displays the target oil pressure of the primary pressure solenoid valve calculated from oil pressure processing of gear shift control.
TRGT SELECT PRESSURE	(MPa)	Displays the target oil pressure of the select solenoid valve calculated from oil pressure processing of gear shift control.
TRGT SEC PRESSURE	(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.
PRI SOLENOID	(A)	Displays the command current from TCM to the primary pressure solenoid valve.
SEC SOLENOID CURRENT	(A)	Displays the command current from TCM to the secondary pressure solenoid valve.
SELECT SOLENOID CURRENT	(A)	Displays the command current from TCM to the select 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.
PRI SOL MON	(A)	Monitors the command current from TCM to the primary pressure solenoid valve and displays the monitored value.

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

Monitored item	(Unit)	Remarks
SEC SOL MON CURRENT	(A)	Monitors the command current from TCM to the secondary pressure solenoid valve and displays the monitored value.
SELECT SOL MON CURRENT	(A)	Monitors the command current from TCM to the select solenoid valve and displays the monitored value.
D POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (D position).
N POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (N position).
R POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (R position).
P POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (P position).
L POSITION SW*	(On/Off)	Displays the operation status of the transmission range switch (L position).
DS RANGE SW*	(On/Off)	Displays the operation status of the transmission range switch (DS position).
BRAKESW	(On/Off)	Displays the reception status of the stop lamp switch signal received through CAN communication.
IDLE SW	(On/Off)	Displays the reception status of the closed throttle position signal received through CAN communication.
SPORT MODE SW*	(On/Off)	Displays the reception status of the overdrive control switch signal received through CAN communication.
ECO MODE SW*	(On/Off)	Displays the reception status of the ECO mode switch signal received through CAN communication.
STRDWSW*	(On/Off)	Displays the operation status of the paddle shifter (down switch).
STRUPSW*	(On/Off)	Displays the operation status of the paddle shifter (up switch).
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.
TOW MODE SW*	(On/Off)	Displays the reception status of the TOW mode switch signal received through CAN communication.
SHIFT IND SIGNAL		Displays the transaxle value of shift position signal transmitted via CAN communication.
CVT LAMP*	(On/Off)	Displays the transaxle status of the CVT warning lamp signal transmitted through CAN communication.
SPORT MODE IND*	(On/Off)	Displays the transaxle status of the O/D OFF indicator lamp signal transmitted through CAN communication.
MANU MODE SIGNAL	(On/Off)	Displays the transaxle status of the manual mode signal transmitted through CAN communication.
DS RANGE SIGNAL*	(On/Off)	Displays the shift position signal status from transmission range switch (DS position).
ECO MODE SIGNAL*	(On/Off)	Displays the transaxle status of the ECO mode signal transmitted through CAN communication.
VDC ON	(On/Off)	Displays the reception status of the VDC operation signal received through CAN communication.
TCS ON	(On/Off)	Displays the reception status of the TCS operation signal received through CAN communication.
ABS FAIL SIGNAL	(On/Off)	Displays the reception status of the ABS malfunction signal received through CAN communication.
ABS ON	(On/Off)	Displays the reception status of the ABS operation signal received through CAN communication.
RANGE		Displays the gear position recognized by TCM.
M GEAR POS		Display the target gear of manual mode
G SEN SLOPE	(%)	Displays the gradient angle calculated from the G sensor signal voltage.
G SEN CALIBRATION	(YET/DONE)	Displays the status of "G SENSOR CALIBRATION" in "Work Support".

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10J]

Monitored item	(Unit)	Remarks
N IDLE STATUS*	(On/Off)	Displays idle neutral status.
ENGBRKLVL	(On/Off)	Displays the setting of "ENGINE BRAKE ADJ" in "Work Support".
DRIVE MODE STATS		Displays the drive mode status recognized by TCM.
SNOW MODE	(On/Off)	Displays whether it is the SNOW mode.
ECO MODE	(On/Off)	Displays whether it is the ECO mode.
NORMAL MODE	(On/Off)	Displays whether it is the NORMAL mode.
SPORT MODE	(On/Off)	Displays whether it is the SPORT mode.
AIR BLDING STATE*	(INCOMP/COMP)	Displays the status of "ELECTRIC O.P. AIR BLEEDING" in "Work Support".
ELECTRIC OP DUTY*	(%)	Displays the command signal value (duty) of the electric oil pump transmitted from TCM.
E-OP DUTY MON*	(%)	Monitors the status signal value (duty) transmitted from the electric oil pump and displays the monitored value.
ELECTRIC OP RELAY*	(On/Off)	Displays the command status from TCM to the electric oil pump relay.
E-OP RELAY MON*	(On/Off)	Monitors the command status from TCM to the oil pump relay and displays the monitored value.
CVT-B		- Displays CVT fluid temperature count. - This monitor item does not use.
CVT-A	(On/Off)	- Displays CVT fluid temperature count. - This monitor item does not use.
DRIVE SYSTEM		Displays the drive mode.

*: Not applicable but displayed.

WORK SUPPORT

Item name	Description
CONFORM CVTF DETERIORTN	Checks the degradation level of the CVT fluid under severe conditions.
ERASE MEMORY DATA	Performs "erasing of the calibration data" and "erasing of the learned value" at the same time.
G SENSOR CALIBRATION	Compensates the G sensor.
ERASE LEARNING VALUE	Erases learning value memorized by TCM.
ENGINE BRAKE ADJ.	Although there is no malfunction on the transaxle and the CVT system, if a customer make a complaint like "I do not feel comfortable with automatic operation of the engine brake on downhill", the engine brake may be cancelled with "engine brake adjustment".
ERASE CALIBRATION DATA	Erases calibration data memorized by TCM.
WRITE IP CHARA - REPLACEMENT AT/CVT	Writes IP characteristics when transaxle assembly is replaced.
READ IP CHARA - REPLACEMENT TCM	Reads IP characteristics when TCM is replaced.
WRITE IP CHARA - REPLACEMENT TCM	Writes IP characteristics when TCM is replaced.

Engine brake adjustment

ENGINE BRAKE LEVEL

- ON : Turn ON the engine brake control.
 OFF : Turn OFF the engine brake control.

Check the degradation level of the CVT fluid.

CVTF degradation level data

- 210,000 or more : Replacement of the CVT fluid is required.
 Less than 210,000 : Replacement of the CVT fluid is not required.

ECU DIAGNOSIS INFORMATION

TCM

Reference Value

INFOID:0000000011220272

CONSULT DATA MONITOR STANDARD VALUE

- In CONSULT, electric shift timing or lock-up timing, i.e. operation timing of each solenoid valve, is displayed. Therefore, if there is an obvious difference between the shift timing estimated from a shift shock (or engine speed variations) and that shown on the CONSULT, the mechanism parts (including the hydraulic circuit) excluding the solenoids and sensors may be malfunctioning. In this case, check the mechanical parts following the appropriate diagnosis procedure.
- Shift point (gear position) displayed on CONSULT slightly differs from shift pattern described in Service Manual. This is due to the following reasons.
 - Actual shift pattern may vary slightly within specified tolerances.
 - While shift pattern described in Service Manual indicates start of each shift, CONSULT shows gear position at end of shift.
 - The solenoid display (ON/OFF) on CONSULT is changed at the start of gear shifting. In contrast, the gear position display is changed at the time when gear shifting calculated in the control unit is completed.

NOTE:

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

Monitor item	Condition	Value/Status (Approx.)
VSP SENSOR	While driving	Almost same as the speedometer display.
ESTM VSP SIG	While driving	Almost same as the speedometer display.
INPUT SPEED SENSOR	In driving (lock-up ON)	Approximately matches the engine speed.
PRI SPEED SEN	In driving (lock-up ON)	Approximately matches the engine speed.
SEC REV SENSOR	While driving	VSP SENSOR × 40
ENG SPEED SIG	Engine running	Almost same reading as tachometer
SEC PRESSURE SEN	• After engine warm up • Selector lever: "N" position • At idle	1.7 – 1.8 V
PRI PRESSURE SEN	• After engine warm up • Selector lever: "N" position • At idle	1.32 – 1.34 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
G SENSOR	Always	0 V
VIGN SEN	Ignition switch: ON	10.0 – 16.0 V
PVIGN VOLT	Ignition switch: ON	10.0 – 16.0 V
VEHICLE SPEED	While driving	Almost same as the speedometer display.
INPUT REV	In driving (lock-up ON)	Almost same as the engine speed.
PRI SPEED	In driving (lock-up ON)	Approximately matches the engine speed.
SEC SPEED	While driving	VSP SENSOR × 40
ENG SPEED	Engine running	Almost same reading as tachometer
SLIP REV	While driving	Engine speed – Input speed
PULLEY GEAR RATIO	In driving (forward)	2.43 – 0.38
	In driving (reverse)	2.43

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10J]

Monitor item	Condition	Value/Status (Approx.)
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	Accelerator pedal released	0.00 deg
	Accelerator pedal fully depressed	80.00 deg
VENG TRQ	While driving	The value changes along with acceleration/ deceleration.
PRI TRQ	While driving	The value changes along with acceleration/ deceleration.
TRQ RTO	While driving	The value changes along with acceleration/ deceleration.
SEC PRESSURE	- After engine warm up - Selector lever: "N" position - At idle	1.800 MPa
PRI PRESSURE	- After engine warm up - Selector lever: "N" position - At idle	1.100 MPa
FLUID TEMP	Ignition switch ON.	Displays the CVT fluid temperature.
DSR REV	While driving	It varies along with the driving condition.
TGT PLY GR RATIO	In driving (forward)	2.43 – 0.38
	In driving (reverse)	2.43
LU PRS	- Engine started - Vehicle is stopped.	–0.50 MPa
	- Selector lever: "D" position - Accelerator pedal position: 1/8 or less - Vehicle speed: 20 km/h (12 MPH) or more	0.45 MPa
LINE PRS	- After engine warm up - Selector lever: "N" position - At idle	1.800 MPa
	- After engine warm up - Selector lever: "N" position - Depress the accelerator pedal fully	4.930 – 5.430 MPa
TRGT PRI PRESSURE	- After engine warm up - Selector lever: "N" position - At idle	1.100 MPa
TARGET SELECT PRESSURE	- After engine warm up - Selector lever: "N" position - At idle	0.000 MPa
TARGET SEC PRESSURE	- After engine warm up - Selector lever: "N" position - At idle	1.800 MPa
ISOLT1	- Engine started - Vehicle is stopped.	0.000 A
	- Selector lever: "D" position - Accelerator pedal position: 1/8 or less - Vehicle speed: 20 km/h (12 MPH) or more	0.500 A

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10J]

Monitor item	Condition	Value/Status (Approx.)
ISOLT2	- After engine warm up - Selector lever: "N" position - At idle	0.750 – 0.800 A
	- After engine warm up - Selector lever: "N" position - Depress the accelerator pedal fully	0.350 – 0.400 A
PRI SOLENOID	- After engine warm up - Selector lever: "N" position - At idle	0.750 – 0.800 A
SEC SOLENOID CURRENT	- After engine warm up - Selector lever: "N" position - At idle	0.750 A
SELECT SOLENOID CURRENT	- After engine warm up - Selector lever: "N" position - At idle	1.000 A
SOLMON1	- Engine started - Vehicle is stopped.	0.000 A
	- Selector lever: "D" position - Accelerator pedal position: 1/8 or less - Vehicle speed: 20 km/h (12 MPH) or more	0.500 A
SOLMON2	- After engine warm up - Selector lever: "N" position - At idle	0.800 – 0.900 A
	- After engine warm up - Selector lever: "N" position - Depress the accelerator pedal fully	0.350 – 0.400 A
PRI SOL MON	- After engine warm up - Selector lever: "N" position - At idle	0.850 – 0.900 A
SEC SOL MON CURRENT	- After engine warm up - Selector lever: "N" position - At idle	0.750 A
SELECT SOL MON CURRENT	- After engine warm up - Selector lever: "N" position - At idle	1.000 A
D POSITION SW	Selector lever: "D" position	On
	Other than the above	Off
N POSITION SW	Selector lever: "N" position	On
	Other than the above	Off
R POSITION SW	Selector lever: "R" position	On
	Other than the above	Off
P POSITION SW	Selector lever: "P" position	On
	Other than the above	Off
L POSITION SW	Always	Off
DS RANGE SW	Always	Off
BRAKESW	Brake pedal is depressed	On
	Brake pedal is released	Off
IDLE SW	Accelerator pedal is released	On
	Accelerator pedal is fully depressed	Off
SPORT MODE SW	Always	Off
ECO MODE SW	Always	Off

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10J]

Monitor item	Condition	Value/Status (Approx.)
STRDWNSW	Always	Off
STRUPSW	Always	Off
DOWNLVR	Selector lever: -side	On
	Other than the above	Off
UPLVR	Selector lever: +side	On
	Other than the above	Off
NONMMODE	Manual shift gate position (neutral, +side, -side)	Off
	Other than the above	On
MMODE	Manual shift gate position (neutral, +side, -side)	On
	Other than the above	Off
TOW MODE SW	Always	Off
SHIFT IND SIGNAL	When the selector lever is positioned in between each position.	OFF
	Selector lever: P position	P
	Selector lever: R position	R
	Selector lever: N position	N
	Selector lever: D position	D
	Manual mode: 1st	1st
	Manual mode: 2nd	2nd
	Manual mode: 3rd	3rd
	Manual mode: 4th	4th
	Manual mode: 5th	5th
	Manual mode: 6th	6th
	Manual mode: 7th	7th
CVT LAMP	Approx. 2 seconds after ignition switch ON	On
	Other than the above	Off
SPORT MODE IND	Always	Off
MANU MODE SIGNAL	Driving with manual mode	On
	Other than the above	Off
DS RANGE SIGNAL	Always	Off
ECO MODE SIGNAL	Always	Off
VDC ON	VDC is activated	On
	Other than the above	Off
TCS ON	TCS is activated	On
	Other than the above	Off
ABS FAIL SIGNAL	When ABS malfunction signal is received	On
	Other than the above	Off
ABS ON	ABS is activated	On
	Other than the above	Off
RANGE	Selector lever: P and N positions	N/P
	Selector lever: R position	R
	Selector lever: D position	D
	Selector lever: M position	

TCM

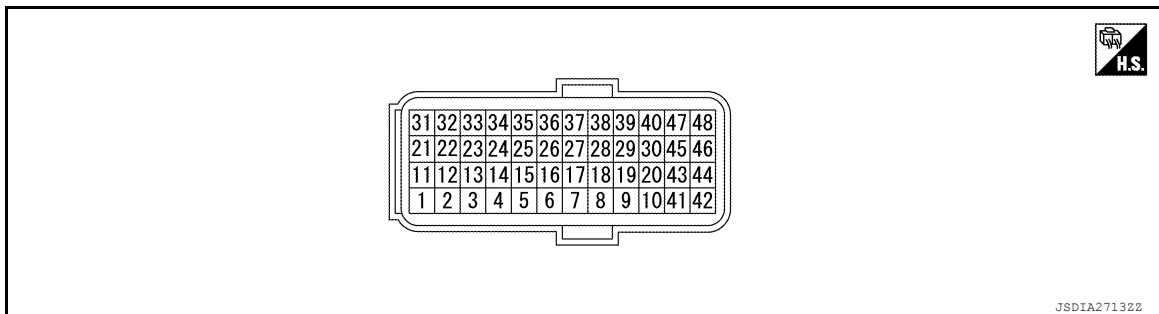
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[CVT: RE0F10J]

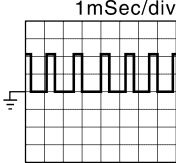
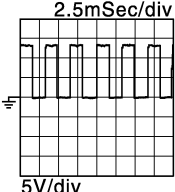
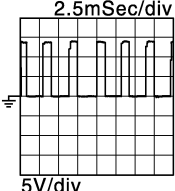
Monitor item	Condition	Value/Status (Approx.)
M GEAR POS	Manual mode: 1st – 7th	1 to 7
G SEN SLOPE	Flat road	0%
	Uphill gradient	The value changes to the positive side along with uphill gradient. (Maximum 40.45%)
	Downhill gradient	The value changes to the negative side along with downhill gradient. (Minimum – 40.45%)
G SEN CALIBRATION	When G sensor calibration is completed	DONE
	When G sensor calibration is not completed	YET
N IDLE STATUS	Always	Off
ENGBRKLVL	When the engine brake level of "ENGINE BRAKE ADJ." in "Work Support" is ON	On
	When the engine brake level of "ENGINE BRAKE ADJ." in "Work Support" is OFF	Off
DRIVE MODE STATS	While drive in D position	AUTO
SNOW MODE	Always	Off
ECO MODE	Always	Off
NORMAL MODE	Always	Off
SPORT MODE	Always	Off
AIR BLDING STATE	Always	COMP
ELECTRIC OP DUTY	Always	0%
E-OP DUTY MON	Always	0%
ELECTRIC OP RELAY	Always	Off
E-OP RELAY MON	Always	Off
CVT-A*	—	—
CVT-B*	—	—
DRIVE SYSTEM	Drive mode: 2WD	2WD
	Drive mode: 4WD	4WD

*: This monitor items does not use.

TERMINAL LAYOUT



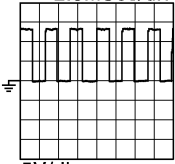
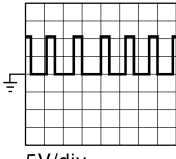
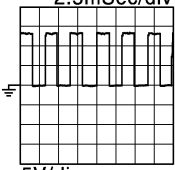
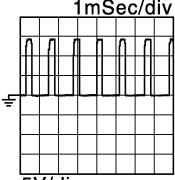
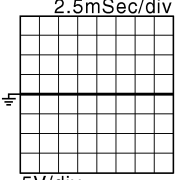
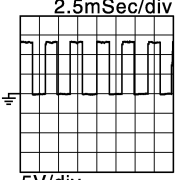
INPUT/OUTPUT SIGNAL STANDARD

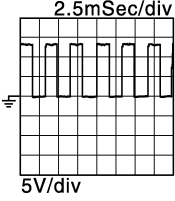
Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	—	Signal	Input/ Output			
2* (SB)	—	—	—	—		—
4 (Y)	Ground	D position switch	Input	Ignition switch ON	Selector lever: "D" position	10 – 16 V
					Other than the above	0 V
5 (L)	Ground	N position switch	Input		Selector lever: "N" position	10 – 16 V
					Other than the above	0 V
6 (BR)	Ground	R position switch	Input		Selector lever: "R" position	10 – 16 V
					Other than the above	0 V
7 (V)	Ground	P position switch	Input		Selector lever: "P" position	10 – 16 V
					Other than the above	0 V
11 (Y)	Ground	Sensor ground	—	Always		0 V
12 (W)	Ground	CVT fluid temperature sensor	Output	Ignition switch ON	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
16 (Y)	Ground	Secondary pressure sensor	Input	- Selector lever: "N" position - At idle		1.7 – 1.8 V
17 (LG)	Ground	Primary pressure sensor	Input	- Selector lever: "N" position - At idle		1.32 – 1.34 V
23 (P)	—	CAN-L	Input/ Output	—		—
24 (SB)	Ground	Input speed sensor	Input	- Selector lever: "M1" position - Vehicle speed: 20 km/h (12 MPH)		800 Hz  5V/div JSDIA3770GB
26 (V)	Ground	Sensor power supply	Output	Ignition switch: ON		5.0 V
				Ignition switch: OFF		0 V
30 (SB)	Ground	Line pressure solenoid valve	Output	- After engine warming up - Selector lever: "N" position - At idle		 5V/div JSDIA1897GB
				- After engine warming up - Selector lever: "N" position - Depress the accelerator pedal fully		 5V/div JSDIA1898GB

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10J]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	—	Signal	Input/ Output		
33 (L)	—	CAN-H	Input/ Output	—	—
34 (BR)	Ground	Output speed sensor	Input	- Selector lever: "M1" position - Vehicle speed: 20 km/h (12 MPH)	200 Hz 2.5mSec/div  5V/div JSDIA1897GB
35 (LG)	Ground	Primary speed sensor	Input	- Selector lever: "M1" position - Vehicle speed: 20 km/h (12 MPH)	600 Hz 1mSec/div  5V/div JSDIA3770GB
37 (BR)	Ground	Select solenoid valve	Output	- Engine started - Vehicle is stopped - Selector lever: "N" position	2.5mSec/div  5V/div JSDIA1897GB
38 (Y)	Ground	Torque converter clutch solenoid valve	Output	- Selector lever: "D" position - Accelerator pedal position: 1/8 or less - Vehicle speed: 20 km/h (12 MPH) or more	1mSec/div  5V/div JSDIA1900GB
				- Engine started - Vehicle is stopped	2.5mSec/div  5V/div JSDIA1903GB
39 (L)	Ground	Secondary pressure solenoid valve	Output	- Selector lever: "M1" position - Vehicle speed: 20 km/h (12 MPH)	2.5mSec/div  5V/div JSDIA1897GB

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal	Input/ Output		
40 (V)	Ground	Primary pressure solenoid valve	Output	- Selector lever: "M1" position - Vehicle speed: 20 km/h (12 MPH)	 2.5mSec/div 5V/div JSDIA1897GB
41 (B)	Ground	Ground	Output	Always	0 V
42 (B)	Ground	Ground	Output	Always	0 V
45 (P)	Ground	Power (backup)	Input	Always	10 – 16 V
46 (P)	Ground	Power (backup)	Input	Always	10 – 16 V
47 (Y)	Ground	Power supply	Input	Ignition switch: ON	10 – 16 V
				Ignition switch: OFF	0 V
48 (Y)	Ground	Power supply	Input	Ignition switch: ON	10 – 16 V
				Ignition switch: OFF	0 V

*: This harness does not use.

Fail-safe

INFOID:0000000011220273

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.

If the vehicle shows following behaviors including "poor acceleration", a malfunction of the applicable system is detected by TCM and the vehicle may be in a fail-safe mode. At this time, check the DTC code and perform inspection and repair according to the malfunction diagnosis procedures.

Fail-safe function

DTC	Vehicle behavior	Conditions of vehicle
P062F	Not changed from normal driving	—
P0705	- Shift position indicator on combination meter is not displayed - Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—
P0706	- Shift position indicator on combination meter is not displayed - Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—

DTC	Vehicle behavior	Conditions of vehicle	
P0711	- Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	A
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	B
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)	C
P0712	- Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	TM
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	E
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)	F
P0713	- Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	F
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	G
	- Selector shock is large - Start is slow - Acceleration is slow	Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)	H
P0715	- Start is slow - Acceleration is slow - Lock-up is not performed - Manual mode is not activated	—	I
P0717	- Start is slow - Acceleration is slow - Lock-up is not performed	—	J
P0740	- Start is slow - Acceleration is slow - Lock-up is not performed	—	K
P0743	- Start is slow - Acceleration is slow - Lock-up is not performed	—	L
P0744	- Start is slow - Acceleration is slow - Lock-up is not performed	—	M
P0746	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—	N
P0776	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed - Vehicle speed is not increased	When a malfunction occurs on the low oil pressure side	O
	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	When a malfunction occurs on the high oil pressure side	P
P0778	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—	

DTC	Vehicle behavior	Conditions of vehicle
P0779	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P0826	Manual mode is not activated	—
P0841	Not changed from normal driving	—
P0847	Not changed from normal driving	—
P0848	Not changed from normal driving	—
P084C	Not changed from normal driving	—
P084D	Not changed from normal driving	—
P0863	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P0890	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed • Vehicle speed is not increased	—
P0962	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P0963	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P0965	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	When a malfunction occurs on the low oil pressure side
	• Selector shock is large • Lock-up is not performed	When a malfunction occurs on the high oil pressure side
P0966	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P0967	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—
P2765	• Start is slow • Acceleration is slow • Lock-up is not performed • Manual mode is not activated	—
P2813	• Selector shock is large • Start is slow • Acceleration is slow • Vehicle speed is not increased	When a malfunction occurs on the low oil pressure side
	Selector shock is large	When a malfunction occurs on the high oil pressure side
P2814	Selector shock is large	—
P2815	Selector shock is large	—
U0073	• Selector shock is large • Start is slow • Acceleration is slow • Lock-up is not performed	—

DTC	Vehicle behavior	Conditions of vehicle
U0100	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—
U0102	Not changed from normal driving	—
U0121	Not changed from normal driving	—
U0140	Not changed from normal driving	—
U0141	Not changed from normal driving	—
U0155	Not changed from normal driving	—
U0164	Not changed from normal driving	—
U0300	- Selector shock is large - Start is slow - Acceleration is slow - Lock-up is not performed	—
U1000	Not changed from normal driving	—
U1117	Not changed from normal driving	—
U1118	Not changed from normal driving	—

Protection Control

INFOID:0000000011220274

The TCM becomes the protection control status temporarily to protect the safety when the safety of TCM and transmission is lost. It automatically returns to the normal status if the safety is secured.

The TCM has the following protection control.

CONTROL FOR WHEEL SPIN

Control	When a wheel spin is detected, the engine output and gear ratio are limited and the line pressure is increased. Limits engine output when a wheel spin occurs in any of right and left drive wheels.
Vehicle behavior in control	If the accelerator is kept depressing during wheel spin, the engine revolution and vehicle speed are limited to a certain degree.
Normal return condition	Wheel spin convergence returns the control to the normal control.

TORQUE IS REDUCED WHEN DRIVING WITH THE REVERSE GEAR

Control	Engine output is controlled according to a vehicle speed while reversing the vehicle.
Vehicle behavior in control	Power performance may be lowered while reversing the vehicle.
Normal return condition	Torque returns to normal by positioning the selector lever in a range other than "R" position.

CONTROL WHEN FLUID TEMPERATURE IS HIGH

Control	When the CVT fluid temperature is high, the gear shift permission maximum revolution and the maximum torque are reduced than usual to prevent increase of the oil temperature.
Vehicle behavior in control	Power performance may be lowered, compared to normal control.
Normal return condition	The control returns to the normal control when CVT fluid temperature is lowered.

REVERSE PROHIBIT CONTROL

Control	The reverse brake is controlled to avoid becoming engaged when the selector lever is set in "R" position while driving in forward direction at more than the specified speed.
---------	---

Vehicle behavior in control	If the selector lever is put at "R" position when driving with the forward gear, the gear becomes neutral, not reverse.
Normal return condition	The control returns to normal control when the vehicle is driven at low speeds. (The reverse brake becomes engaged.)

DTC Inspection Priority Chart

INFOID:0000000011220275

If multiple malfunction codes are detected at the same time, check each code according to the DTC check priority list below.

Priority	DTC	Items (CONSULT screen terms)	Reference
1	P0863	CONTROL UNIT (CAN)	TM-155, "DTC Description"
	U0073	COMM BUS A OFF	TM-90, "DTC Description"
	U0100	LOST COMM (ECM A)	TM-91, "DTC Description"
	U0102	LOST COMM (TRANSFER)	TM-92, "DTC Description"
	U0121	LOST COMM (ABS)	TM-93, "DTC Description"
	U0140	LOST COMM (BCM)	TM-94, "DTC Description"
	U0141	LOST COMM (BCM A)	TM-95, "DTC Description"
	U0155	LOST COMM (IPC)	TM-96, "DTC Description"
	U0164	LOST COMM (HVAC)	TM-97, "DTC Description"
	U0300	CAN COMM DATA	TM-98, "DTC Description"
	U1000	CAN COMM CIRC	TM-100, "DTC Description"
	U1117	LOST COMM (ABS)	TM-101, "DTC Description"
	U1118	LOST COMM (AV C/U)	TM-102, "DTC Description"
2	P0740	TORQUE CONVERTER	TM-128, "DTC Description"
	P0743	TORQUE CONVERTER	TM-130, "DTC Description"
	P0778	PC SOLENOID B	TM-138, "DTC Description"
	P0779	PC SOLENOID B	TM-140, "DTC Description"
	P0962	PC SOLENOID A	TM-158, "DTC Description"
	P0963	PC SOLENOID A	TM-160, "DTC Description"
	P0966	PC SOLENOID B	TM-164, "DTC Description"
	P0967	PC SOLENOID B	TM-166, "DTC Description"
	P2814	SELECT SOLENOID	TM-174, "DTC Description"
	P2815	SELECT SOLENOID	TM-176, "DTC Description"

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10J]

Priority	DTC	Items (CONSULT screen terms)	Reference
3	P062F	EEPROM	TM-103, "DTC Description"
	P0705	T/M RANGE SENSOR A	TM-105, "DTC Description"
	P0706	T/M RANGE SENSOR A	TM-110, "DTC Description"
	P0711	FLUID TEMP SENSOR A	TM-113, "DTC Description"
	P0712	FLUID TEMP SENSOR A	TM-118, "DTC Description"
	P0713	FLUID TEMP SENSOR A	TM-120, "DTC Description"
	P0715	INPUT SPEED SENSOR A	TM-122, "DTC Description"
	P0717	INPUT SPEED SENSOR A	TM-125, "DTC Description"
	P0826	UP/DOWN SHIFT SWITCH	TM-142, "DTC Description"
	P0841	FLUID PRESS SEN/SW A	TM-145, "DTC Description"
	P0847	FLUID PRESS SEN/SW B	TM-147, "DTC Description"
	P0848	FLUID PRESS SEN/SW B	TM-149, "DTC Description"
	P084C	FLUID PRESS SEN/SW H	TM-151, "DTC Description"
	P084D	FLUID PRESS SEN/SW H	TM-153, "DTC Description"
	P0890	TCM	TM-156, "DTC Description"
	P2765	INPUT SPEED SENSOR B	TM-168, "DTC Description"
4	P0744	TORQUE CONVERTER	TM-132, "DTC Description"
	P0746	PC SOLENOID A	TM-134, "DTC Description"
	P0776	PC SOLENOID B	TM-136, "DTC Description"
	P0965	PC SOLENOID B	TM-162, "DTC Description"
	P2813	SELECT SOLENOID	TM-172, "DTC Description"

DTC Index

INFOID:0000000011220276

NOTE:

- If multiple malfunction codes are detected at the same time, check each code according to the "DTC check priority list". [TM-58, "DTC Inspection Priority Chart"](#).
- The ignition counter is displayed in "FFD". Refer to [TM-42, "CONSULT Function"](#).

DTC*1, *2		Items (CONSULT screen terms)	Trip	MIL*3	Perman- ent DTC group*4	Reference
GST	CONSULT (TRANSMISSION)					
P062F	P062F	EEPROM	1	ON	B	TM-103
P0705	P0705	T/M RANGE SENSOR A	2	ON	B	TM-105
P0706	P0706	T/M RANGE SENSOR A	2	ON	B	TM-110
P0711	P0711	FLUID TEMP SENSOR A	2	ON	A	TM-113
P0712	P0712	FLUID TEMP SENSOR A	2	ON	B	TM-118
P0713	P0713	FLUID TEMP SENSOR A	2	ON	B	TM-120
P0715	P0715	INPUT SPEED SENSOR A	2	ON	B	TM-122
P0717	P0717	INPUT SPEED SENSOR A	2	ON	B	TM-125
P0740	P0740	TORQUE CONVERTER	2	ON	B	TM-128
P0743	P0743	TORQUE CONVERTER	2	ON	B	TM-130
P0744	P0744	TORQUE CONVERTER	2	ON	B	TM-132
P0746	P0746	PC SOLENOID A	2	ON	B	TM-134
P0776	P0776	PC SOLENOID B	2	ON	B	TM-136
P0778	P0778	PC SOLENOID B	2	ON	B	TM-138

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10J]

DTC*1, *2		Items (CONSULT screen terms)	Trip	MIL *3	Perma- nent DTC group*4	Reference
GST	CONSULT (TRANSMISSION)					
P0779	P0779	PC SOLENOID B	2	ON	B	TM-140
—	P0826	UP/DOWN SHIFT SWITCH	1	—	—	TM-142
P0841	P0841	FLUID PRESS SEN/SW A	2	ON	B	TM-145
P0847	P0847	FLUID PRESS SEN/SW B	2	ON	B	TM-147
P0848	P0848	FLUID PRESS SEN/SW B	2	ON	B	TM-149
P084C	P084C	FLUID PRESS SEN/SW H	2	ON	B	TM-151
P084D	P084D	FLUID PRESS SEN/SW H	2	ON	B	TM-153
P0863	P0863	CONTROL UNIT (CAN)	1	ON	B	TM-155
P0890	P0890	TCM	1	ON	B	TM-156
P0962	P0962	PC SOLENOID A	2	ON	B	TM-158
P0963	P0963	PC SOLENOID A	2	ON	B	TM-160
P0965	P0965	PC SOLENOID B	2	ON	B	TM-162
P0966	P0966	PC SOLENOID B	2	ON	B	TM-164
P0967	P0967	PC SOLENOID B	2	ON	B	TM-166
P2765	P2765	INPUT SPEED SENSOR B	2	ON	B	TM-168
P2813	P2813	SELECT SOLENOID	2	ON	B	TM-172
P2814	P2814	SELECT SOLENOID	2	ON	B	TM-174
P2815	P2815	SELECT SOLENOID	2	ON	B	TM-176
U0073	U0073	COMM BUS A OFF	1	ON	B	TM-90
U0100	U0100	LOST COMM (ECM A)	1	ON	B	TM-91
—	U0102	LOST COMM (TRANSFER)	1	—	—	TM-92
—	U0121	LOST COMM (ABS)	1	—	—	TM-93
—	U0140	LOST COMM (BCM)	1	—	—	TM-94
—	U0141	LOST COMM (BCM A)	1	—	—	TM-95
—	U0155	LOST COMM (IPC)	1	—	—	TM-96
—	U0164	LOST COMM (HVAC)	1	—	—	TM-97
—	U0300	CAN COMM DATA	1	—	—	TM-98
—	U1000	CAN COMM CIRC	1	—	—	TM-100
—	U1117	LOST COMM (ABS)	1	—	—	TM-101
—	U1118	LOST COMM (AV C/U)	1	—	—	TM-102

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

*2: The DTC number of the 1st trip is the same as the DTC number.

*3: Refer to [TM-40, "DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp \(MIL\)"](#).

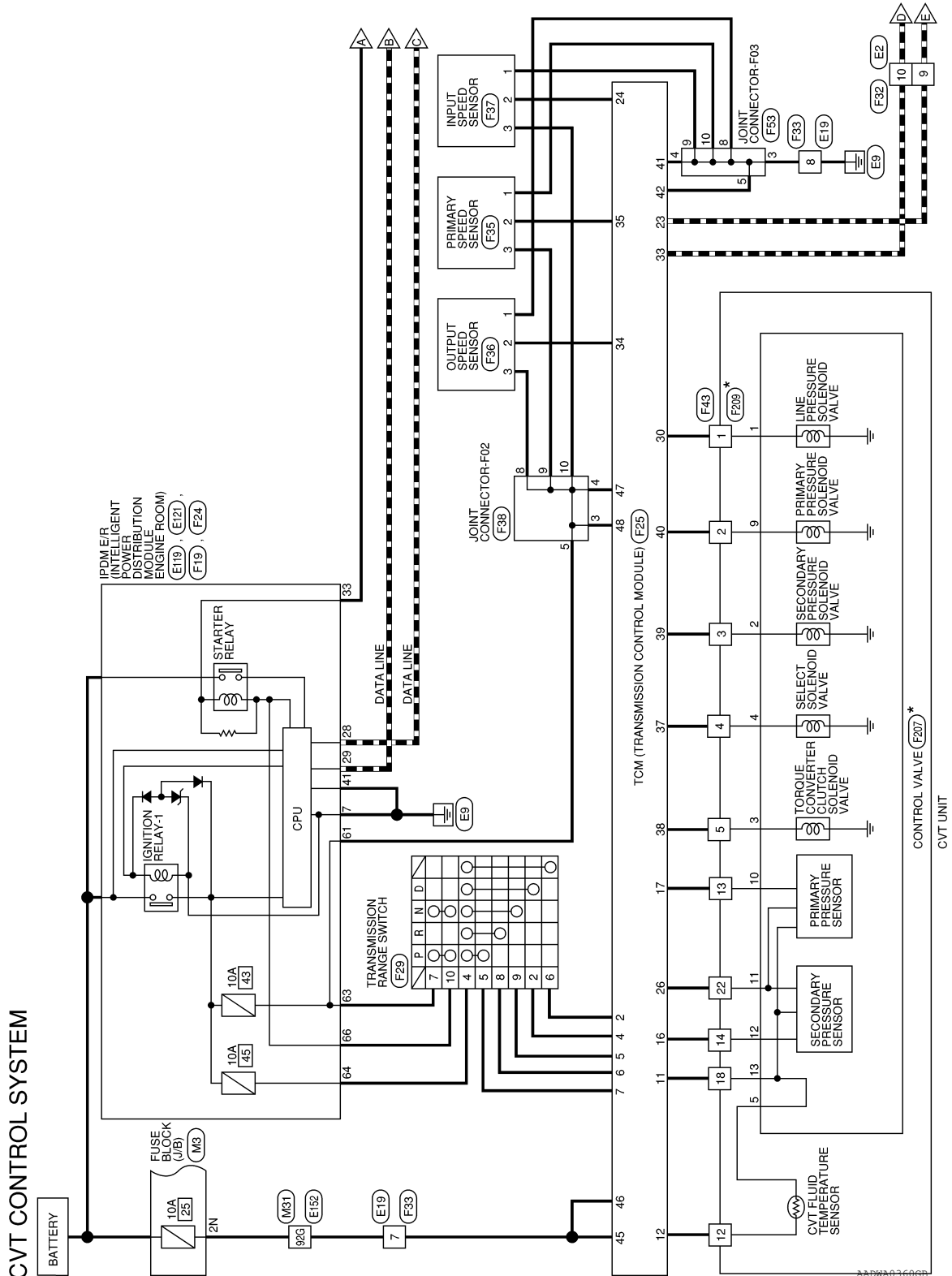
*4: Refer to [TM-89, "Description"](#).

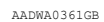
WIRING DIAGRAM

CVT CONTROL SYSTEM

Wiring diagram

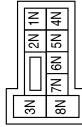
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CVT CONTROL SYSTEM CONNECTORS

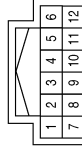
Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



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



Connector No.	M5
Connector Name	CAN GATEWAY
Connector Color	WHITE

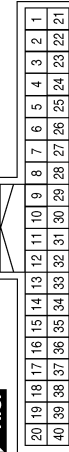


Terminal No.	Color of Wire	Signal Name
2N	BG	—
6N	W	—

Terminal No.	Color of Wire	Signal Name
8P	BG	—
9P	L	—
13P	W	—

Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
4	L	CAN-H
7	P	CAN-L
10	P	CAN-L

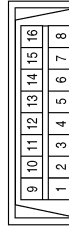
Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



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



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



Terminal No.	Color of Wire	Signal Name
26	L	SHORTING INPUT
27	G	BRAKE SW LAMP

Terminal No.	Color of Wire	Signal Name
59	P	CAN-L
60	L	CAN-H
62	W	STARTER RELAY OUT

Terminal No.	Color of Wire	Signal Name
6	L	—
12	P	—
13	L	—
14	P	—

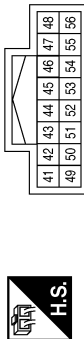
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

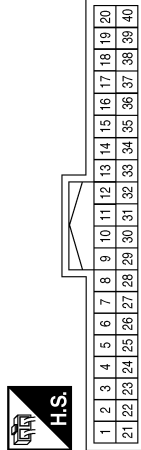
[CVT: RE0F10J]

Connector No.	M23
Connector Name	COMBINATION METER
Connector Color	WHITE



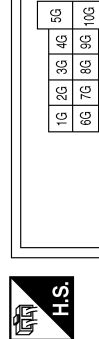
Terminal No.	Color of Wire	Signal Name
43	B	GND1
44	BG	POWER (IGN)
45	B	GND2
46	W	POWER (BAT)
52	P	CAN-L
53	L	CAN-H

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
30	V	M RANGE
31	P	NOT M RANGE
32	BG	AT SHIFT UP
33	W	AT SHIFT DOWN

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

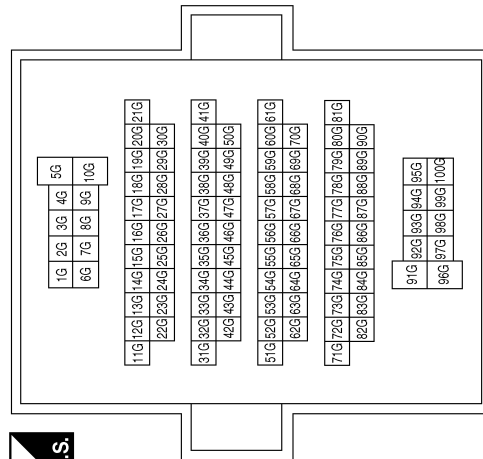


Terminal No.	Color of Wire	Signal Name
5G	L	-
11G	P	-
12G	L	-
25G	W	-
92G	BG	-

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



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



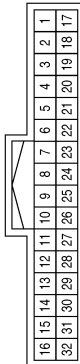
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

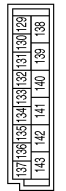
[CVT: RE0F10J]

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

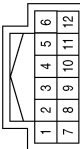
Terminal No.	Color of Wire	Signal Name
21	P	—
22	L	—
28	P	—
29	L	—

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

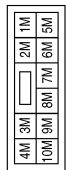
Terminal No.	Color of Wire	Signal Name
131	W	BAT BCM FUSE
134	GR	GND2
139	L	BAT POWER F/L
143	GR	GND1

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

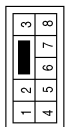
Terminal No.	Color of Wire	Signal Name
7	V	—
8	W	—
9	BG	—
10	P	—
11	B	—

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

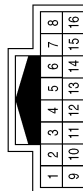
Terminal No.	Color of Wire	Signal Name
5M	W	—
8M	P	—

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

Terminal No.	Color of Wire	Signal Name
7	LG	—
8	B	—

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

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

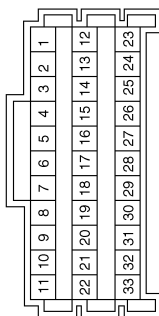
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10J]

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



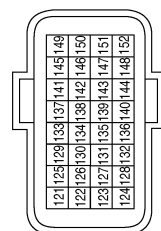
Terminal No.	Color of Wire	Signal Name
19	W	-
20	W	-
23	P	-
24	P	-

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



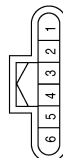
Terminal No.	Color of Wire	Signal Name
1	W	-
2	P	-

Connector No.	E32
Connector Name	ECM
Connector Color	BLACK



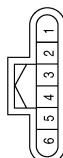
Terminal No.	Color of Wire	Signal Name
123	P	CAN-L
124	L	CAN-H

Connector No.	E71
Connector Name	JOINT CONNECTOR-E15
Connector Color	BLACK



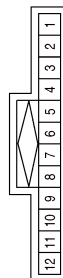
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-

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



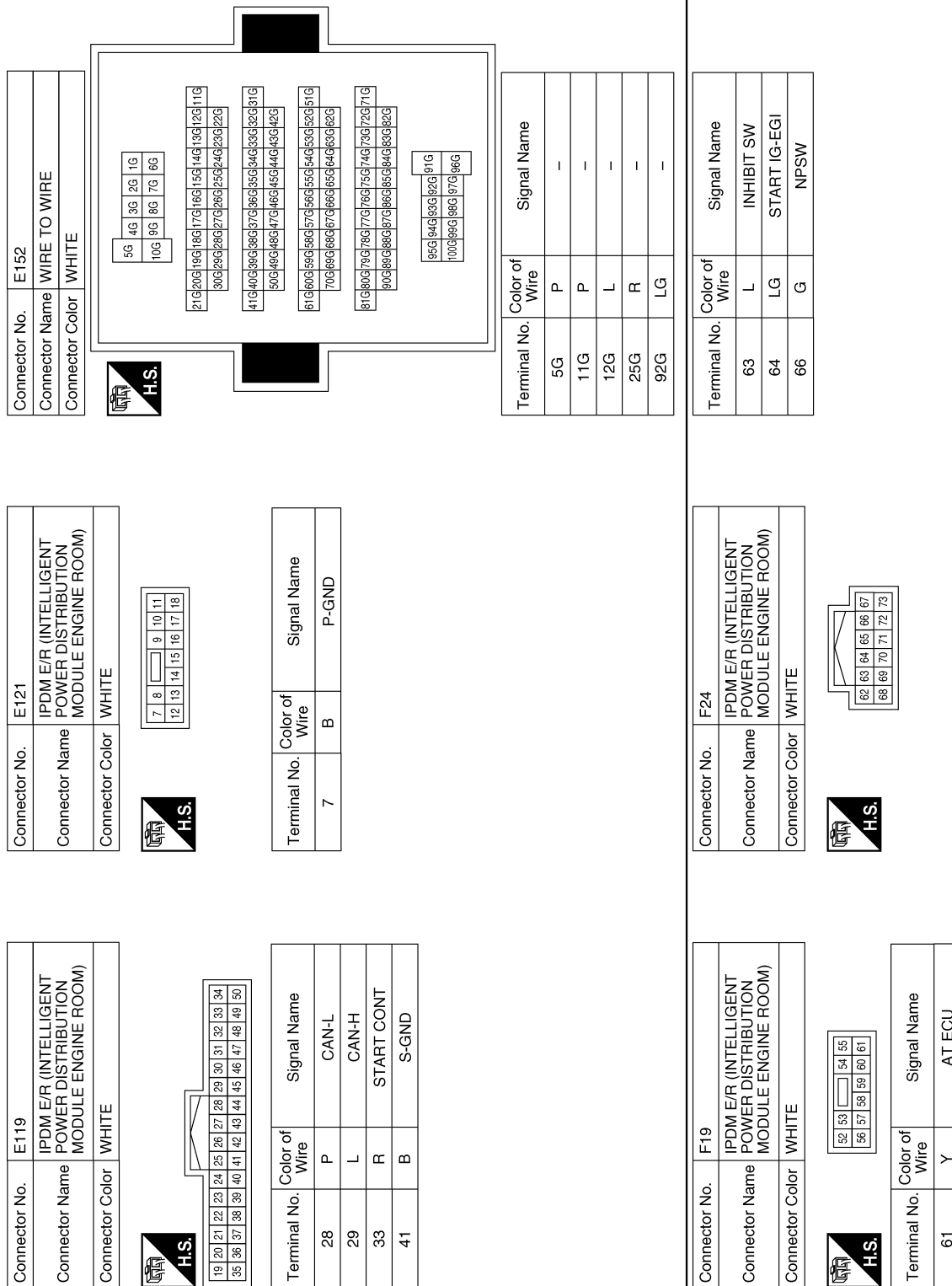
Terminal No.	Color of Wire	Signal Name
1	L	-
2	L	-
3	L	-
4	L	-
7	P	-
8	P	-
9	P	-
10	P	-

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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10J]



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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10J]

Connector No.	F25
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	-	-
2	SB	DS RANGE SW
3	-	-
4	Y	D RANGE SW
5	L	N RANGE SW
6	BR	R RANGE SW
7	V	P RANGE SW
8	-	-
9	-	-
10	-	-

Terminal No.	Color of Wire	Signal Name
11	Y	SENSOR GND
12	W	CVT FLUID TEMP SENS
13	-	-
14	-	-
15	-	-
16	Y	SEC PRESS SENS
17	LG	PRI PRESS SENS
18	-	-
19	-	-
20	-	-
21	-	-
22	-	-
23	P	CAN-L
24	SB	INPUT SPEED SENS
25	-	-
26	V	SENS PWR SUPPLY
27	-	-
28	-	-
29	-	-
30	SB	LINE PRESS SOL VALVE

Terminal No.	Color of Wire	Signal Name
31	-	-
32	-	-
33	L	CAN-H
34	BR	OUTPUT SPEED SENS
35	LG	PRI SPEED SENS
36	-	-
37	BR	SELECT SOL VALVE
38	Y	TCC SOL VALVE
39	L	SEC PRESS SOLE VALVE
40	V	PRI PRESS SOLE VALVE
41	B	GND
42	B	GND
43	-	-
44	-	-
45	P	BATT
46	P	BATT
47	Y	VIGN
48	Y	VIGN

Connector No.	F29
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK

6	5	4	3	2	1
10	9	8	7		



Terminal No.	Color of Wire	Signal Name
2	Y	-
4	LG	-
5	V	-
6	SB	-
7	L	-
8	BR	-
9	L	-
10	G	-

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

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



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

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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10J]

Connector No.	F36
Connector Name	OUTPUT SPEED SENSOR
Connector Color	BLACK



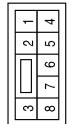
Terminal No.	Color of Wire	Signal Name
1	B	-
2	BR	-
3	Y	-

Connector No.	F35
Connector Name	PRIMARY SPEED SENSOR
Connector Color	BLACK



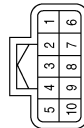
Terminal No.	Color of Wire	Signal Name
1	B	-
2	LG	-
3	Y	-

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



Terminal No.	Color of Wire	Signal Name
7	P	-
8	B	-

Connector No.	F38
Connector Name	JOINT CONNECTOR-F02
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
3	Y	-
4	Y	-
5	Y	-
8	Y	-
9	Y	-
10	Y	-

Connector No.	F37
Connector Name	INPUT SPEED SENSOR
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	B	-
2	SB	-
3	Y	-

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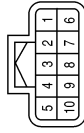
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10J]

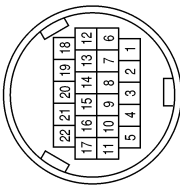
Connector No.	F53
Connector Name	JOINT CONNECTOR-F03
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
3	B	-
4	B	-
5	B	-
8	B	-
9	B	-
10	B	-

Terminal No.	Color of Wire	Signal Name
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	W	-
13	LG	-
14	Y	-
15	-	-
16	-	-
17	-	-
18	Y	-
19	-	-
20	-	-
21	-	-
22	V	-

Connector No.	F43
Connector Name	CVT UNIT
Connector Color	GRAY



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

Terminal No.	Color of Wire	Signal Name
5	B	-
6	-	-
7	-	-
8	-	-
9	O	-
10	L	-
11	W	-
12	R	-
13	B/Y	-
14	-	-

Connector No.	F207
Connector Name	CONTROL VALVE
Connector Color	-



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

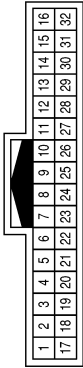
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CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10J]

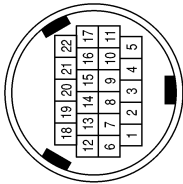
Connector No.	B101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
21	P	-
22	L	-
28	P	-
29	L	-

Terminal No.	Color of Wire	Signal Name
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	V	-
13	LG	-
14	Y	-
15	-	-
16	-	-
17	-	-
18	Y	-
19	-	-
20	-	-
21	-	-
22	LG	-

Connector No.	F209
Connector Name	CVT UNIT
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	BR	-
2	LG	-
3	L	-
4	Y	-
5	BR	-
6	-	-

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CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

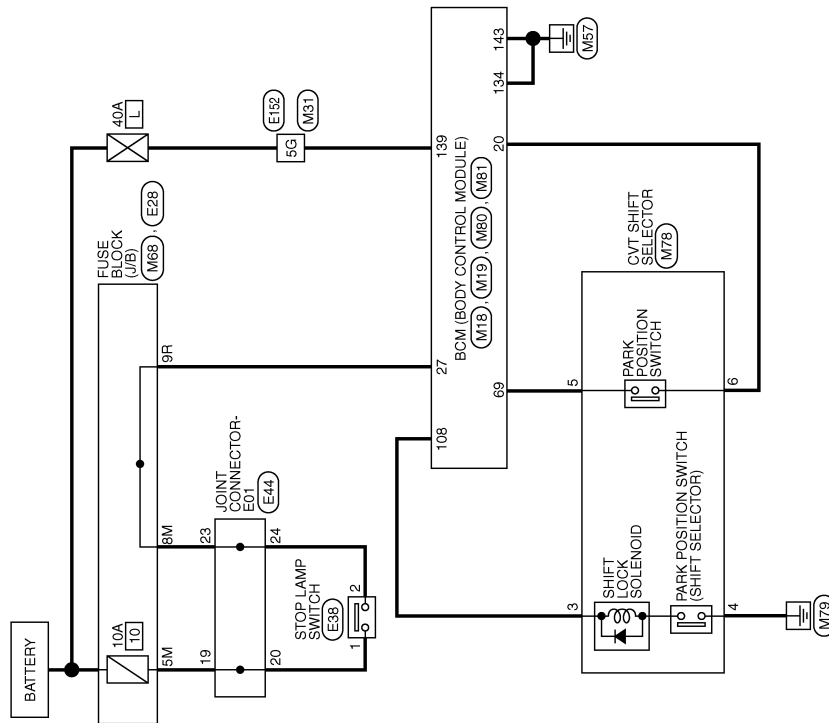
[CVT: RE0F10J]

CVT SHIFT LOCK SYSTEM

Wiring diagram

INFOID:000000011220278

CVT SHIFT LOCK SYSTEM



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CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10J]

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

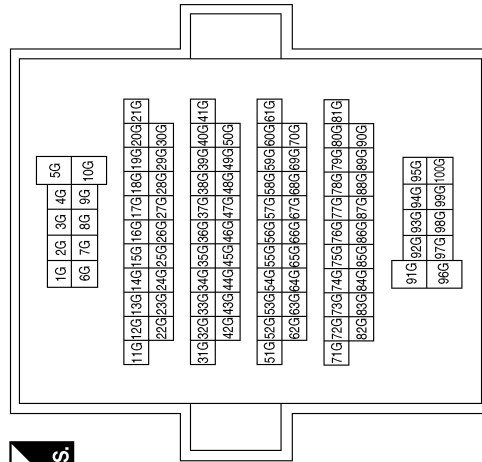
Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



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



AADIA0870GB

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	7R	6R	5R	4R	3R

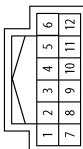
Terminal No.	Color of Wire	Signal Name
9R	G	-

CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

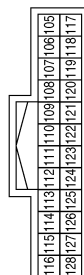
[CVT: RE0F10J]

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

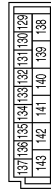
Terminal No.	Color of Wire	Signal Name
3	G	-
4	B	-
5	G	-
6	W	-

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	GR	GND 2
139	L	BAT POWER F/L
143	GR	GND 1

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



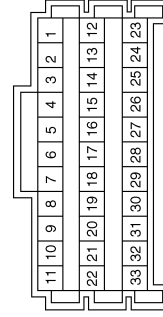

Terminal No.	Color of Wire	Signal Name
5M	W	-
8M	P	-

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




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

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

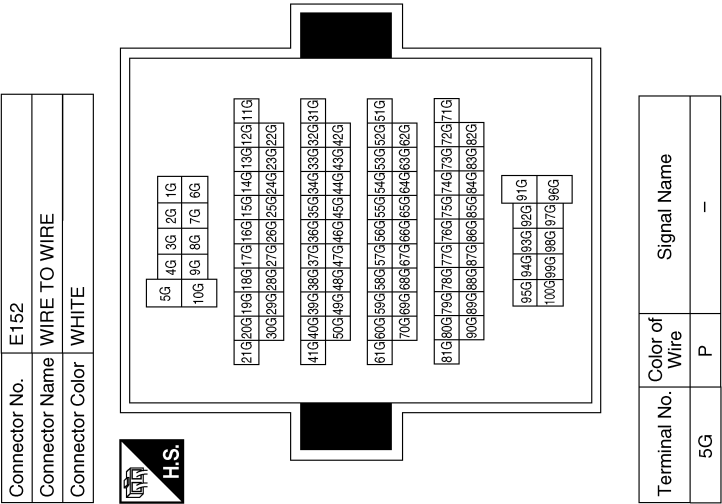



Terminal No.	Color of Wire	Signal Name
19	W	-
20	W	-
23	P	-
24	P	-

CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10J]



BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:000000011220279

NOTE:

"DTC" includes DTC at the 1st trip.

1.OBTAIN INFORMATION ABOUT SYMPTOM

Refer to [TM-77, "Diagnostic Work Sheet"](#) and interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred) as much as possible when the customer brings in the vehicle.

>> GO TO 2.

2.CHECK DTC

1. Before checking the malfunction, check whether any DTC exists.
2. If DTC exists, perform the following operations.
 - Records the DTCs. (Print out using CONSULT and affix to the Work Order Sheet.)
 - Erase DTCs.
 - Check the relation between the cause found by DTC and the malfunction information from customer. [TM-184, "Symptom Table"](#) can be used effectively.
3. Check the relevant information including STI, etc.

Do malfunction information and DTC exist?

Malfunction information and DTC exist.>>GO TO 3.

Malfunction information exists but no DTC.>>GO TO 4.

No malfunction information, but DTC exists.>>GO TO 5.

3.REPRODUCE MALFUCTION SYSTEM

Check the malfunction described by the customer on the vehicle.

Check if the behavior is fail safe or normal operation. Refer to [TM-54, "Fail-safe"](#).

Interview sheet can be used effectively when reproduce malfunction conditions. Refer to [TM-77, "Diagnostic Work Sheet"](#).

Verify the relationship between the symptom and the conditions in which the malfunction described by the customer occurs.

>> GO TO 5.

4.REPRODUCE MALFUNCTION SYMPTOM

Check the malfunction described by the customer on the vehicle.

Check if the behavior is fail safe or normal operation. Refer to [TM-54, "Fail-safe"](#).

Interview sheet can be used effectively when reproduce malfunction conditions. Refer to [TM-77, "Diagnostic Work Sheet"](#).

Verify the relationship between the symptom and the conditions in which the malfunction described by the customer occurs.

>> GO TO 6.

5.PERFORM "DTC CONFIRMATION PROCEDURE"

Perform "DTC CONFIRMATION PROCEDURE" of the appropriate DTC to check if DTC is detected again.

Refer to [TM-58, "DTC Inspection Priority Chart"](#) when multiple DTCs are detected, and then determine the order for performing the diagnosis.

Is any DTC detected?

YES >> GO TO 7.

NO >> Follow [GI-42, "Intermittent Incident"](#) to check.

6.IDENTIFY MALFUNCTIONING SYSTEM WITH "DIAGNOSIS CHART BY SYMPTOM"

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[CVT: RE0F10J]

Use [TM-184, "Symptom Table"](#) from the symptom inspection result in step 4. Then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 8.

7. REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the detected malfunctioning parts.

Reconnect parts or connector after repairing or replacing, and then erase DTC if necessary.

>> GO TO 8.

8. FINAL CHECK

Perform "DTC CONFIRMATION PROCEDURE" again to make sure that the repair is correctly performed. Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 3 or 4.

Is DTC or malfunction symptom reproduced?

YES-1 (DTC is reproduced.)>>GO TO 5.

YES-2 (Malfunction is reproduced.)>>GO TO 6.

NO >> Before delivering the vehicle to the customer, make sure that DTC is erased.

Diagnostic Work Sheet

INFOID:0000000011220280

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

SEF907L

Worksheet Sample

Question sheet						
Customer's name	MR/MS	Registration number		Initial year registration	Year	Month day
		Vehicle type		Chassis No.		
Storage date	Year	Month day	Engine	Mileage		km/mile
Symptom			☐ Vehicle does not start. (☐ R position ☐ D position ☐ L position)			
			☐ Upshifting does not occur. ☐ Downshifting does not occur.			
			☐ Lock-up malfunction			
			☐ Shift point is too high. ☐ Shift point is too low.			
			☐ Shift shock (☐ N⇒D ☐ Lock-up ☐ R, D, and L position)			
			☐ Slip (☐ N⇒D ☐ Lock-up ☐ R, D, and L position)			
			☐ Noise ☐ Vibration			
			When selector lever position is shifted, shift pattern does not change.			
			☐ Other ()			
First occurrence			☐ Recently (as from month of year)			
Frequency of occurrence			☐ Always ☐ Under certain conditions ☐ Sometimes (time(s)/day)			

DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[CVT: RE0F10J]

Question sheet

Customer's name	MR/MS	Registration number		Initial year registration	Year	Month	day
		Vehicle type		Chassis No.			
Storage date	Year	Month	day	Engine		Mileage	km/mile
Climate conditions		Irrelevant					
Weather		☐ Clear ☐ Cloud ☐ Rain ☐ Snow ☐ Others)					
Temperature		☐ Hot ☐ Warm ☐ Cool ☐ Cold ☐ Temperature (Approx. °C/°F)					
Relative humidity		☐ High ☐ Moderate ☐ Low					
Transaxle condition		☐ In cold-start ☐ During warm-up (approx. °C/°F) ☐ After warm-up ☐ Engine speed: rpm					
Road conditions		☐ Urban area ☐ Suburb area ☐ Highway ☐ Mountainous road (uphill or downhill)					
Operating condition, etc.		Irrelevant ☐ When engine starts ☐ During idling ☐ During driving ☐ During acceleration ☐ At constant speed driving ☐ During deceleration ☐ During cornering (RH curve or LH curve)					
Other conditions							

ADDITIONAL SERVICE WHEN REPLACING TCM

< BASIC INSPECTION >

[CVT: RE0F10J]

ADDITIONAL SERVICE WHEN REPLACING TCM

Description

INFOID:0000000011220281

Always perform the following items when the TCM is replaced. For work procedure, refer to [TM-79, "Work Procedure"](#).

SAVING AND WRITING OF TCM DATA

- TCM performs accurate control by retrieving data (inherent characteristic value) of each solenoid. For this reason, it is necessary to save data of current TCM in CONSULT before replacing the TCM. After this, the saved data must be written in new TCM.

Work Procedure

INFOID:0000000011220282

CAUTION:

When replacing TCM together with transaxle assembly, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY". Refer to [TM-80, "Description"](#).

1.SAVE THE TCM DATA

NOTE:

Save necessary data stored in TCM in CONSULT according to the following instructions:

1. Turn ignition switch OFF and wait for 10 seconds.
2. Turn ignition switch ON.
3. Select "Work Support" in "TRANSMISSION".
4. Select "READ IP CHARA - REPLACEMENT TCM".
5. Import data according to the instructions on the CONSULT screen.

>> GO TO 2.

2.REPLACE THE TCM

1. Turn ignition switch OFF and wait for 10 seconds.
2. Replace the TCM. Refer to [TM-198, "Removal and Installation"](#).

>> GO TO 3.

3.WRITE THE TCM DATA

NOTE:

Write data saved in CONSULT into a new TCM according to the following instructions:

1. Turn ignition switch OFF and wait for 10 seconds.
2. Turn ignition switch ON.
3. Select "Work Support" in "TRANSMISSION".
4. Select "WRITE IP CHARA - REPLACEMENT TCM".
5. Write data saved in CONSULT in TCM according to the instructions on the CONSULT screen.

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F10J]

ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

Description

INFOID:0000000011220283

Perform the following work after the transaxle assembly is replaced. For work procedure, refer to [TM-80](#), "[Work Procedure](#)".

ERASING AND WRITING TCM DATA

- TCM performs accurate control by retrieving data (inherent characteristic value) of each solenoid. For this reason, after replacing transaxle assembly, it is necessary to erase data stored in TCM and write new data.

ERASING OF CVT FLUID DEGRADATION LEVEL DATA

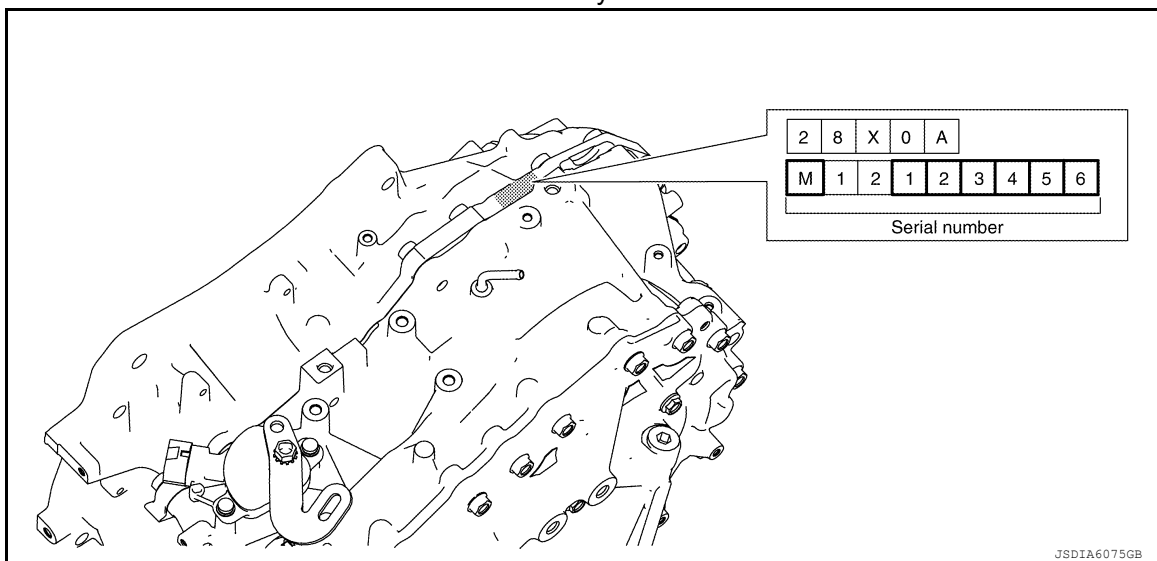
- TCM records the degradation level of the CVT fluid calculated from the vehicle driving status. Therefore, if the transaxle assembly is replaced, it is necessary to erase the CVT fluid degradation level data recorded by TCM.

Work Procedure

INFOID:0000000011220284

1.CHECK THE SERIAL NUMBER (PART 1)

Write down the serial number of new transaxle assembly.



>> GO TO 2.

2.CHECK THE SERIAL NUMBER (PART 2)

1. Turn ignition switch ON.
2. Insert the attached CD into CONSULT.
3. Select "Work Support" in "TRANSMISSION".
4. Select "WRITE IP CHARA - REPLACEMENT AT/CVT".
5. Check that the serial number displayed on CONSULT screen and those written in the memo agree.

CAUTION:

Never perform writing procedure.

6. Go back to MENU of "Work Support".

>> GO TO 3.

3.INITIALIZE TCM

1. Set parking brake.
2. Select "ERASE MEMORY DATA".
3. Touch "Start" according to the instructions on the CONSULT screen.

Is "COMPLETED" displayed?

YES >> GO TO 4.

NO >> Turn ignition switch OFF and wait for a minimum of 10 seconds then perform the work again.

ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F10J]

4. WRITE THE DATA

NOTE:

Write data of new solenoid in TCM according to the following instructions:

1. Shift the selector lever to the P position.
2. Turn ignition switch OFF and wait for 10 seconds.
3. Turn ignition switch ON.
4. Select "Work Support" in "TRANSMISSION".
5. Select "WRITE IP CHARA - REPLACEMENT AT/CVT".
6. Write data in TCM according to the instructions on the CONSULT screen.

NOTE:

When writing is complete, the shift position indicator of the combination meter displays P.

>> GO TO 5.

5. ERASE CVT FLUID DEGRADATION LEVEL DATA

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

>> WORK END

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ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F10J]

ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY

Description

INFOID:0000000011557873

When replacing TCM and transaxle assembly simultaneously, perform the following work. For work procedure, refer to [TM-82, "Work Procedure"](#).

TCM PROGRAMMING

- Since vehicle specifications are not yet written in a new TCM, it is necessary to write them with CONSULT.

CAUTION:

When replacing TCM, save TCM data on CONSULT before removing TCM.

WRITING TCM DATA

- TCM performs accurate control by retrieving data (inherent characteristic value) of each solenoid. For this reason, after replacing TCM and transaxle assembly, it is necessary to write new data in TCM.

Work Procedure

INFOID:0000000011557874

1. SAVE TCM DATA (VEHICLE SPECIFICATIONS)

Ⓐ With CONSULT

1. Turn ignition switch OFF.
2. Connect all of disconnected connectors.
3. Turn ignition switch ON.
4. Select "Re/programming, Configuration".
5. Select "AT/CVT".

NOTE:

If "AT/CVT" is not displayed and TCM data cannot be saved on CONSULT, GO TO 2.

6. Select "Programming".
7. Save TCM data on CONSULT according to the CONSULT display.

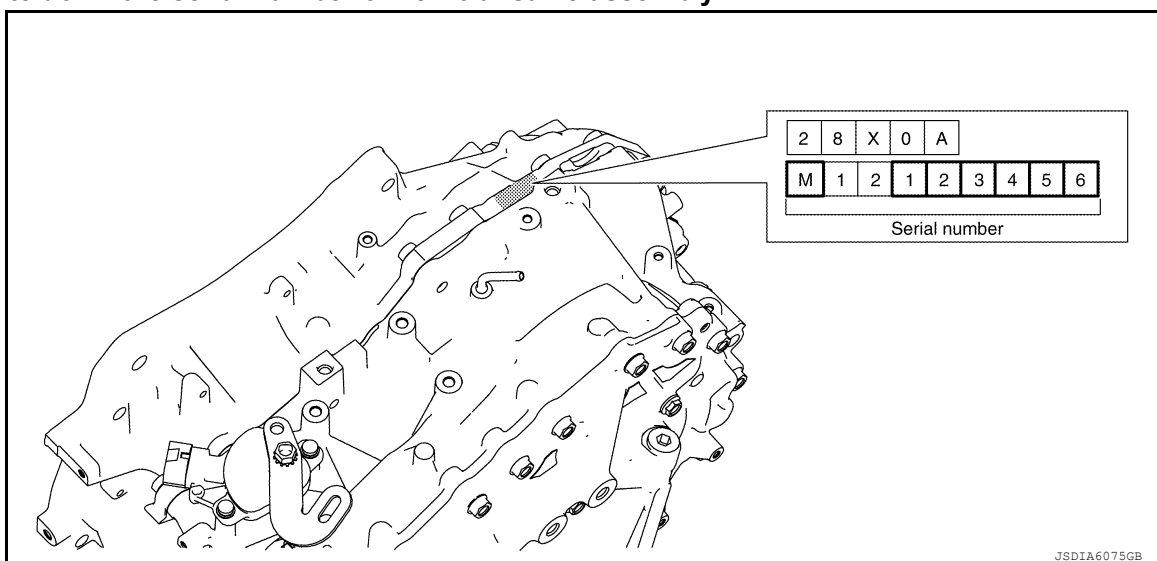
>> GO TO 2.

2. REPLACE TCM AND TRANSAXLE ASSEMBLY

1. Turn ignition switch OFF and wait for 10 seconds.
2. Replace TCM and transaxle assembly. Refer to [TM-198, "Removal and Installation"](#) (TCM), [TM-220, "Removal and Installation"](#) (Transaxle assembly).

CAUTION:

Write down the serial number of new transaxle assembly.



>> GO TO 3.

ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F10J]

3. WRITE TCM DATA (VEHICLE SPECIFICATIONS)

NOTE:

Write data saved in CONSULT into a new TCM according to the following instructions:

With CONSULT

1. Select "Programming".
2. Perform programming according to the CONSULT display.

>> GO TO 4.

4. WRITE TCM DATA (IP CHARACTERISTICS VALUE)

NOTE:

Write data of new solenoid in TCM according to the following instructions:

With CONSULT

CAUTION:

When the work is interrupted, obtain data again from the supplied CD.

1. Shift the selector lever to the P position.
2. Turn ignition switch OFF and wait for 10 seconds.
3. Turn ignition switch ON.
4. Insert the supplied CD into CONSULT.
5. Select "Work Support" in "TRANSMISSION".
6. Select "WRITE IP CHARA - REPLACEMENT AT/CVT".
7. Check that the serial number displayed on CONSULT screen and those written in the memo agree.
8. Write data in TCM according to the instructions on the CONSULT screen.

NOTE:

When writing is complete, the shift position indicator of the combination meter displays P.

>> WORK END

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CVT FLUID COOLER SYSTEM

Cleaning

INFOID:000000011220285

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.

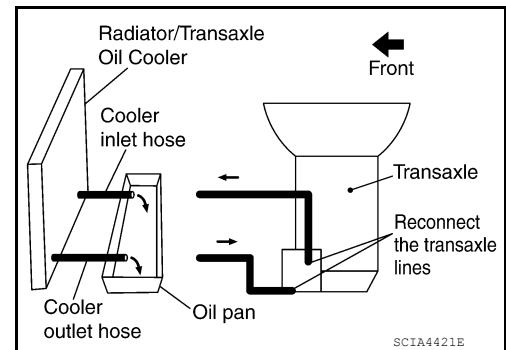
CVT FLUID COOLER CLEANING PROCEDURE

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.

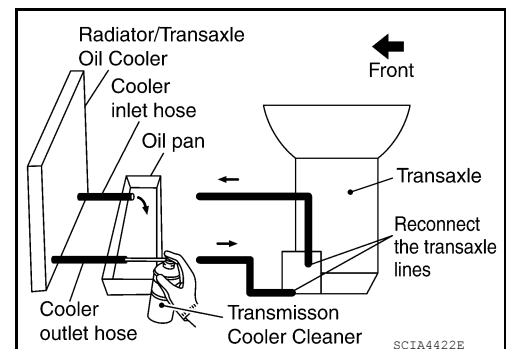


5. Insert the extension adapter hose of a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the cooler outlet hose.

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.**
- **Never 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.

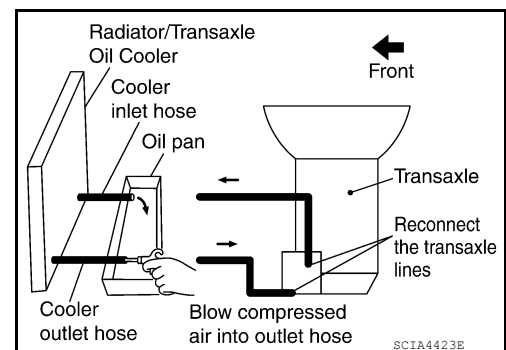
12. Remove the banjo bolts.

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

< BASIC INSPECTION >

[CVT: RE0F10J]

17. Perform "CVT FLUID COOLER DIAGNOSIS PROCEDURE".

CVT FLUID COOLER DIAGNOSIS PROCEDURE

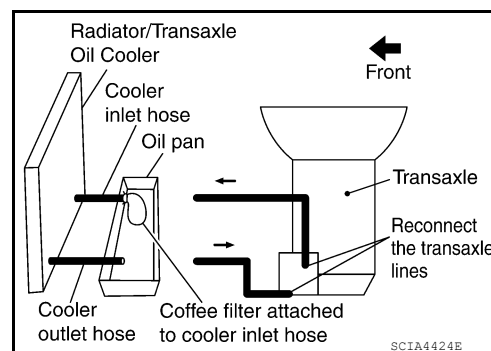
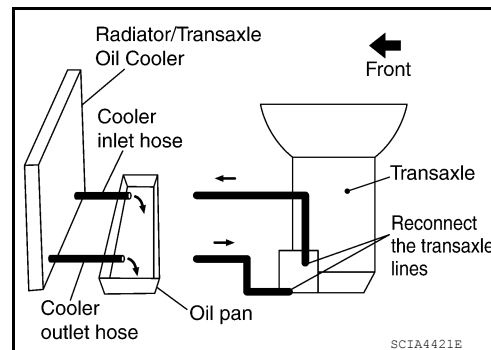
NOTE:

Insufficient cleaning of the cooler inlet hose exterior may lead to inaccurate debris identification.

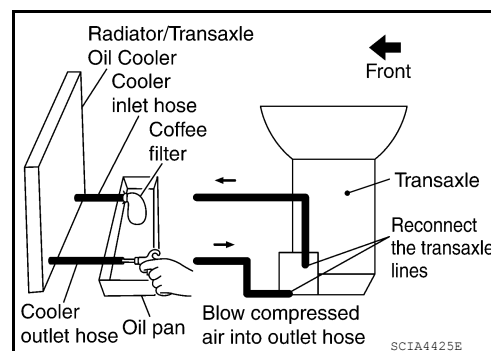
1. Position an oil pan under the transaxle's inlet and outlet cooler hoses.
2. Clean the exterior and tip of the cooler inlet hose.
3. Insert the extension adapter hose of a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the cooler outlet hose.

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.**
 - **Never 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.

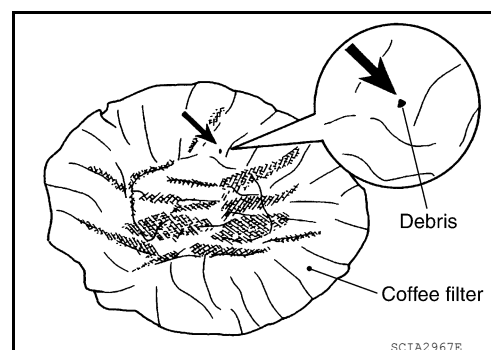


6. Insert the tip of an air gun into the end of the cooler outlet hose.
7. Wrap a shop rag around the air gun tip and end of cooler outlet hose.
8. Blow compressed air regulated to 5 to 9 kg/cm² (70 to 130 psi) through the cooler outlet hose to force any remaining CVT fluid into the coffee filter.
9. 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.

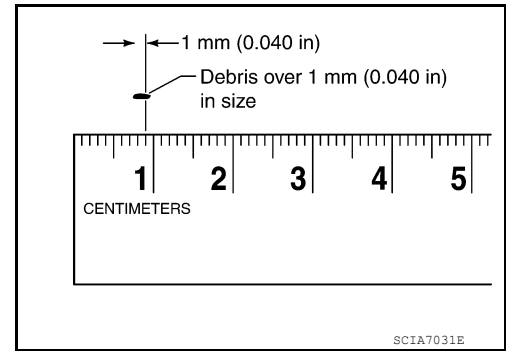


CVT FLUID COOLER SYSTEM

< BASIC INSPECTION >

[CVT: RE0F10J]

- 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.

STALL TEST

< BASIC INSPECTION >

[CVT: RE0F10J]

STALL TEST

Work Procedure

INFOID:0000000011220286

INSPECTION

1. Check the engine oil level. Replenish if necessary. Refer to [LU-8, "Inspection"](#).
2. Check for leak of the CVT fluid. Refer to [TM-189, "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 put 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:

Do not depress the accelerator pedal for 5 seconds or more during the test.

Stall speed : Refer to [TM-226, "Stall Speed"](#).

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

NARROWING-DOWN MALFUNCTIONING PARTS

	Selector lever position		Possible cause
	D	R	
Stall speed	H	O	• Forward clutch
	O	H	• Reverse brake
	L	L	• Engine • Torque converter one way clutch
	H	H	• Line pressure is low. • Primary pulley • Secondary pulley • Chain belt

O: Within the stall speed standard value.

H: Stall speed is higher than the standard value.

L: Stall speed is lower than the standard value.

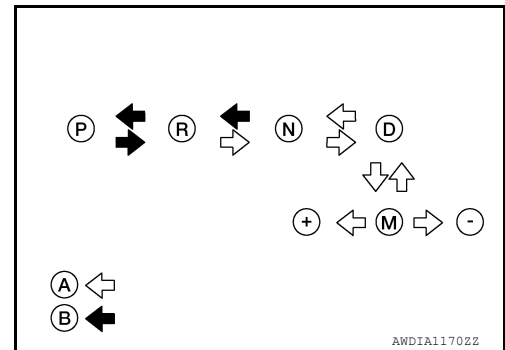
CVT POSITION

Inspection and Adjustment

INFOID:000000011220287

INSPECTION

1. Turn ON the ignition switch with the shift selector at the "P" position.
2. Press the shift selector button with the brake pedal depressed, and confirm that the shift selector can be moved to positions other than "P". Also confirm that movement is not allowed from the "P" position to other positions without depressing the brake pedal.
3. Move the shift selector and check for "excessive effort", "sticking", "noise" or "rattle".
4. Confirm that the shift selector stops at each position with the feel of engagement when it is moved through all the positions. Check whether or not the actual position the shift selector is in matches the position shown by the transaxle body.
5. Make sure that the shift selector is moved to all the shift positions in the manner shown.
 - (A): Shift selector can operate without pressing the shift selector button.
 - (B): Press shift selector button to operate shift selector, while depressing the brake pedal.
6. When the shift selector button is pressed without applying forward/backward force to the shift selector at "P", "R", "N", "D" or "M" positions, there should be no "sticking" on the shift selector button operation.
7. Check that the back-up lamps do not illuminate when the shift selector is in the "P" position.
8. Check that the engine can be started with the shift selector in the "P" and "N" positions only.
9. Check that the transaxle is locked completely when the shift selector is in the "P" position.



ADJUSTMENT

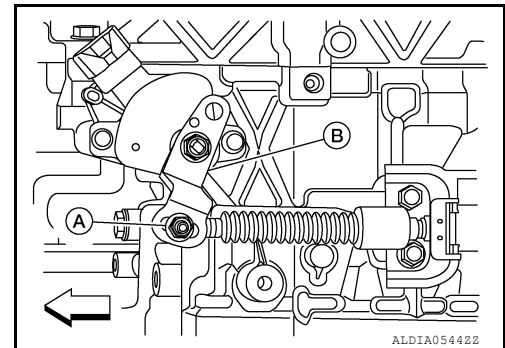
1. Move the selector lever to the "P" position.

CAUTION:
Rotate the wheels at least a quarter turn and be certain the park position mechanism is fully engaged.
2. Loosen control cable nut (A) and set manual lever (B) to the "P" position.

CAUTION:
Do not apply force to the manual lever.
3. Tighten control cable nut to the specified torque. Refer to [TM-196, "Exploded View"](#).

CAUTION:
Hold the manual lever securely in the "P" position when tightening control cable nut.

⇐ Front



HOW TO ERASE PERMANENT DTC

Description

INFOID:0000000011773669

Permanent DTC can be erased by driving each driving pattern.
ECM recognizes each driving pattern; it transmits signals to each control module when the driving is complete. Each control module erases permanent DTC based on those signals. For details, refer to [EC-174, "Description"](#).

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P

TM

U0073 COMMUNICATION BUS A OFF

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

DTC/CIRCUIT DIAGNOSIS

U0073 COMMUNICATION BUS A OFF

DTC Description

INFOID:0000000011746206

DTC DETECTION LOGIC

TCM communication blockage lasts for 2 seconds or more when turning ON the ignition switch. (Communication not established.)

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When turning ON the ignition switch
U0073	COMM BUS A OFF (Control Module Communication Bus A Off)	Signal	CAN communication
		Threshold	TCM communication blockage (Communication not established)
		Diagnosis delay time	Last for 2 seconds or more

POSSIBLE CAUSE

Harness or connector (CAN communication line is error)

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

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

Is "U0073" detected?

YES >> Go to [TM-90, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220289

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U0100 LOST COMMUNICATION (ECM A)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U0100 LOST COMMUNICATION (ECM A)

DTC Description

INFOID:0000000011746207

DTC DETECTION LOGIC

When the ignition switch is ON, TCM is unable to receive the CAN communications signal from ECM continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is ON
U0100	LOST COMM (ECM A) (Lost Communication With ECM/PCM A)	Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from ECM
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- ECM
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

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

Is "U0100" detected?

YES >> Go to [TM-91, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220291

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U0102 LOST COMMUNICATION (TRANSFER)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U0102 LOST COMMUNICATION (TRANSFER)

DTC Description

INFOID:0000000011746208

DTC DETECTION LOGIC

When the ignition switch is ON, TCM is unable to receive the CAN communications signal from AWD control unit continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is ON
U0102	LOST COMM (TRANSFER) (Lost Communication With Transfer Case Control Module)	Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from AWD control unit
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- AWD control unit
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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 the DTC.

Is "U0102" detected?

YES >> Go to [TM-92, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220293

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U0121 LOST COMMUNICATION (ABS)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U0121 LOST COMMUNICATION (ABS)

DTC Description

INFOID:0000000011771606

DTC DETECTION LOGIC

When the ignition switch is ON, TCM is unable to receive the CAN communications signal from ABS actuator and electric unit (control unit) continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is ON
U0121	LOST COMM (ABS) [Lost Communication With Anti-Lock Brake System (ABS) Control Module]	Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from ABS actuator and electric unit (control unit)
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- ABS actuator and electric unit (control unit)
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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 the DTC.

Is "U0121" detected?

YES >> Go to [TM-93, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220295

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U0140 LOST COMMUNICATION (BCM)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U0140 LOST COMMUNICATION (BCM)

DTC Description

INFOID:0000000011746210

DTC DETECTION LOGIC

When the ignition switch is ON, TCM is unable to receive the CAN communications signal from BCM continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is ON
U0140	LOST COMM (BCM) (Lost Communication With Body Control Module)	Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from BCM
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- BCM
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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 the DTC.

Is "U0140" detected?

- YES >> Go to [TM-94, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220297

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U0141 LOST COMMUNICATION (BCM A)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U0141 LOST COMMUNICATION (BCM A)

DTC Description

INFOID:0000000011746211

DTC DETECTION LOGIC

When the ignition switch is turned ON, TCM continues no reception of the CAN communication signal from IPDM E/R for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is turned ON
U0141	LOST COMM (BCM A) (Lost Communication With Body Control Module A)	Signal	CAN communication signal
		Threshold	TCM continues no reception of the CAN communication signal from IPDM E/R
		Diagnosis delay time	2 seconds or more

POSSIBLE CAUSE

- IPDM E/R
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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 the DTC.

Is "U0141" detected?

- YES >> Go to [TM-95, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220299

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U0155 LOST COMMUNICATION (IPC)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U0155 LOST COMMUNICATION (IPC)

DTC Description

INFOID:000000011746212

DTC DETECTION LOGIC

When the ignition switch is ON, TCM is unable to receive the CAN communications signal from the combination meter continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is ON
U0155	LOST COMM (IPC) [Lost Communication With Instrument Panel Cluster (IPC) Control Module]	Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from the combination meter
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- Combination meter
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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 the DTC.

Is "U0155" detected?

- YES >> Go to [TM-96, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000011220301

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U0164 LOST COMMUNICATION (HVAC)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U0164 LOST COMMUNICATION (HVAC)

DTC Description

INFOID:0000000011771607

DTC DETECTION LOGIC

When the ignition switch is ON, TCM is unable to receive the CAN communications signal from A/C auto amp. continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is ON
U0164	LOST COMM (HVAC) (Lost Communication With HVAC Control Module)	Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from A/C auto amp.
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- AWD control unit
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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 the DTC.

Is "U0164" detected?

- YES >> Go to [TM-97, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220303

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U0300 CAN COMMUNICATION DATA

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U0300 CAN COMMUNICATION DATA

DTC Description

INFOID:0000000011746213

DTC DETECTION LOGIC

When the ignition switch is ON, the data length transmitted from each control unit is shorter than the specified length and the status continues for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0300	CAN COMM DATA (Internal Control Module Software In-compatibility)	Diagnosis condition	When the ignition switch is ON
		Signal	CAN communication data
		Threshold	The data length transmitted from each control unit is shorter than the specified length and the status
		Diagnosis delay time	Continues for 2 seconds or more

POSSIBLE CAUSE

Control unit other than TCM

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

With CONSULT

1. Start the engine and wait for 5 seconds or more.
2. Check the DTC.

Is "U0300" detected?

YES >> Go to [TM-98, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220305

1. CONTROL UNIT CHECK

Check the number of control units replaced before "U0300" is detected.

Is one control unit replaced?

YES >> The specification of the control unit replaced may be incorrect. Check the part number and the specification.

NO >> GO TO 2.

2. CONTROL UNIT CHECK

With CONSULT

1. Remove one of the control unit replaced.
2. Assemble the old control unit before replacement.
3. Turn ignition switch ON, and wait for 2 seconds or more.
4. Select "Self Diagnostic Results" in "TRANSMISSION".

U0300 CAN COMMUNICATION DATA

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Is "U0300" detected?

YES >> Turn OFF the ignition switch and check other control units in the same manner.

NO >> The specification of the control unit removed may be incorrect. Check the part number and the specification.

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U1000 CAN COMM CIRCUIT

DTC Description

INFOID:0000000011746214

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 DETECTION LOGIC

When the ignition switch is ON, TCM cannot send the CAN communication signal continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1000	CAN COMM CIRCUIT (CAN Communication Line)	Diagnosis condition	When the ignition switch is ON
		Signal	CAN communication signal
		Threshold	TCM cannot send the CAN communication signal
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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

With CONSULT

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

Is "U1000" detected?

- YES >> Go to [TM-100, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220308

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U1117 LOST COMMUNICATION (ABS)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U1117 LOST COMMUNICATION (ABS)

DTC Description

INFOID:0000000011746215

DTC DETECTION LOGIC

When the ignition switch is ON, TCM is unable to receive the CAN communications signal from ABS actuator and electric unit (control unit) continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is ON
U1117	LOST COMM (ABS) (Lost Communication With ABS)	Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from ABS actuator and electric unit (control unit)
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- ABS actuator and electric unit (control unit)
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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 5 seconds or more.
2. Check the DTC.

Is "U1117" detected?

YES >> Go to [TM-101, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220310

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

U1118 LOST COMM (AV CONTROL UNIT)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

U1118 LOST COMM (AV CONTROL UNIT)

DTC Description

INFOID:0000000011773019

DTC DETECTION LOGIC

When the ignition switch is ON, TCM is unable to receive the CAN communications signal from AV control unit continuously for 2 seconds or more.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	When the ignition switch is ON
U1118	LOST COMM (AV C/U) (Lost Communication With AV Control Unit)	Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from AV control unit
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- AV control unit
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

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 5 seconds or more.
2. Check the DTC.

Is "U1118" detected?

- YES >> Go to [TM-102, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011773020

For the diagnosis procedure, refer to [LAN-21, "Trouble Diagnosis Flow Chart"](#).

P062F EEPROM

DTC Description

INFOID:0000000011746216

TCM compares the calculated value stored in the flash ROM with the value stored in TCM. If the calculated value does not agree with the stored value, TCM judges this as a malfunction.

DTC DETECTION LOGIC

Flash ROM error is detected when turning ON the ignition switch.

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P062F	EEPROM (Internal Control Module EEPROM Error)	Diagnosis condition	When turning ON the ignition switch
		Signal	—
		Threshold	Flash ROM error
		Diagnosis delay time	—

POSSIBLE CAUSE

- TCM (Flash ROM)
- Harness or connector [TCM power supply (back-up) circuit is open or shorted]

FAIL-SAFE

Not changed from normal driving

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

1. Start the engine.
2. Check the DTC.

Is "P062F" detected?

YES >> Go to [TM-103, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220313

1. CHECK TCM BATTERY POWER SUPPLY (BACK-UP) CIRCUIT

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

TCM		—	Voltage
Connector	Terminal		
F25	45	Ground	10 – 16 V
	46		

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

2. DETECT MALFUNCTIONING ITEMS

< DTC/CIRCUIT DIAGNOSIS >

Check the following items:

- Open or short circuit of harness between battery positive terminal and TCM connector terminals 45, and 46.
- 10A fuse [No.25, located in the fuse block (J/B)]. Refer to [PG-73, "Terminal Arrangement"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3.CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace the TCM. Refer to [TM-198, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0705 TRANSMISSION RANGE SENSOR A

DTC Description

INFOID:0000000011746217

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	TCM power supply voltage: More than 11 V
P0705	T/M RANGE SENSOR A [Transmission Range Sensor A Circuit (PRNDL Input)]	Signal	Transmission range switch signal
		Threshold	Two or more range signals simultaneously stay ON continuously
		Diagnosis delay time	Maintained for 2 seconds

POSSIBLE CAUSE

- Harness or connector (Short circuit between transmission range switch and TCM)
- Transmission range switch

FAIL-SAFE

- Shift position indicator on combination meter is not displayed
- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

1. Turn ignition switch ON.
2. Shift the selector lever through entire positions from "P" to "D". (Hold the selector lever at each position for 5 seconds or more.)
3. Check the first trip DTC.

Is "P0705" detected?

YES >> Go to [TM-105, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220315

1. CHECK TCM INPUT SIGNALS

With CONSULT

1. Turn ignition switch ON.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "D POSITION SW", "N POSITION SW", "R POSITION SW", and "P POSITION SW".
4. Shift the selector lever through entire positions from "P" to "D" and check ON/OFF of each monitor item.

Monitor item	Test condition	Condition
D POSITION SW	Selector lever: "D" position	On
	Other than the above	Off

P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Monitor item	Test condition	Condition
N POSITION SW	Selector lever: "N" position	On
	Other than the above	Off
R POSITION SW	Selector lever: "R" position	On
	Other than the above	Off
P POSITION SW	Selector lever: "P" position	On
	Other than the above	Off

⊗ Without CONSULT

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Turn ignition switch ON.
4. Shift the selector lever from "P" to "D" and check voltage between TCM harness connector terminals and ground.

+		–	Test condition	Voltage
TCM				
Connector	Terminal			
F25	4	Ground	Selector lever: “D” position	10 – 16 V
			Other than the above	Approx. 0 V
	5		Selector lever: “N” position	10 – 16 V
			Other than the above	Approx. 0 V
	6		Selector lever: “R” position	10 – 16 V
			Other than the above	Approx. 0 V
	7		Selector lever: “P” position	10 – 16 V
			Other than the above	Approx. 0 V

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO-1 ["D POSITION SW" is "ON" when selector is not in "D" position. (Or connector terminal 4 is at power voltage.)]>>GO TO 2.

NO-2 ["N POSITION SW" is "ON" when selector is not in "N" position. (Or connector terminal 5 is at power voltage.)]>>GO TO 4.

NO-3 ["R POSITION SW" is "ON" when selector is not in "R" position. (Or connector terminal 6 is at power voltage.)]>>GO TO 6.

NO-4 ["P POSITION SW" is "ON" when selector is not in "P" position. (Or connector terminal 7 is at power voltage.)]>>GO TO 8.

2.CHECK D POSITION SW CIRCUIT (PART 1)

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

TCM			Continuity
Connector	Terminal		
F25	4	2	Not existed
		5	
		6	
		7	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

3.CHECK D POSITION SW CIRCUIT (PART 2)

1. Disconnect transmission range switch connector.
2. Turn ignition switch ON.
3. Check voltage between TCM harness connector terminal and ground.

+		-	Voltage (Approx.)
TCM			
Connector	Terminal		
F25	4	Ground	0 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace malfunctioning parts.

4.CHECK N POSITION SW CIRCUIT (PART 1)

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

TCM			Continuity
Connector	Terminal		
F25	5	2	Not existed
		4	
		6	
		7	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace malfunctioning parts.

5.CHECK N POSITION SW CIRCUIT (PART 2)

1. Disconnect transmission range switch connector.
2. Turn ignition switch ON.
3. Check voltage between TCM harness connector terminal and ground.

+		-	Voltage (Approx.)
TCM			
Connector	Terminal		
F25	5	Ground	0 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace malfunctioning parts.

6.CHECK P POSITION SW CIRCUIT (PART 1)

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

P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

TCM			Continuity
Connector	Terminal		
F25	7	2	Not existed
		4	
		5	
		6	

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace malfunctioning parts.

7. CHECK P POSITION SW CIRCUIT (PART 2)

1. Disconnect transmission range switch connector.
2. Turn ignition switch ON.
3. Check voltage between TCM harness connector terminal and ground.

+		-	Voltage (Approx.)
TCM			
Connector	Terminal		
F25	7	Ground	0 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace malfunctioning parts.

8. CHECK R POSITION SW CIRCUIT (PART1)

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

TCM			Continuity
Connector	Terminal		
F25	6	2	Not existed
		4	
		5	
		7	

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace malfunctioning parts.

9. CHECK R POSITION SW CIRCUIT (PART 2)

1. Disconnect transmission range switch connector.
2. Turn ignition switch ON.
3. Check voltage between TCM harness connector terminal and ground.

+		-	Voltage (Approx.)
TCM			
Connector	Terminal		
F25	6	Ground	0 V

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace malfunctioning parts.

P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

10.CHECK TRANSMISSION RANGE SWITCH

Check transmission range switch. Refer to [TM-109, "Component Inspection"](#).

Is the check result normal?

- YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).
NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000011220316

1.CHECK TRANSMISSION RANGE SWITCH

Check continuity between transmission range switch connector terminals.

Transmission range switch	Condition	Continuity
Terminal		
7 – 10	Manual lever: "P" and "N" positions	Existed
	Other than the above	Not existed
4 – 5	Manual lever: "P" position	Existed
	Other than the above	Not existed
4 – 8	Manual lever: "R" position	Existed
	Other than the above	Not existed
4 – 9	Manual lever: "N" position	Existed
	Other than the above	Not existed
4 – 2	Manual lever: "D" position	Existed
	Other than the above	Not existed

Is the inspection result normal?

- YES >> INSPECTION END
NO >> There is a malfunction of transmission range switch. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0706 TRANSMISSION RANGE SENSOR A

DTC Description

INFOID:000000011746218

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0706	T/M RANGE SENSOR A (Transmission Range Sensor A Circuit Range/Performance)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	Transmission range switch signal
		Threshold	All range signals stay OFF
		Diagnosis delay time	Maintained for 30 seconds

POSSIBLE CAUSE

- Harness or connector (Open circuit between ignition switch and transmission range switch/open circuit between transmission range switch and TCM)
 - Transmission range switch
 - Control cable
- Harness or connector (CAN communication line is error)

FAIL-SAFE

- Shift position indicator on combination meter is not displayed
- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

1. Turn ignition switch ON.
2. Shift the selector lever through entire positions from "P" to "D". (Hold the selector lever at each position for 40 seconds or more.)
3. Check the first trip DTC.

Is "P0706" detected?

YES >> Go to [TM-110, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000011220318

1. ADJUSTMENT OF CONTROL CABLE

Adjust control cable. Refer to [TM-88, "Inspection and Adjustment"](#).

>> GO TO 2.

2. PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select "Self Diagnostic Results" in "TRANSMISSION".
3. Touch "Erase".
4. Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-110, "DTC Description"](#).

P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Is "P0706" detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK POWER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect transmission range switch connector.
3. Turn ignition switch ON.
4. Check voltage between transmission range switch harness connector terminal and ground.

+		–	Voltage
Transmission range switch			
Connector	Terminal		
F29	4	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 7.

4.CHECK CIRCUIT BETWEEN TRANSMISSION RANGE SWITCH AND TCM (PART 1)

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

Transmission range switch		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F29	2	F25	4	Existed
	5		7	
	8		6	
	9		5	

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace malfunctioning parts.

5.CHECK CIRCUIT BETWEEN TRANSMISSION RANGE SWITCH AND TCM (PART 2)

Check continuity between transmission range switch harness connector terminals and ground.

Transmission range switch		—	Continuity
Connector	Terminal		
F29	2	Ground	Not existed
	5		
	8		
	9		

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace malfunctioning parts.

6.CHECK TRANSMISSION RANGE SWITCH

Check transmission range switch. Refer to [TM-112, "Component Inspection"](#).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Repair or replace malfunctioning parts.

P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

7. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Harness open circuit or short circuit between ignition switch and IPDM E/R. Refer to [PG-29, "Wiring Diagram - IGNITION POWER SUPPLY -"](#).
- Harness open circuit or short circuit between IPDM E/R connector terminal 64 and transmission range switch connector terminal 4.
- 10A fuse (No. 45, located in the IPDM E/R). Refer to [PG-76, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Repair or replace malfunctioning parts.

Component Inspection

INFOID:0000000011220319

1. CHECK TRANSMISSION RANGE SWITCH

Check continuity between transmission range switch connector terminals.

Transmission range switch Terminal	Condition	Continuity
7 – 10	Manual lever: "P" and "N" positions	Existed
	Other than the above	Not existed
4 – 5	Manual lever: "P" position	Existed
	Other than the above	Not existed
4 – 8	Manual lever: "R" position	Existed
	Other than the above	Not existed
4 – 9	Manual lever: "N" position	Existed
	Other than the above	Not existed
4 – 2	Manual lever: "D" position	Existed
	Other than the above	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> There is a malfunction of transmission range switch. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000011746219

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
P0711	FLUID TEMP SENSOR A (Transmission Fluid Temperature Sensor A Circuit Range/Performance)	1	Diagnosis condition	When all of the following conditions are satisfied. • TCM power supply voltage: More than 11 V • CAN communication is normal • Engine speed: 450 rpm or more • Accelerator pedal position: 3 deg. or more • Vehicle speed: 10 km/h (7 MPH) or more • U0100, P0705 and P0706 are not detected. • Selector lever: "D" position
			Signal	CVT fluid temperature sensor signal
			Threshold	CVT fluid temperature does not rise to 10°C (50°F) after driving for a certain period of time with the TCM-received fluid temperature sensor value between -40°C (-40°F) and 9°C (48.2°F).
			Diagnosis delay time	—
		2	Diagnosis condition	All of the following conditions are satisfied within 2 seconds after the ignition switch is turned ON. • U0073, U0100, P0712 and P0713 are not detected. • CAN communication is normal. • TCM power supply voltage: More than 11 V • The difference between CVT fluid temperature and engine coolant temperature is 55°C (131°F) or more, or -27°C (-16°F) or less.
			Signal	CVT fluid temperature sensor signal
			Threshold	When all of the following conditions are satisfied • ECM is normal. • Diagnosis condition is satisfied.
			Diagnosis delay time	Maintained for 300 seconds

POSSIBLE CAUSE

CVT fluid temperature sensor

FAIL-SAFE

- Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)
 - Start is slow
 - Acceleration is slow
- Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)
 - Selector shock is large
 - Start is slow
 - Acceleration is slow
- Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)
 - Selector shock is large
 - Start is slow
 - Acceleration is slow

DTC CONFIRMATION PROCEDURE

CAUTION:

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Always drive vehicle at a safe speed.

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. INSPECTION START

Is it necessary to erase permanent DTC?

YES >> GO TO 3.

NO >> GO TO 7.

3. CHECK DTC (ECM AND TCM)

Check the DTC.

Is any DTC other than "P0711" detected?

YES >> Check DTC detected item. Refer to [EC-107. "DTC Index"](#) (ECM), [TM-59. "DTC Index"](#) (TCM).

NO >> GO TO 4.

4. PERFORM DTC CONFIRMATION PROCEDURE (PART 1)

TESTING CONDITION:

- While performing the following procedure, do not add fuel.
- Before performing the following procedure, check that fuel level is between 1/4 and 4/4.
- Before performing the following procedure, confirm that battery voltage is 11 V or more at idle.

With CONSULT

1. Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

2. Turn ignition switch OFF and leave the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during this procedure.

NOTE:

The vehicle must be cooled with the hood open.

3. Turn ignition switch ON.

CAUTION:

Never start the engine.

4. Select "Data Monitor" in "TRANSMISSION".
5. Select "FLUID TEMP".
6. Record CVT fluid temperature.
7. Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

8. Check 1st trip DTC.

With GST

1. Move the vehicle to a cool place.

NOTE:

Cool the vehicle in an environment of ambient air temperature between -10°C (14°F) and 35°C (95°F).

2. Turn ignition switch OFF and leave the vehicle for 12 hours.

CAUTION:

Never turn ignition switch ON during this procedure.

NOTE:

The vehicle must be cooled with the hood open.

3. Start engine and let it idle for 5 minutes or more.

CAUTION:

Never turn ignition switch OFF during idling.

4. Check 1st trip DTC.

Is "P0711" detected?

YES >> Go to [TM-116. "Diagnosis Procedure"](#).

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

NO-1 (With CONSULT)>>GO TO 5.

NO-2 (With GST)>>GO TO 6.

5.CHECK CVT FLUID TEMPERATURE

With CONSULT

1. Select "Data Monitor" in "TRANSMISSION".
2. Select "FLUID TEMP".

Is the value of "FLUID TEMP" 10°C (50°F) or more?

YES >> INSPECTION END

NO >> GO TO 6.

6.PERFORM DTC CONFIRMATION PROCEDURE (PART 2)

With CONSULT

1. Drive the vehicle for the total minutes specified in the Driving time column below with the following conditions satisfied.

Selector lever	: "D" position
Accelerator pedal position	: 1.0/8 or more
Vehicle speed	: 10 km/h (7 MPH) or more

CVT fluid temperature before engine start	Driving time
-40°C (-40°F) – -31°C (-23.8°F)	20 minutes or more
-30°C (-22°F) – -21°C (-5.8°F)	18 minutes or more
-20°C (-4°F) – -11°C (-12.2°F)	14 minutes or more
-10°C (14°F) – -1°C (30.2°F)	10 minutes or more
0°C (32°F) – 9°C (48.2°F)	7 minutes or more

2. Stop the vehicle.
3. Check the first trip DTC.

With GST

1. Drive the vehicle and maintain the following conditions for 20 minutes or more.

Selector lever	: "D" position
Accelerator pedal position	: 1.0/8 or more
Vehicle speed	: 10 km/h (7 MPH) or more

2. Stop the vehicle.
3. Check the first trip DTC.

Is "P0711" detected?

YES >> Go to [TM-116, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

7.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch OFF and cool the engine.
2. Turn ignition switch ON.

CAUTION:

Never start the engine.

3. Select "Data Monitor" in "TRANSMISSION".
4. Select "FLUID TEMP".
5. Record CVT fluid temperature.
6. Start the engine and wait for at least 2 minutes.
7. Drive the vehicle for the total minutes specified in the Driving time column below with the following conditions satisfied.

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Selector lever	: "D" position
Accelerator pedal position	: 1.0/8 or more
Vehicle speed	: 10 km/h (7 MPH) or more

CVT fluid temperature before engine start	Driving time
-40°C (-40°F) – -31°C (-23.8°F)	20 minutes or more
-30°C (-22°F) – -21°C (-5.8°F)	18 minutes or more
-20°C (-4°F) – -11°C (-12.2°F)	14 minutes or more
-10°C (14°F) – -1°C (30.2°F)	10 minutes or more
0°C (32°F) – 9°C (48.2°F)	7 minutes or more
Other than the above	— (Go to "8.CHECK CVT FLUID TEMPERATURE SENSOR")

8. Stop the vehicle.

9. Check the first trip DTC.

⊗ **With GST**

1. Turn ignition switch OFF and cool the engine.
2. Start the engine and wait for at least 2 minutes.
3. Drive the vehicle and maintain the following conditions for 20 minutes or more.

Selector lever	: "D" position
Accelerator pedal position	: 1.0/8 or more
Vehicle speed	: 10 km/h (7 MPH) or more

4. Stop the vehicle.

CAUTION:

Never turn ignition switch OFF

5. Check the first trip DTC.

Is "P0711" detected?

- YES >> Go to [TM-116, "Diagnosis Procedure"](#).
NO >> GO TO 8.

8.CHECK CVT FLUID TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check resistance between CVT unit connector terminals.

CVT unit	Condition	Resistance (Approx.)
Terminal		
12 – 18	CVT fluid temperature: 20°C (68°F)	6.5 kΩ
	CVT fluid temperature: 50°C (122°F)	2.2 kΩ
	CVT fluid temperature: 80°C (176°F)	0.87 kΩ

Is the inspection result normal?

- YES-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
YES-2 >> Confirmation after repair: INSPECTION END
NO >> There is a malfunction of CVT fluid temperature sensor. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

Diagnosis Procedure

INFOID:0000000011220321

1.CHECK CVT FLUID TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Disconnect CVT unit connector.
3. Check resistance between CVT unit connector terminals.

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

CVT unit		Condition	Resistance (Approx.)
Connector	Terminal		
F209	12 – 18	CVT fluid temperature: 20°C (68°F)	6.5 kΩ
		CVT fluid temperature: 50°C (122°F)	2.2 kΩ
		CVT fluid temperature: 80°C (176°F)	0.87 kΩ

Is the inspection result normal?

YES >> GO TO 2.

NO >> Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#)

2. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT (CVT FLUID TEMPERATURE SENSOR) (PART 1)

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

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	11	F43	18	Existed
	12		12	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

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

Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F25	11	Ground	Not existed
	12		

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Repair or replace damaged parts.

P0712 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0712 TRANSMISSION FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:000000011746220

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0712	FLUID TEMP SENSOR A (Transmission Fluid Temperature Sensor A Circuit Low)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	CVT fluid temperature sensor signal
		Threshold	Fluid temperature sensor detection voltage: 0.15 V or less
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (CVT fluid temperature sensor circuit is shorted to ground)
- CVT fluid temperature sensor

FAIL-SAFE

- Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)
 - Start is slow
 - Acceleration is slow
- Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)
 - Selector shock is large
 - Start is slow
 - Acceleration is slow
- Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)
 - Selector shock is large
 - Start is slow
 - Acceleration is slow

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

1. Start the engine and wait for 10 seconds or more.
2. Check the first trip DTC.

Is "P0712" detected?

- YES >> Go to [TM-118, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000011220323

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 harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F25	12	Ground	Not existed

P0712 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning part.

2.CHECK TERMINAL CODE ASSEMBLY

Check continuity between CVT unit connector terminal and ground

CVT unit		—	Continuity
Connector	Terminal		
F209	12	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

3.CHECK CVT FLUID TEMPERATURE SENSOR

Check resistance between CVT unit connector terminals.

CVT unit		Condition	Resistance (Approx.)
Connector	Terminal		
F209	12 – 18	CVT fluid temperature: 20°C (68°F)	6.5 kΩ
		CVT fluid temperature: 50°C (122°F)	2.2 kΩ
		CVT fluid temperature: 80°C (176°F)	0.87 kΩ

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

P0713 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0713 TRANSMISSION FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000011746221

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0713	FLUID TEMP SENSOR A (Transmission Fluid Temperature Sensor A Circuit High)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • Vehicle speed: More than 10 km/h (7 MPH)
		Signal	CVT fluid temperature sensor signal
		Threshold	Fluid temperature sensor detection voltage: 2.48 V or more
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (CVT fluid temperature sensor circuit is open or shorted to power supply)
- CVT fluid temperature sensor

FAIL-SAFE

- Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)
 - Start is slow
 - Acceleration is slow
- Engine coolant temperature when engine start: -35°C (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)
 - Selector shock is large
 - Start is slow
 - Acceleration is slow
- Engine coolant temperature when engine start: Temp. $< -35^{\circ}\text{C}$ (-31°F)
 - Selector shock is large
 - Start is slow
 - Acceleration is slow

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

1. Start the engine.
2. Maintain the following condition for 10 seconds or more.

Vehicle speed : 20 km/h (12 MPH) or more

3. Stop the vehicle.
4. Check the first trip DTC.

Is "P0713" detected?

YES >> Go to [TM-120, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220325

1. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT (PART 1)

1. Turn ignition switch OFF.

P0713 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

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

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	11	F43	18	Existed
	12		12	

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

2.CHECK CIRCUIT BETWEEN TCM AND CVT UNIT (PART 2)

1. Turn ignition switch ON.
2. Check voltage between TCM harness connector terminal and ground.

+		-	Voltage (Approx.)
TCM			
Connector	Terminal		
F25	12	Ground	0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3.CHECK CVT FLUID TEMPERATURE SENSOR

1. Turn ignition switch OFF.
2. Check resistance between CVT unit connector terminals.

CVT unit		Condition	Resistance (Approx.)
Connector	Terminal		
F209	12 – 18	CVT fluid temperature: 20°C (68°F)	6.5 kΩ
		CVT fluid temperature: 50°C (122°F)	2.2 kΩ
		CVT fluid temperature: 80°C (176°F)	0.87 kΩ

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

NO >> Replace transaxle assembly. Refer to [TM-220. "Removal and Installation"](#).

P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0715 INPUT SPEED SENSOR A

DTC Description

INFOID:000000011746222

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0715	INPUT SPEED SENSOR A (Input/Turbine Speed Sensor A Circuit)	Diagnosis condition	When any of 1, 2 or 3 is satisfied: - When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Primary pulley speed: Less than 150 rpm - Secondary pulley speed: 500 rpm or more - When all of the following conditions are satisfied and this state is maintained for 0.5 seconds: 10-msec-ago primary pulley speed: 1,000 rpm or more - Now primary pulley speed: 0 rpm - When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Range: D or L - Engine speed: 450 rpm or more - Input speed: 300 rpm or more - Primary pulley speed: 300 rpm or more - Secondary pulley speed: 300 rpm or more - Differences between engine speed and primary pulley speed: More than 1,000 rpm - Differences between primary pulley speed and input speed: More than 1,000 rpm - Differences between engine speed and input speed: 1,000 rpm or less - Lock-up command is being given (except for slip lock-up) - DTC other than the applicable DTC is not detected.
		Signal	—
		Threshold	When the following conditions are satisfied: - TCM power supply voltage: More than 11 V - After range change completion, it spends 2 seconds or more.
		Diagnosis delay time	—

POSSIBLE CAUSE

- Harness or connector (Primary speed sensor circuit is open or shorted)
- Primary speed sensor

FAIL-SAFE

- Start is slow
- Acceleration is slow
- Lock-up is not performed
- Manual mode is not activated

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

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

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

Selector lever : "D" POSITION
Engine speed : 1,200 rpm or more
Vehicle speed : 40 km/h (25 MPH) or more

4. Stop the vehicle.
5. Check the first trip DTC.

Is "P0715" detected?

YES >> Go to [TM-123, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220327

1. CHECK PRIMARY SPEED SENSOR POWER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect primary speed sensor connector.
3. Turn ignition switch ON.
4. Check voltage between primary speed sensor harness connector terminal and ground.

+		–	Voltage
Primary speed sensor			
Connector	Terminal		
F35	3	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 6.

2. CHECK PRIMARY SPEED SENSOR GROUND CIRCUIT

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

Primary speed sensor		—	Continuity
Connector	Terminal		
F35	1		
F35	1	Ground	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3. CHECK CIRCUIT BETWEEN PRIMARY SPEED SENSOR AND TCM (PART 1)

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

P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Primary speed sensor		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F35	2	F25	35	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

4.CHECK CIRCUIT BETWEEN PRIMARY SPEED SENSOR AND TCM (PART 2)

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

Primary speed sensor		—	Continuity
Connector	Terminal		
F35	2	Ground	Not existed

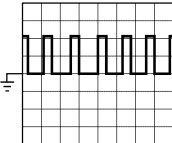
Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace malfunctioning parts.

5.CHECK TCM INPUT SIGNALS

1. Connect all of disconnected connectors.
2. Lift the vehicle.
3. Start the engine.
4. Check frequency of primary speed sensor.

+		—	Condition	Frequency (Approx.)
TCM				
Connector	Terminal			
F25	35	Ground	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	600 Hz 1mSec/div  5V/div JSDIA3770GB

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Replace primary speed sensor. Refer to [TM-206, "Removal and Installation"](#).

6.DETECT MALFUNCTIONING ITEMS

Check the following items:

- Harness open circuit or short circuit between ignition switch and IPDM E/R. Refer to [PG-29, "Wiring Diagram - IGNITION POWER SUPPLY -"](#).
- Harness open circuit or short circuit between IPDM E/R connector terminal 61 and primary speed sensor connector terminal 3.
- 10A fuse (No.43, located in the IPDM E/R). Refer to [PG-76, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Repair or replace malfunctioning parts.

P0717 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0717 INPUT SPEED SENSOR A

DTC Description

INFOID:0000000011746223

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0717	INPUT SPEED SENSOR A (Input/Turbine Speed Sensor "A" Circuit No Signal)	Diagnosis condition	When any of 1, 2 or 3 is satisfied: - When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Primary pulley speed: 500 rpm or more - Input speed: Less than 150 rpm - Range: Other than P, N - P0715 is not detected - When all of the following conditions are satisfied and this state is maintained for 0.5 seconds: 10-msec-ago input speed: 1,000 rpm or more - Now input speed: 0 rpm - When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Range: D or L - Engine speed: 450 rpm or more - Input speed: 300 rpm or more - Primary pulley speed: 300 rpm or more - Secondary pulley speed: 300 rpm or more - Differences between engine speed and primary pulley speed: 1,000 rpm or less - Differences between primary pulley speed and input speed: More than 1,000 rpm - Differences between engine speed and input speed: More than 1,000 rpm - Lock-up command is being given (except for slip lock-up) - DTC other than the applicable DTC is not detected.
		Signal	—
		Threshold	When the following conditions are satisfied: - TCM power supply voltage: More than 11 V - After range change completion, it spends 2 seconds or more.
		Diagnosis delay time	—

POSSIBLE CAUSE

- Harness or connector (Input speed sensor circuit is open or shorted)
- Input speed sensor

FAIL-SAFE

- Start is slow
- Acceleration is slow
- Lock-up is not performed

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

1. PREPARATION BEFORE WORK

P0717 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

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

With CONSULT

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

Selector lever : "D" position
Engine speed : 1,200 rpm or more
Vehicle speed : 40 km/h (25 MPH) or more

4. Stop the vehicle.
5. Check the first trip DTC.

Is "P0717" detected?

YES >> Go to [TM-126, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220329

1.CHECK INPUT SPEED SENSOR POWER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect input speed sensor connector.
3. Turn ignition switch ON.
4. Check voltage between input speed sensor harness connector terminal and ground.

+		–	Voltage
Input speed sensor			
Connector	Terminal		
F37	3	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 6.

2.CHECK INPUT SPEED SENSOR GROUND CIRCUIT

Check continuity between input speed sensor harness connector terminal and ground.

Input speed sensor		—	Continuity
Connector	Terminal		
F37	1	Ground	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3.CHECK CIRCUIT BETWEEN INPUT SPEED SENSOR AND TCM (PART 1)

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

P0717 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Input speed sensor		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F37	2	F25	24	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

4.CHECK CIRCUIT BETWEEN INPUT SPEED SENSOR AND TCM (PART 2)

Check continuity between input speed sensor harness connector terminal and ground.

Input speed sensor		—	Continuity
Connector	Terminal		
F37	2	Ground	Not existed

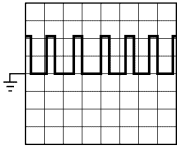
Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace malfunctioning parts.

5.CHECK TCM INPUT SIGNALS

1. Connect all of disconnected connectors.
2. Lift the vehicle.
3. Start the engine.
4. Check frequency of input speed sensor.

+		—	Condition	Frequency (Approx.)
TCM				
Connector	Terminal			
F25	24	Ground	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	800 Hz 1mSec/div  5V/div JSDIA3770GB

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Replace input speed sensor. Refer to [TM-204, "Removal and Installation"](#).

6.DETECT MALFUNCTIONING ITEMS

Check the following items:

- Harness open circuit or short circuit between ignition switch and IPDM E/R. Refer to [PG-29, "Wiring Diagram - IGNITION POWER SUPPLY -"](#).
- Harness open circuit or short circuit between IPDM E/R connector terminal 61 and input speed sensor connector terminal 3.
- 10A fuse (No.43, located in the IPDM E/R). Refer to [PG-76, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Repair or replace malfunctioning parts.

P0740 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0740 TORQUE CONVERTER

DTC Description

INFOID:000000011746224

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0740	TORQUE CONVERTER (Torque Converter Clutch Circuit/Open)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P0743 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (Torque converter clutch solenoid valve circuit is open or shorted to power supply)
- Torque converter clutch solenoid valve

FAIL-SAFE

- Start is slow
- Acceleration is slow
- Lock-up is not performed

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

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. PREPARATION BEFORE OPERATION

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "FLUID TEMP".
4. Confirm that the CVT fluid temperature is in the following range.

FLUID TEMP : 20°C (68°F) or more

With GST

1. Start the engine.
2. 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.

Is the CVT fluid 20°C (68°F) or more?

YES >> GO TO 3.

NO >> 1. Warm the transaxle.
2. GO TO 3.

3. CHECK DTC DETECTION

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

P0740 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

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

3. Stop the vehicle.
4. Check the first trip DTC.

Is "P0740" detected?

YES >> Go to [TM-129, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000011220331

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 harness connector terminal and CVT unit harness connector terminal.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	38	F43	5	Existed

Is the inspection result normal?

YES >> GO TO 2.
NO >> Repair or replace malfunctioning parts.

2.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	5	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).
NO >> There is malfunction of torque converter clutch solenoid valve circuit. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

P0743 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0743 TORQUE CONVERTER

DTC Description

INFOID:000000011746225

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0743	TORQUE CONVERTER (Torque Converter Clutch Circuit Electrical)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Torque converter clutch solenoid valve circuit is shorted to ground)
- Torque converter clutch solenoid valve

FAIL-SAFE

- Start is slow
- Acceleration is slow
- Lock-up is not performed

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

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. PREPARATION BEFORE OPERATION

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "FLUID TEMP".
4. Confirm that the CVT fluid temperature is in the following range.

FLUID TEMP : 20°C (68°F) or more

With GST

1. Start the engine.
2. 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.

Is the CVT fluid 20°C (68°F) or more?

YES >> GO TO 3.

NO >> 1. Warm the transaxle.
2. GO TO 3.

3. CHECK DTC DETECTION

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

Selector lever : "D" position

Vehicle speed : 40 km/h (25 MPH) or more

P0743 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

3. Stop the vehicle.
4. Check the first trip DTC.

Is "P0743" detected?

- YES >> Go to [TM-131, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220333

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 harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F25	38	Ground	Not existed

Is the inspection result normal?

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

2.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	5	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).
NO >> There is malfunction of torque converter clutch solenoid valve circuit. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

P0744 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0744 TORQUE CONVERTER

DTC Description

INFOID:000000011746227

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0744	TORQUE CONVERTER (Torque converter clutch circuit intermittent)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P0717 is not detected. • CAN communication is normal • Torque converter slip speed: (40+vehicle speed/2) rpm
		Signal	—
		Threshold	LU pressure: More than 0.2 MPa
		Diagnosis delay time	Maintained for 30 seconds

POSSIBLE CAUSE

- Torque converter clutch solenoid valve
- Control valve assembly
- Torque converter

FAIL-SAFE

- Start is slow
- Acceleration is slow
- Lock-up is not performed

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

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. PREPARATION BEFORE OPERATION

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "FLUID TEMP".
4. Confirm that the CVT fluid temperature is in the following range.

FLUID TEMP : 20°C (68°F) or more

With GST

1. Start the engine.
2. 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.

Is the CVT fluid 20°C (68°F) or more?

YES >> GO TO 3.

NO >> 1. Warm the transaxle.
2. GO TO 3.

3. CHECK DTC DETECTION

P0744 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

1. Drive the vehicle.
2. Maintain the following conditions for 30 seconds or more.

Selector lever : "D" position
Accelerator pedal position : 0.5/8 or more
Vehicle speed : 40 km/h (25 MPH) or more

3. Stop the vehicle.
4. Check the first trip DTC.

Is "P0744" detected?

YES >> Go to [TM-133. "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-42. "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220335

1.CHECK INTERMITTENT INCIDNT

Refer to [GI-42. "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transaxle assembly. Refer to [TM-220. "Removal and Installation"](#).
NO >> Repair or replace the malfunction items.

P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0746 PRESSURE CONTROL SOLENOID A

DTC Description

INFOID:000000011746228

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
P0746	PC SOLENOID A (Pressure Control Solenoid A Performance/Stuck Off)	1	Diagnosis condition	When all of the following conditions are satisfied: • Engine speed: More than 600 rpm • Primary pulley speed: More than 450 rpm • Idle is not being detected. • Acceleration/deceleration speed: -0.49 m/s^2 (-0.05 G) or more • The primary pulley speed experienced 300 rpm or more and the secondary pulley speed experienced 250 rpm or more at least once. • Secondary pulley speed: More than 150 rpm • TCM power supply voltage: More than 11 V
			Signal	—
			Threshold	The following condition is detected twice or more (1 second or more later after detection of the first) in the same DC • Status with the shifting ratio of the primary pulley speed/secondary pulley ratio exceeding 2.825 is 0.2 sec or more continuously
			Diagnosis delay time	—
		2	Diagnosis condition	When all of the following conditions are satisfied: • Engine speed: More than 600 rpm • Primary pulley speed: More than 450 rpm • Idle is not being detected. • Acceleration/deceleration speed: -0.49 m/s^2 (-0.05 G) or more • The primary pulley speed experienced 300 rpm or more and the secondary pulley speed experienced 250 rpm or more at least once. • Secondary pulley speed: More than 150 rpm • TCM power supply voltage: More than 11 V
			Signal	—
			Threshold	The following condition is detected twice or more (1 second or more later after detection of the first) in the same DC • Status with the shifting ratio of the primary pulley speed/secondary pulley ratio exceeding 3.625 is 0.1 sec or more continuously.
			Diagnosis delay time	—

NOTE:

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

POSSIBLE CAUSE

- Line pressure solenoid valve
- Control valve assembly

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

DTC CONFIRMATION PROCEDURE

P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

CAUTION:

Be careful of the driving speed.

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

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

Selector lever	: "D" position
Accelerator pedal position	: 0.5/8 or more
Vehicle speed	: 40 km/h (25 MPH) or more

4. Stop the vehicle.
5. Check the first trip DTC.

Is "P0746"detected?

- | | |
|------|--|
| YES | >> Go to TM-135, "Diagnosis Procedure" . |
| NO-1 | >> To check malfunction symptom before repair: Refer to GI-42, "Intermittent Incident" . |
| NO-2 | >> Confirmation after repair: INSPECTION END |

Diagnosis Procedure

INFOID:0000000011220337

1.CHECK INTERMITTENT INCIDNT

Refer to [GI-42, "Intermittent Incident"](#).

Is the inspection result normal?

- | | |
|-----|--|
| YES | >> Replace transaxle assembly. Refer to TM-220, "Removal and Installation" . |
| NO | >> Repair or replace the malfunction items. |

P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0776 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000011746229

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
P0776	PC SOLENOID B (Pressure Control Solenoid "B" Performance/Stuck Off)	1	Diagnosis condition	When all of the following conditions are satisfied: • DTC other than the applicable DTC is not detected. • Engine speed: More than 625 rpm • Selector lever: Other than P/N position • CVT fluid temperature: More than -20°C (-4°F) • TCM power supply: More than 11 V • The difference between instruction pressure of secondary pressure and 10-msec-ago instruction secondary pressure is 0 MPa or more • Instruction pressure of secondary pressure: 0 MPa or more • Instruction pressure of secondary pressure - secondary pressure: More than 1.2 MPa
			Signal	—
			Threshold	When all of the following conditions are satisfied and this state is maintained for 1.52 seconds: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • Instruction pressure of secondary pressure - secondary pressure: 0.25 MPa or more
			Diagnosis delay time	Maintained for 10 seconds or more
		2	Diagnosis condition	When all of the following conditions are satisfied: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • TCM power supply: More than 11 V • The difference between instruction pressure of secondary pressure and 10-msec-ago instruction secondary pressure is 0 MPa or more • Secondary pressure - instruction pressure of secondary pressure: More than 1.2 MPa
			Signal	—
			Threshold	When all of the following conditions are satisfied and this state is maintained for 5.5 seconds: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • Secondary pressure - instruction pressure of secondary pressure: 1.2 MPa or more
			Diagnosis delay time	Maintained for 10 seconds or more

POSSIBLE CAUSE

Secondary pressure solenoid valve

FAIL-SAFE

- When a malfunction occurs on the low oil pressure side
 - Selector shock is large
 - Start is slow
 - Acceleration is slow
 - Lock-up is not performed
 - Vehicle speed is not increased
- When a malfunction occurs on the high oil pressure side

P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

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

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following condition for 20 seconds or more.

Selector lever : "D" position

Vehicle speed : 40 km/h (25 MPH) or more

Accelerator pedal position : 1.0/8 or more

4. Stop the vehicle.
5. Check the first trip DTC.

Is "P0776" detected?

YES >> Go to [TM-137, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220339

1. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

NO >> Repair or replace the malfunction items.

P0778 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0778 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000011746230

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	TCM power supply voltage: More than 11 V
P0778	PC SOLENOID B (Pressure Control Solenoid "B" Electrical)	Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Secondary pressure solenoid valve circuit is shorted to ground)
- Secondary pressure solenoid valve

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

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

1. Start the engine and wait for 5 seconds or more.
2. Check the first trip DTC.

Is "P0778" detected?

YES >> Go to [TM-138, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220341

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 harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F25	39	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK SECONDARY PRESSURE SOLENOID VALVE CIRCUIT

P0778 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Check continuity between CVT unit harness connector terminal and ground.

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	3	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).
NO >> There is malfunction of secondary pressure solenoid valve circuit. Replace transaxle assembly.
Refer to [TM-220, "Removal and Installation"](#).

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P0779 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0779 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:000000011746231

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0779	PC SOLENOID B (Pressure control solenoid B Intermittent)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P0778 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open or shorted to power supply
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Secondary pressure solenoid valve circuit open or shorted to power supply)
- Secondary pressure solenoid valve

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

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

4. Stop the vehicle.
5. Check the first trip DTC.

Is "P0779" detected?

YES >> Go to [TM-140, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000011220343

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 harness connector terminal and CVT unit harness connector terminal.

P0779 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	39	F43	3	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2.CHECK SECONDARY PRESSURE SOLENOID VALVE CIRCUIT

Check continuity between CVT unit harness connector terminal and ground.

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	3	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> There is malfunction of secondary pressure solenoid valve circuit. Replace transaxle assembly.
Refer to [TM-220, "Removal and Installation"](#).

P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0826 UP AND DOWN SHIFT SW

DTC Description

INFOID:0000000011220344

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0826	UP/DOWN SHIFT SWITCH (Up and Down Shift Switch Circuit)	Diagnosis condition	Engine is started
		Signal	—
		Threshold	TCM monitors manual mode, non-manual mode, up or down switch signal, and detects as irregular when impossible input pattern occurs
		Diagnosis delay time	1 second or more

POSSIBLE CAUSE

- Manual mode switch
- Harness or connectors
(Manual mode switch circuit are open or shorted.)

FAIL-SAFE

Manual mode is not activated

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

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

Is "P0826" detected?

- YES >> Go to [TM-143, "Diagnosis Procedure"](#).
NO >> GO TO 3.

3. CHECK DTC DETECTION (PART 2)

With CONSULT

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

Is "P0826" detected?

- YES >> Go to [TM-143, "Diagnosis Procedure"](#).
NO >> GO TO 4.

4. CHECK DTC DETECTION (PART 3)

With CONSULT

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

Is "P0826" detected?

- YES >> Go to [TM-143, "Diagnosis Procedure"](#).
NO >> GO TO 5.

5. CHECK DTC DETECTION (PART 4)

P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

With CONSULT

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

Is "P0826" detected?

- YES >> Go to [TM-143, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220345

1.CHECK DTC (COMBINATION METER)

With CONSULT

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 [TM-59, "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-144, "Component Inspection"](#).

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.

P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

CVT shift selector		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M78	7	M23	30	Existed
	8		33	
	9		32	
	10		31	

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

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-42, "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	11	Ground	Existed

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Repair or replace damaged parts.

Component Inspection

INFOID:0000000011220346

1.MANUAL MODE SWITCH

Check continuity between CVT shift selector connector terminals.

CVT shift selector	Condition	Continuity
Terminal		
7 – 11	Manual shift gate position (neutral)	Existed
	Other than the above	Not existed
8 – 11	Selector lever: DOWN (– side)	Existed
	Other than the above	Not existed
9 – 11	Selector lever: UP (+ side)	Existed
	Other than the above	Not existed
10 – 11	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-193, "Removal and Installation"](#).

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

DTC Description

INFOID:0000000011746232

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0841	FLUID PRESS SEN/SW A (Transmission Fluid Pressure Sensor/ Switch "A" Circuit Range/Performance)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • DTC other than the applicable DTC is not detected. • Primary pulley speed: 300 rpm or more • Secondary pulley speed: 250 rpm or more • Target speed for shifting: Less than 0.1 seconds • Pulley ratio: 0.5 – 1.0
		Signal	—
		Threshold	Primary pulley pressure is outside the specified value
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (Secondary pressure sensor circuit is open or shorted)
- Harness or connector (Primary pressure sensor circuit is open or shorted)
- Secondary pressure sensor

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

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

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

Selector lever : "D" position

Vehicle speed : Constant speed of 40 km/h (25 MPH)

CAUTION:

Also keep the accelerator pedal position constant.

4. Stop the vehicle.
5. Check the first trip DTC.

Is "P0841" detected?

YES >> Go to [TM-146, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Diagnosis Procedure

INFOID:0000000011220348

1. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace the transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

P0847 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0847 TRANSMISSION FLUID PRESSURE SEN/SW B

DTC Description

INFOID:0000000011746233

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0847	FLUID PRESS SEN/SW B (Transmission Fluid Pressure Sensor/ Switch B Circuit Low)	Diagnosis condition	When all of the following conditions are satisfied: • CVT fluid temperature: More than -20°C (-4°F) • TCM power supply voltage: 11 V or more
		Signal	—
		Threshold	Secondary pressure sensor voltage: 0.09 V or less
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (Secondary pressure sensor circuit is open or shorted to ground)
- Secondary pressure sensor
- Control valve assembly

FAIL-SAFE

Not changed from normal driving

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

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "FLUID TEMP".
4. Maintain the following conditions for 10 seconds or more.

FLUID TEMP : -20°C (-4°F)

5. Check the first trip DTC.

With GST

1. Start the engine and wait for at least 10 seconds.

CAUTION:

When the ambient temperature is less than -20°C (-4°F) and the engine is cold, warm up the engine for approximately 5 minutes.

2. Check the first trip DTC.

Is "P0847" detected?

YES >> Go to [TM-147, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220350

1.CHECK TCM INPUT SIGNALS

1. Turn ignition switch OFF.

P0847 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

2. Start the engine.
3. Check voltage between TCM harness connector terminals.

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F25	16	Ground	• Selector lever: “N” position • At idle	1.7 – 1.8 V

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

NO >> GO TO 2.

2.CHECK CIRCUIT BETWEEN TCM AND CVT UNIT (PART 1)

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

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	11	F43	18	Existed
	16		14	
	26		22	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3.CHECK CIRCUIT BETWEEN TCM AND CVT UNIT (PART 2)

Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F25	16	Ground	Not existed
	26		

Is the inspection result normal?

YES >> There is malfunction of secondary pressure sensor circuit. Replace transaxle assembly. Refer to [TM-220. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

P0848 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0848 TRANSMISSION FLUID PRESSURE SEN/SW B

DTC Description

INFOID:0000000011746234

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0848	FLUID PRESS SEN/SW B (Transmission Fluid Pressure Sensor/ Switch B Circuit Low)	Diagnosis condition	When all of the following conditions are satisfied: • CVT fluid temperature: More than -20°C (-4°F) • TCM power supply voltage: More than 11 V • Instruction secondary pressure: 5.7 MPa or less
		Signal	—
		Threshold	Secondary pressure sensor voltage: 4.7 V or more
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (Secondary pressure sensor circuit is shorted to power supply)
- Secondary pressure sensor
- Control valve assembly

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1. PREPARATION BEFORE WORK

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

>> GO TO 2.

2. CHECK DTC DETECTION

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "FLUID TEMP".
4. Maintain the following conditions for 10 seconds or more.

FLUID TEMP : More than -20°C (-4°F)

5. Check the first trip DTC.

With GST

1. Start the engine and wait for at least 10 seconds.

CAUTION:

When the ambient temperature is less than -20°C (-4°F) and the engine is cold, warm up the engine for approximately 5 minutes.

2. Check the first trip DTC.

Is "P0848" detected?

YES >> Go to [TM-150, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

P0848 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

Diagnosis Procedure

INFOID:000000011220352

1.CHECK TCM INPUT SIGNALS

1. Turn ignition switch OFF.
2. Start the engine.
3. Check voltage between TCM harness connector terminals.

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F25	16	Ground	• Selector lever: “N” position • At idle	1.7 – 1.8 V

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> GO TO 2.

2.CHECK SECONDARY PRESSURE SENSOR POWER CIRCUIT

1. Turn ignition switch OFF.
2. Connect TCM connector.
3. Disconnect CVT unit connector.
4. Turn ignition switch ON.
5. Check voltage between CVT unit harness connector terminal and ground.

+		–	Voltage (Approx.)
CVT unit			
Connector	Terminal		
F43	22	Ground	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3.CHECK SECONDARY PRESSURE SENSOR SIGNAL CIRCUIT

Check voltage between CVT unit harness connector terminal and ground.

+		–	Voltage (Approx.)
CVT unit			
Connector	Terminal		
F43	14	Ground	0 V

Is the inspection result normal?

YES >> There is malfunction of secondary pressure sensor circuit. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

P084C TRANSMISSION FLUID PRESSURE SEN/SW H

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P084C TRANSMISSION FLUID PRESSURE SEN/SW H

DTC Description

INFOID:0000000011746235

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P084C	FLUID PRESS SEN/SW H (Transmission Fluid Pressure Sensor/ Switch H Circuit Low)	Diagnosis condition	When all of the following conditions are satisfied: • CVT fluid temperature: More than -20°C (-4°F) • TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	Primary pressure sensor voltage: 0.09 V or less
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (Primary pressure sensor circuit is open or shorted to ground)
- Primary pressure sensor
- Control valve assembly

FAIL-SAFE

Not changed from normal driving

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

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "FLUID TEMP".
4. Maintain the following conditions for 10 seconds or more.

FLUID TEMP : More than -20°C (-4°F)

5. Check the first trip DTC.

With GST

1. Start the engine and wait for at least 10 seconds.

CAUTION:

When the ambient temperature is less than -20°C (-4°F) and the engine is cold, warm up the engine for approximately 5 minutes.

2. Check the first trip DTC.

Is "P084C" detected?

YES >> Go to [TM-150, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220354

1.CHECK TCM INPUT SIGNALS

1. Turn ignition switch OFF.

P084C TRANSMISSION FLUID PRESSURE SEN/SW H

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

2. Start the engine.
3. Check voltage between TCM harness connector terminals.

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F25	17	Ground	• Selector lever: “N” position • At idle	1.32 – 1.34 V

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

NO >> GO TO 2.

2. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT (PART 1)

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

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	11	F43	18	Existed
	17		13	
	26		22	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3. CHECK CIRCUIT BETWEEN TCM AND CVT UNIT (PART 2)

Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F25	17	Ground	Not existed
	26		

Is the inspection result normal?

YES >> There is malfunction of primary pressure sensor circuit. Replace transaxle assembly. Refer to [TM-220. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

P084D TRANSMISSION FLUID PRESSURE SEN/SW H

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P084D TRANSMISSION FLUID PRESSURE SEN/SW H

DTC Description

INFOID:0000000011746236

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P084D	FLUID PRESS SEN/SW H (Transmission Fluid Pressure Sensor/ Switch "H" Circuit High)	Diagnosis condition	When all of the following conditions are satisfied: • CVT fluid temperature: More than -20°C (-4°F) • TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	Primary pressure sensor voltage: 4.7 V or more
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (Primary pressure sensor circuit is open or shorted to ground)
- Primary pressure sensor
- Control valve assembly

FAIL-SAFE

Not changed from normal driving

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

With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "FLUID TEMP".
4. Maintain the following conditions for 10 seconds or more.

FLUID TEMP : More than -20°C (-4°F)

5. Check the first trip DTC.

With GST

1. Start the engine and wait for at least 10 seconds.

CAUTION:

When the ambient temperature is less than -20°C (-4°F) and the engine is cold, warm up the engine for approximately 5 minutes.

2. Check the first trip DTC.

Is "P084D" detected?

YES >> Go to [TM-153, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220356

1.CHECK TCM INPUT SIGNALS

1. Turn ignition switch OFF.

P084D TRANSMISSION FLUID PRESSURE SEN/SW H

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

2. Start the engine.
3. Check voltage between TCM harness connector terminals.

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F25	17	Ground	• Selector lever: “N” position • At idle	1.32 – 1.34 V

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

NO >> GO TO 2.

2. CHECK PRIMARY PRESSURE SENSOR POWER CIRCUIT

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

+		-	Voltage (Approx.)
CVT unit			
Connector	Terminal		
F43	22	Ground	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

3. CHECK PRIMARY PRESSURE SENSOR SIGNAL CIRCUIT

Check voltage between CVT unit harness connector terminal and ground.

+		-	Voltage (Approx.)
CVT unit			
Connector	Terminal		
F43	13	Ground	0 V

Is the inspection result normal?

YES >> There is malfunction of primary pressure sensor circuit. Replace transaxle assembly. Refer to [TM-220. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

P0863 TCM COMMUNICATION

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0863 TCM COMMUNICATION

DTC Description

INFOID:0000000011746237

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
		Diagnosis condition	Engine is started
P0863	CONTROL UNIT (CAN) (TCM Communication Circuit)	Signal	—
		Threshold	An error is detected at the initial CAN diagnosis of TCM
		Diagnosis delay time	Within 1 second

POSSIBLE CAUSE

TCM

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

1. Start the engine.
2. Check the DTC.

Is "P0863" detected?

YES >> Go to [TM-155, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220358

1.CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-198, "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

P0890 TCM

DTC Description

INFOID:000000011746238

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0890	TCM (Transmission Control Module Power Relay Sense Circuit Low)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	Battery voltage: Less than 8.4 V
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector [TCM power supply (back-up) circuit is open or shorted]
- TCM

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed
- Vehicle speed is not increased

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

1. Start the engine and wait for 5 seconds or more.
2. Check the DTC.

Is "P0890" detected?

YES >> Go to [TM-156, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000011220360

1. CHECK TCM BATTERY POWER SUPPLY (BACK-UP) CIRCUIT

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

TCM		—	Voltage
Connector	Terminal		
F25	45	Ground	10 – 16 V
	46		

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 2.

2. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Open or short circuit of harness between battery positive terminal and TCM connector terminals 45, and 46.
- 10A fuse [No.25, located in the fuse block (J/B)]. Refer to [PG-73. "Terminal Arrangement"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).
NO >> Repair or replace malfunctioning parts.

3.CHECK INTERMITTENT INCIDENT

Refer to [GI-42. "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace the TCM. Refer to [TM-198. "Removal and Installation"](#).
NO >> Repair or replace malfunctioning parts.

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P0962 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0962 PRESSURE CONTROL SOLENOID A

DTC Description

INFOID:0000000011746239

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0962	PC SOLENOID A (Pressure Control Solenoid A Control Circuit Low)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Line pressure solenoid valve circuit is shorted to ground)
- Line pressure solenoid valve

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

1. Start the engine and wait for 5 seconds or more.
2. Check the first trip DTC.

Is "P0962" detected?

YES >> Go to [TM-158, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220362

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 harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F25	30	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK LINE PRESSURE SOLENOID VALVE CIRCUIT

Check continuity between CVT unit harness connector terminal and ground.

P0962 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	1	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

NO >> There is malfunction of line pressure solenoid valve circuit. Replace transaxle assembly. Refer to [TM-220. "Removal and Installation"](#).

P0963 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0963 PRESSURE CONTROL SOLENOID A

DTC Description

INFOID:0000000011746240

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0963	PC SOLENOID A (Pressure Control Solenoid A Control Circuit High)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P0962 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Line pressure solenoid valve circuit is open or shorted to power supply)
- Line pressure solenoid valve

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

1. Start the engine and wait for 5 seconds or more.
2. Check the first trip DTC.

Is "P0963" detected?

YES >> Go to [TM-160. "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220364

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 harness connector terminal and ground.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	30	F43	1	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

P0963 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

2.CHECK LINE PRESSURE SOLENOID VALVE CIRCUIT

Check continuity between CVT unit harness connector terminal and ground.

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	1	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> There is malfunction of line pressure solenoid valve circuit. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

P0965 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0965 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:000000011746351

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
P0965	PC SOLENOID B (Pressure Control Solenoid B Control Circuit Range Performance)	1	Diagnosis condition	When all of the following conditions are satisfied: • DTC other than the applicable DTC is not detected. • Engine speed: More than 625 rpm • Selector lever: Other than P/N position • CVT fluid temperature: More than -20°C (-4°F) • TCM power supply: More than 11 V • The difference between instruction pressure of primary pressure and 10-msec-ago instruction primary pressure is 0 MPa or more • Instruction pressure of primary pressure: 0.86 MPa or more • Instruction pressure of primary pressure - primary pressure: More than 1.2 MPa
			Signal	—
			Threshold	When all of the following conditions are satisfied and this state is maintained for 1 second: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • Engine speed: More than 625 rpm • Instruction pressure of primary pressure: More than 2 MPa • Primary pressure: 0.4 MPa or less
			Diagnosis delay time	Maintained for 10 seconds
		2	Diagnosis condition	When all of the following conditions are satisfied: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • TCM power supply: More than 11 V • The difference between instruction pressure of primary pressure and 10-msec-ago instruction primary pressure is 0 MPa or more • Primary pressure - instruction pressure of primary pressure: More than 1.2 MPa
			Signal	—
			Threshold	When all of the following conditions are satisfied and this state is maintained for 5.5 seconds: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • Primary pressure - instruction pressure of primary pressure: 1.2 MPa or more
			Diagnosis delay time	Maintained for 10 seconds

POSSIBLE CAUSE

- Harness or connector (Primary pressure solenoid valve circuit is open or shorted)
- Primary pressure solenoid valve

FAIL-SAFE

- When a malfunction occurs on the low oil pressure side

P0965 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed
- When a malfunction occurs on the high oil pressure side
- Selector shock is large
- Lock-up is not performed

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

1. Start the engine.
2. Drive the vehicle.
3. Maintain the following conditions for 20 seconds or more.

Vehicle speed : 40 km/h (25 MPH) or more

4. Stop the vehicle.
5. Check the first trip DTC.

Is "P0965" detected?

YES >> Go to [TM-163. "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220366

1. CHECK INTERMITTENT INCIDENT

Refer to [GI-42. "Intermittent Incident"](#).

Is the inspection result normal?

YES >> Replace transaxle assembly. Refer to [TM-220. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

P0966 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0966 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000011746352

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0966	PC SOLENOID B (Pressure Control Solenoid B Control Circuit Low)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Primary pressure solenoid valve circuit shorted to ground)
- Primary pressure solenoid valve

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

1. Start the engine and wait for 5 seconds or more.
2. Check the first trip DTC.

Is "P0966" detected?

YES >> Go to [TM-164, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220368

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 harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F25	40	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

2. CHECK PRIMARY PRESSURE SOLENOID VALVE CIRCUIT

Check continuity between CVT unit harness connector terminal and ground.

P0966 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	2	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

NO >> There is malfunction of primary pressure solenoid valve circuit. Replace transaxle assembly.
Refer to [TM-220. "Removal and Installation"](#).

P0967 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P0967 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000011746353

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0967	PC SOLENOID B (Pressure Control Solenoid B Control Circuit High)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P0966 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Primary pressure solenoid valve circuit open or shorted to power supply)
- Primary pressure solenoid valve

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Lock-up is not performed

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

1. Start the engine and wait for 5 seconds or more.
2. Check the first trip DTC.

Is "P0967" detected?

YES >> Go to [TM-166, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220370

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 harness connector terminal and ground.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	40	F43	2	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

P0967 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

2. CHECK PRIMARY PRESSURE SOLENOID VALVE CIRCUIT

Check continuity between CVT unit harness connector terminal and ground.

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	2	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> There is malfunction of primary pressure solenoid valve circuit. Replace transaxle assembly.
Refer to [TM-220, "Removal and Installation"](#).

P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P2765 INPUT SPEED SENSOR B

DTC Description

INFOID:0000000011746354

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P2765	INPUT SPEED SENSOR B (Input/Turbine Speed Sensor B Circuit)	Diagnosis condition	When any of 1, 2 or 3 is satisfied: - When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Secondary pulley speed: Less than 149 rpm - Primary pulley speed: 1,000 rpm or more - When all of the following conditions are satisfied and this state is maintained for 0.5 seconds: 10-msec-ago secondary pulley speed: 1000 rpm or more - Now secondary pulley speed: 0 rpm - When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Range: D or L - Engine speed: 450 rpm or more - Primary pulley speed: 300 rpm or more - Secondary pulley speed: 300 rpm or more - Input speed: 300 rpm or more - The difference between engine speed and primary pulley speed is 1,000 rpm or less - The difference between engine speed and input speed is 1,000 rpm or less - The difference between primary pulley speed and input speed is 1,000 rpm or less - Lock-up command is being given (except for slip lock-up) - DTC other than the applicable DTC is not detected. - When any of following items are satisfied: - Primary pulley speed/secondary pulley speed: More than 2.9 - Primary pulley speed/secondary pulley speed: Less than 0.3
		Signal	—
		Threshold	When all of the following conditions are satisfied: - TCM power supply voltage: More than 11 V - After range change completion, it spends 2 seconds or more.
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

- Harness or connector (Output speed sensor circuit is open or shorted)
- Output speed sensor

FAIL-SAFE

- Start is slow

P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

- Acceleration is slow
- Lock-up is not performed
- Manual mode is not activated

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

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

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

Selector lever : "D" position
Engine speed : 1,200 rpm or more
Vehicle speed : 55 km/h (34 MPH) or more

4. Stop the vehicle.
5. Check the first trip DTC.

Is "P2765" detected?

YES >> Go to [TM-169, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220372

1. CHECK OUTPUT SPEED SENSOR POWER CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect output speed sensor connector.
3. Turn ignition switch ON.
4. Check voltage between output speed sensor harness connector terminal and ground.

+		–	Voltage
Output speed sensor			
Connector	Terminal		
F36	3	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 6.

2. CHECK OUTPUT SPEED SENSOR GROUND CIRCUIT

Check continuity between output speed sensor harness connector terminal and ground.

Output speed sensor		—	Continuity
Connector	Terminal		
Connector	Terminal		
F36	1	Ground	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace malfunctioning parts.

P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

3. CHECK CIRCUIT BETWEEN OUTPUT SPEED SENSOR AND TCM (PART 1)

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

Output speed sensor		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F36	2	F25	34	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace malfunctioning parts.

4. CHECK CIRCUIT BETWEEN OUTPUT SPEED SENSOR AND TCM (PART 2)

Check continuity between output speed sensor harness connector terminal and ground.

Output speed sensor		—	Continuity
Connector	Terminal		
F36	2	Ground	Not existed

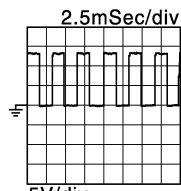
Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace malfunctioning parts.

5. CHECK TCM INPUT SIGNALS

1. Connect all of disconnected connectors.
2. Lift the vehicle.
3. Start the engine.
4. Check frequency of output speed sensor.

+		—	Condition	Frequency (Approx.)
TCM				
Connector	Terminal			
F25	34	Ground	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	200 Hz 2.5mSec/div  5V/div JSDIA1897GB

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Replace output speed sensor. Refer to [TM-208, "Removal and Installation"](#).

6. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Harness open circuit or short circuit between ignition switch and IPDM E/R. Refer to [PG-29, "Wiring Diagram - IGNITION POWER SUPPLY -"](#).
- Harness open circuit or short circuit between IPDM E/R connector terminal 61 and output speed sensor connector terminal 3.
- 10A fuse (No.43, located in the IPDM E/R). Refer to [PG-76, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

NO >> Repair or replace malfunctioning parts.

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P2813 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P2813 SELECT SOLENOID

DTC Description

INFOID:0000000011746356

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
P2813	SELECT SOLENOID (Select solenoid)	1	Diagnosis condition	—
			Signal	—
			Threshold	When all the following conditions are established • DTC other than the applicable DTC is not detected. • Throttle position: More than 6.27 deg. • Vehicle speed: Less than 3 km/h (1 MPH) • CVT fluid temperature: More than 20°C (68°F) • Selector lever: Other than P, N • Turbine speed when performed N → D, N (P) → R: More than 500 rpm • TCM power supply voltage: More than 11 V - Detection time • N → D: 0.4 seconds • N → R: 0.3 seconds • P → R: 0.3 seconds
			Diagnosis delay time	Three times in 1DC
		2	Diagnosis condition	—
			Signal	—
			Threshold	When all of the following conditions are satisfied: • Selector lever: Other than P, N • Vehicle speed: Less than 3 km/h (1 MPH) • Differences between primary pulley speed and secondary speed: Less than 120 rpm • Clutch instructions pressure: 0.95 MPa or more • Differences between turbine speed and input speed: Less than 200 rpm • Turbine speed – speed: More than 450 rpm • DTC other than the applicable DTC is not detected. • TCM power supply voltage: More than 11 V
			Diagnosis delay time	The counting of time continues while all of the following conditions are satisfied and stops when the conditions become unsatisfied (the count is maintained). When accumulated time reaches 30 seconds (Clutch is judged as engaged and the count is reset.)

NOTE:

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

POSSIBLE CAUSE

Select solenoid valve

FAIL-SAFE

- When a malfunction occurs on the low oil pressure side
 - Selector shock is large
 - Start is slow
 - Acceleration is slow
 - Vehicle speed is not increased
- When a malfunction occurs on the high oil pressure side
 - Selector shock is large

P2813 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

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 1

1. Start the engine.
2. Maintain the following conditions. (Keep 30 seconds or more after the selector lever shifted.)

Selector lever : N → D, N → R, P → R

3. Check the first trip DTC.

Is "P2813" detected?

- YES >> Go to [TM-173, "Diagnosis Procedure"](#).
NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220374

1. CHECK INTERMITTENT INCIDENT

Refer to [GI-42, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).
NO >> Repair or replace malfunctioning parts.

P2814 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P2814 SELECT SOLENOID

DTC Description

INFOID:0000000011746357

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P2814	SELECT SOLENOID (Select solenoid)	Diagnosis condition	TCM power supply voltage: 11 V or more
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Select solenoid valve circuit shorted to ground)
- Select solenoid valve

FAIL-SAFE

Selector shock is large

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

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

1. Start the engine.
2. Maintain the following conditions. (Keep 5 seconds or more after the selector lever shifted.)

Selector lever : N → D, N → R, P → R

3. Check the first trip DTC.

Is "P2814" detected?

YES >> Go to [TM-174, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220376

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 harness connector terminal and ground.

TCM		—	Continuity
Connector	Terminal		
F25	37	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

P2814 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

2.CHECK SELECT SOLENOID VALVE CIRCUIT

Check continuity between CVT unit harness connector terminal and ground.

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	4	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> There is malfunction of select solenoid valve circuit. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

P2815 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

P2815 SELECT SOLENOID

DTC Description

INFOID:0000000011746359

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P2815	SELECT SOLENOID (Select solenoid)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P2814 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open
		Diagnosis delay time	Maintained for 1 second

POSSIBLE CAUSE

- Harness or connector (Select solenoid valve circuit open or shorted to power supply)
- Select solenoid valve

FAIL-SAFE

Selector shock is large

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

1. Start the engine.
2. Maintain the following conditions. (Keep 5 seconds or more after the selector lever shifted.)

Selector lever : N → D, N → R, P → R

3. Check the first trip DTC.

Is "P2815" detected?

YES >> Go to [TM-176, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-42, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000011220378

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 harness connector terminal and ground.

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F25	37	F43	4	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

P2815 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

2.CHECK SELECT SOLENOID VALVE CIRCUIT

Check continuity between CVT unit harness connector terminal and ground.

CVT unit		—	Condition	Resistance
Connector	Terminal			
F209	4	Ground	CVT fluid temperature: 20°C (68°F)	5.5 – 7.0 Ω
			CVT fluid temperature: 50°C (122°F)	6.0 – 8.0 Ω
			CVT fluid temperature: 80°C (176°F)	6.5 – 8.5 Ω

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> There is malfunction of select solenoid valve circuit. Replace transaxle assembly. Refer to [TM-220, "Removal and Installation"](#).

MAIN POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

MAIN POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000011220379

1.CHECK TCM POWER CIRCUIT (PART 1)

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

+		–	Voltage
TCM			
Connector	Terminal		
F25	45	Ground	10 – 16 V
	46		

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

2.CHECK TCM POWER CIRCUIT (PART 2)

Check voltage between TCM harness connector terminals and ground.

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F25	47	Ground	Ignition switch ON	10 – 16 V
			Ignition switch OFF	Approx. 0 V
	48		Ignition switch ON	10 – 16 V
			Ignition switch OFF	Approx. 0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 5.

3.CHECK TCM GROUND CIRCUIT

Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F25	41	Ground	Existed
	42		

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

NO >> Repair or replace malfunctioning parts.

4.DETECT MALFUNCTION ITEMS (PART 1)

Check the following items:

- Open or short circuit in harness between battery positive terminal and fuse block (J/B). Refer to [PG-16, "Wiring Diagram - BATTERY POWER SUPPLY -"](#).
- Open or short circuit in harness between fuse block (J/B) connector terminal 2N and TCM harness connector terminal 45, and 46.
- 10A fuse [No.25, located in the fuse block (J/B)]. Refer to [PG-73, "Terminal Arrangement"](#).

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

MAIN POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

NO >> Repair or replace malfunctioning parts.

5.DETECT MALFUNCTIONING ITEMS (PART 2)

Check the following items:

- Open or short circuit in harness between ignition switch and IPDM E/R. Refer to [PG-29. "Wiring Diagram - IGNITION POWER SUPPLY -"](#).
- Open or short circuit in harness between IPDM E/R connector terminal 61 and TCM harness connector terminal 47, and 48.
- 10A fuse (No.43, located in the IPDM E/R). Refer to [PG-76. "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

YES >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

NO >> Repair or replace malfunctioning parts.

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SHIFT POSITION INDICATOR CIRCUIT

Component Parts Function Inspection

INFOID:0000000011220380

1. CHECK SHIFT POSITION INDICATOR

1. Start the engine.
2. Shift selector lever.
3. Check that the selector lever position and the shift position indicator on the combination meter are identical.

Is the inspection result normal?

- YES >> INSPECTION END
 NO >> Go to [TM-180, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000011220381

1. CHECK TCM INPUT/OUTPUT SIGNAL

Ⓟ With CONSULT

1. Start the engine.
2. Select "Data Monitor" in "TRANSMISSION".
3. Select "RANGE".
4. Shift selector lever.
5. Check that selector lever position, "RANGE" on CONSULT screen, and shift position indicator display on combination meter are identical.

Is the check result normal?

- YES >> INSPECTION END
 NO-1 ("RANGE" is changed but is not displayed on shift position indicator.)>>Check "Self Diagnostic Result" in "TRANSMISSION".
 NO-2 ("RANGE" and shift position indicator are different.)>>Check "Self Diagnostic Result" in "TRANSMISSION".
 NO-3 (Specific "RANGE" is not displayed on shift position indicator.)>>Check "Self Diagnostic Result" in "METER/M&A".

SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

SHIFT LOCK SYSTEM

Component Function Check

INFOID:0000000011220382

1. CHECK SHIFT LOCK OPERATION (PART 1)

1. Turn ignition ON.
2. Shift the selector lever to "P" (Park) position.
3. Attempt to shift the selector lever to any other position with the brake pedal released.

Can the selector lever be shifted to any other position?

- YES >> Refer to [TM-181, "Diagnosis Procedure"](#).
NO >> GO TO 2.

2. CHECK SHIFT LOCK OPERATION (PART 2)

Attempt to shift the selector lever to any other position with the brake pedal depressed.

Can the selector lever be shifted to any other position?

- YES >> Inspection End.
NO >> Refer to [TM-181, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:0000000011220383

Regarding Wiring Diagram information, refer to [TM-72, "Wiring diagram"](#).

1. CHECK POWER SOURCE

1. Turn ignition switch OFF.
2. Disconnect BCM connector M18.
3. Check voltage between BCM connector M18 terminal 27 and ground while pressing the brake pedal.

BCM		Ground	Condition	Voltage
Connector	Terminal		Brake pedal depressed	Battery voltage
M18	27			

Is the inspection result normal?

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

2. CHECK STOP LAMPS

Do the stop lamps operate normally?

Is the inspection result normal?

- YES >> Check the following:
- Harness between fuse block (J/B) and BCM.
 - Fuse block (J/B).
- NO >> Refer to [TM-72, "Wiring diagram"](#).

3. CHECK HARNESS BETWEEN BCM AND CVT SHIFT SELECTOR

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

3. Check continuity between BCM connector M80 terminal 108 and ground.

SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

BCM		Ground	Continuity
Connector	Terminal		
M80	108		No

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace harness or connector.

4.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 CVT shift selector. Refer to [TM-193, "Removal and Installation"](#).

NO >> Repair or replace harness or connector.

Component Inspection (Shift Lock Solenoid)

INFOID:0000000011220384

1.CHECK SHIFT LOCK SOLENOID

Apply voltage to terminals of shift lock solenoid and park position switch (shift selector) connector and check that shift lock solenoid is activated.

CAUTION:

- Connect the fuse between the terminals when applying the voltage.
- Never cause shorting between terminals.

+ (fuse)	-	Condition	Status
Shift lock solenoid			
Terminal			
3	4	Apply 12 V between terminals 3 and 4 with the park position switch (shift selector) in the "P" (park) position.	Shift lock solenoid operates

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace CVT shift selector. Refer to [TM-193, "Removal and Installation"](#).

Component Inspection (Park Position Switch)

INFOID:0000000011220385

1.CHECK PARK POSITION SWITCH (SHIFT SELECTOR)

Apply voltage to terminals of shift lock solenoid and park position switch (shift selector) connector and check that shift lock solenoid is activated.

CAUTION:

- Connect the fuse between the terminals when applying the voltage.
- Never cause shorting between terminals.

+ (fuse)	-	Condition	Status
Shift lock solenoid			
Terminal			
3	4	Apply 12 V between terminals 3 and 4 with the park position switch (shift selector) in the "P" (park) position.	Shift lock solenoid operates

Is the inspection result normal?

SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10J]

YES >> Inspection End.
NO >> Replace CVT shift selector. Refer to [TM-193, "Removal and Installation"](#).

Component Inspection (Stop Lamp Switch)

INFOID:0000000011220386

1.CHECK STOP LAMP SWITCH

Check the continuity between the stop lamp switch connector terminals.

Stop lamp switch		Condition	Continuity
Terminal			
1	2	Depressed brake pedal	Yes
		Released brake pedal	No

Is the inspection result normal?

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

SYMPTOM DIAGNOSIS

CVT CONTROL SYSTEM

Symptom Table

INFOID:0000000011220387

- The diagnosis item number indicates the order of check. Start checking in the order from 1.
- Perform diagnoses of symptom table 1 before symptom table 2.

Symptom Table 1

Symptom		Engine system	CAN communication line	Transmission range switch (P0705, P0706)	Input speed sensor (P0717)	Primary speed sensor (P0715)	Secondary speed sensor (P2765)	CVT fluid temperature sensor (P0711, P0712, P0713)	Primary pressure sensor (P084C, P084D)	Secondary pressure sensor (P0841, P0847, P0848)	Torque converter clutch solenoid valve (P0740, P0743, P0744)	Manual mode switch	Stall test	CVT position	Power supply	Control valve	CVT fluid level and state	Ignition switch and starter
		EC-148	TM-59										TM-87	TM-88	TM-178	TM-220	TM-189	PG-29, STR-7
Shift Shock	Large shock (N→ D position)	1	4	8				3			6			2		9	5	
	Large shock (N→ R position)	1	4	8				3			6			2		9	5	
	Shock is too large for lock-up.	2	3								6			1		5	4	
Slips/Will Not Engage	Vehicle cannot be started from D position.	8	3		5	6	7	9	10	11			4	2	12	13	1	
	Vehicle cannot be started from R position.	8	3		5	6	7	9	10	11			4	2	12	13	1	
	Does not lock-up.	2	6	8	3	4	10	9	11	12	5		7			13	1	
	Does not hold lock-up condition.	2	6	8	3	4	10	9	11	12	5		7			13	1	
	Lock-up is not released.	2	6		3	4					5		7			8	1	
	With selector lever in D position, acceleration is extremely poor.	3	4	5	7	8	9	12	10	11			2	6	13	14	1	
	With selector lever in R position, acceleration is extremely poor.	3	4	5	7	8	9	12	10	11			2	6	13	14	1	
	Slips at lock-up.	2	6	8	3	4	10	9	11	12	5		7			13	1	

CVT CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10J]

Symptom		Symptom																
		EC-148	TM-59										TM-87	TM-88	TM-178	TM-220	TM-189	PG-29, STR-7
Other	No creep at all.	2	4	3	7	8	9	10	11	12			5	6	13	14	1	
	Vehicle cannot run in all positions.	8		2	5	6	7	9	10	11			3	4	12	13	1	
	With selector lever in D position, driving is not possible.	8		2	5	6	7	9	10	11			3	4	12	13	1	
	With selector lever in R position, driving is not possible.	8		2	5	6	7	9	10	11			3	4	12	13	1	
	Judder occurs during lock-up.	2	6		3	4	5				7					8	1	
	Strange noise in D position.	2	3													4	1	
	Strange noise in R position.	2	3													4	1	
	Strange noise in N position.	2	3													4	1	
	Vehicle does not decelerate by engine brake.	7	3		4	5	6							2		8	1	
	Maximum speed low.	2	3		5	6	7		8	9	11		4			10	1	
	With selector lever in P position, vehicle does not enter parking condition or, with selector lever in another position, parking condition is not cancelled.			1										2				
	Vehicle runs with CVT in P position.			1										3		4	2	
	Vehicle runs with CVT in N position.			1										3		4	2	
	Engine stall.	2	6		3	4			8	9	5		7			10	1	
	Engine stalls when selector lever shifted N → D or R.	2	6		3	4					5					7	1	
	Engine speed does not return to idle.	2	4				3									5	1	
	Does not shift	3	4		5	6	7							2		8	1	

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CVT CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10J]

Symptom		Engine system																	
		EC-148	TM-59																
Other	Cannot be changed to manual mode.	4	2		6	6						1		3	5			1	
	Engine does not start in N or P position.		3										2					1	
	Engine starts in positions other than N or P.		3											2					1

Symptom Table 2

[illegible]

CVT CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10J]

Symptom		Torque converter	Transmission range switch	Oil pump	Forward clutch	Reverse brake	Planetary gear	Bearings	Parking mechanism	Stop lamp switch	Shift lock solenoid	CVT shift selector
		TM-223	TM-219							TM-183	TM-181	TM-193
Slips/Will Not Engage	Vehicle cannot be started from D position.		3	1	2							
	Vehicle cannot be started from R position.		4	1		2			3			
	Does not lock-up.	1	3	2								
	Does not hold lock-up condition.	1	3	2								
	Lock-up is not released.	1		2								
	With selector lever in D position, acceleration is extremely poor.	1	3		2							
	With selector lever in R position, acceleration is extremely poor.	1	4	2		3						
	Slips at lock-up.	1		2								
Other	No creep at all.	1	6	2	4	5	3					
	Vehicle cannot run in all positions.	1		2	4	5	3		6			
	With selector lever in D position, driving is not possible.	1		2	4		3		5			
	With selector lever in R position, driving is not possible.	1		2		4	3		5			
	Judder occurs during lock-up.	1										
	Strange noise in D position.	1		2	4		3	5				
	Strange noise in R position.	1		2		4	3					
	Strange noise in N position.	1		2			3					
	Maximum speed low.	1	5	2	4		3					
	With selector lever in P position, vehicle does not enter parking condition or, with selector lever in another position, parking condition is not cancelled.								1			
	Vehicle runs with CVT in P position.						2		1			
	Vehicle runs with CVT in N position.				2	3	1					
	Engine stall.	1										
	Engine stalls when selector lever shifted N → D or R.	1										
	Does not shift			1								

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CVT CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10J]

Symptom		Torque converter	Transmission range switch	Oil pump	Forward clutch	Reverse brake	Planetary gear	Bearings	Parking mechanism	Stop lamp switch	Shift lock solenoid	CVT shift selector
		TM-223	TM-219							TM-183	TM-181	TM-193
Other	When brake pedal is depressed with ignition switch ON, selector lever cannot be shifted from P position to other position.									1	2	3
	When brake pedal is not depressed with ignition switch ON, selector lever can be shifted from P position to other position.									1	2	3

PERIODIC MAINTENANCE

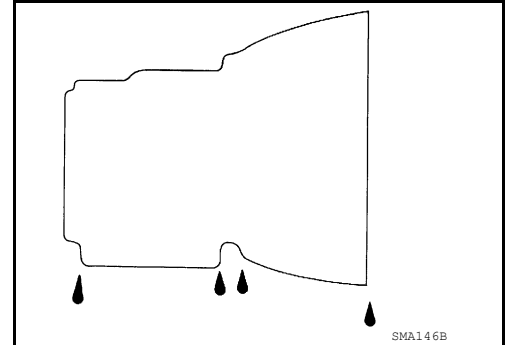
CVT FLUID

Inspection

INFOID:0000000011220388

FLUID LEAKAGE

- Check transaxle surrounding area (oil seal and plug etc.)for fluid leakage.
- If anything is found, repair or replace damaged parts and adjust CVT fluid level. Refer to [TM-191, "Adjustment"](#).



Replacement

INFOID:0000000011220389

- CVT fluid** : Refer to [MA-11, "Fluids and Lubricants"](#).
- Fluid capacity** : Refer to [MA-11, "Fluids and Lubricants"](#).

CAUTION:

- Always use shop paper. Never use shop cloth.
- Replace a drain plug gasket with new ones at the final stage of the operation when installing.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.
- After replacement, always perform CVT fluid leakage check.

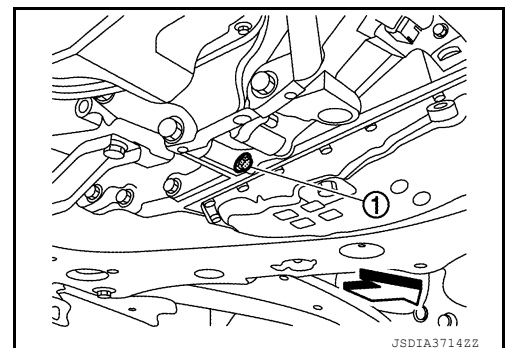
1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to [TM-202, "Exploded View"](#).
6. Install the drain plug to oil pan.

CAUTION:

Drain plug gasket use the old one.

7. Remove the overflow plug ① from converter housing.

← : Vehicle front



CVT FLUID

< PERIODIC MAINTENANCE >

[CVT: RE0F10J]

8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.

CAUTION:

Tighten the charging pipe by hand.

9. Install the ATF changer hose (B) to the charging pipe.

CAUTION:

Press the ATF changer hose all the way onto the charging pipe until it stops.

10. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.

11. Remove the ATF changer hose and charging pipe, then install the overflow plug.

NOTE:

Perform this work quickly because CVT fluid leaks.

12. Lift down the vehicle.

13. Start the engine.

14. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "L", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

15. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).

16. Stop the engine.

17. Lift up the vehicle.

18. Remove the drain plug, and then drain CVT fluid from oil pan.

19. Repeat steps 8 to 18 (one time).

20. Tighten the drain plug to the specified torque. Refer to [TM-202, "Exploded View"](#).

21. Remove the overflow plug.

22. Install the charging pipe set (KV311039S0) into the overflow plug hole.

CAUTION:

Tighten the charging pipe by hand.

23. Install the ATF changer hose to the charging pipe.

CAUTION:

Press the ATF changer hose all the way onto the charging pipe until it stops.

24. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 Imp qt) of the CVT fluid.

25. Remove the ATF changer hose and charging pipe, then install the overflow plug.

NOTE:

Perform this work quickly because CVT fluid leaks.

26. Lift down the vehicle.

27. Start the engine.

28. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "L", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

29. Check that the CONSULT "Data Monitor" in "FLUID TEMP" is 35°C (95°F) to 45°C (113°F).

30. Lift up the vehicle.

31. Remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.

CAUTION:

Perform this work with the vehicle idling.

NOTE:

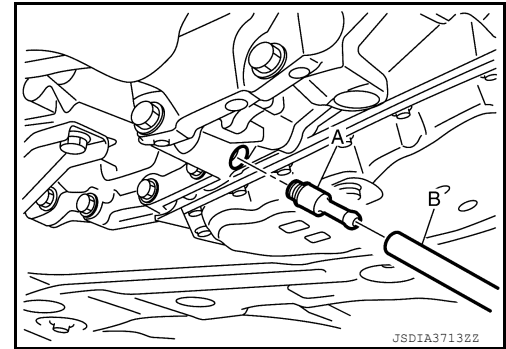
If the CVT fluid is not drained, refer to "Adjustment" and refill with the CVT fluid.

32. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to [TM-202, "Exploded View"](#).

CAUTION:

Never reuse O-ring.

33. Lift down the vehicle.



CVT FLUID

< PERIODIC MAINTENANCE >

[CVT: RE0F10J]

34. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
35. Select "CONFORM CVTF DETERIORATION".
36. Select "Erase".
37. Stop the engine.

Adjustment

INFOID:000000011220390

CVT fluid : Refer to [MA-11, "Fluids and Lubricants"](#).

Fluid capacity : Refer to [MA-11, "Fluids and Lubricants"](#).

CAUTION:

- During adjustment of the CVT fluid level, check CONSULT so that the oil temperature may be maintained from 35 to 45°C (95 to 113°F).
- During adjustment of the CVT fluid level, check that the engine speed is maintaining 500 rpm.
- Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.

1. Check that the selector lever is in the "P" position, then completely engage the parking brake.
2. Start the engine.
3. Adjust the CVT fluid temperature to be approximately 40°C (104°F).

NOTE:

The CVT fluid is largely affected by temperature. Therefore be sure to use CONSULT and check the "FLUID TEMP" under "TRANSMISSION" in "Data Monitor" while adjusting.

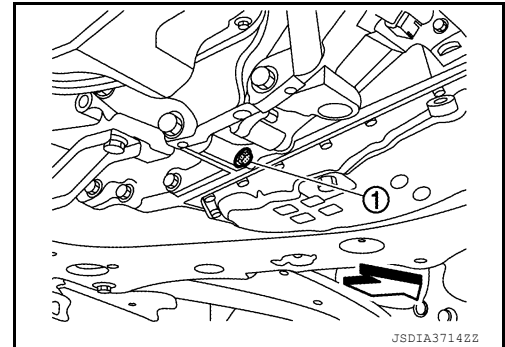
4. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "L", and shift it to the "P" position.

NOTE:

Hold the lever at each position for 5 seconds.

5. Lift up the vehicle.
6. Check that there is no CVT fluid leakage.
7. Remove the overflow plug ① from converter housing.

← : Vehicle front



8. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.

CAUTION:

Tighten the charging pipe by hand.

9. Install the ATF changer hose (B) to the charging pipe.

CAUTION:

Press the ATF changer hose all the way onto the charging pipe until it stops.

10. Fill approximately 0.5 liter (1/2 US qt, 1/2 Imp qt) of the CVT fluid.

11. Remove the ATF changer hose from the charging pipe, and check that the CVT fluid drains out from the charging pipe. If it does not drain out, perform charging again.

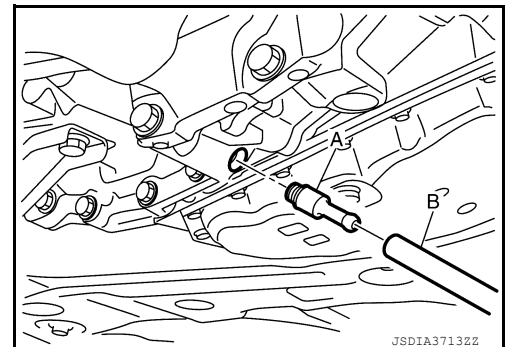
CAUTION:

Perform this work with the vehicle idling.

12. When the flow of CVT fluid slows to a drip, remove the charging pipe from the converter housing.

13. Tighten the overflow plug to the specified torque. Refer to [TM-202, "Exploded View"](#).

CAUTION:



CVT FLUID

< PERIODIC MAINTENANCE >

[CVT: RE0F10J]

Never reuse O-ring.

14. Lift down the vehicle.
15. Stop the engine.

CVT SHIFT SELECTOR

< REMOVAL AND INSTALLATION >

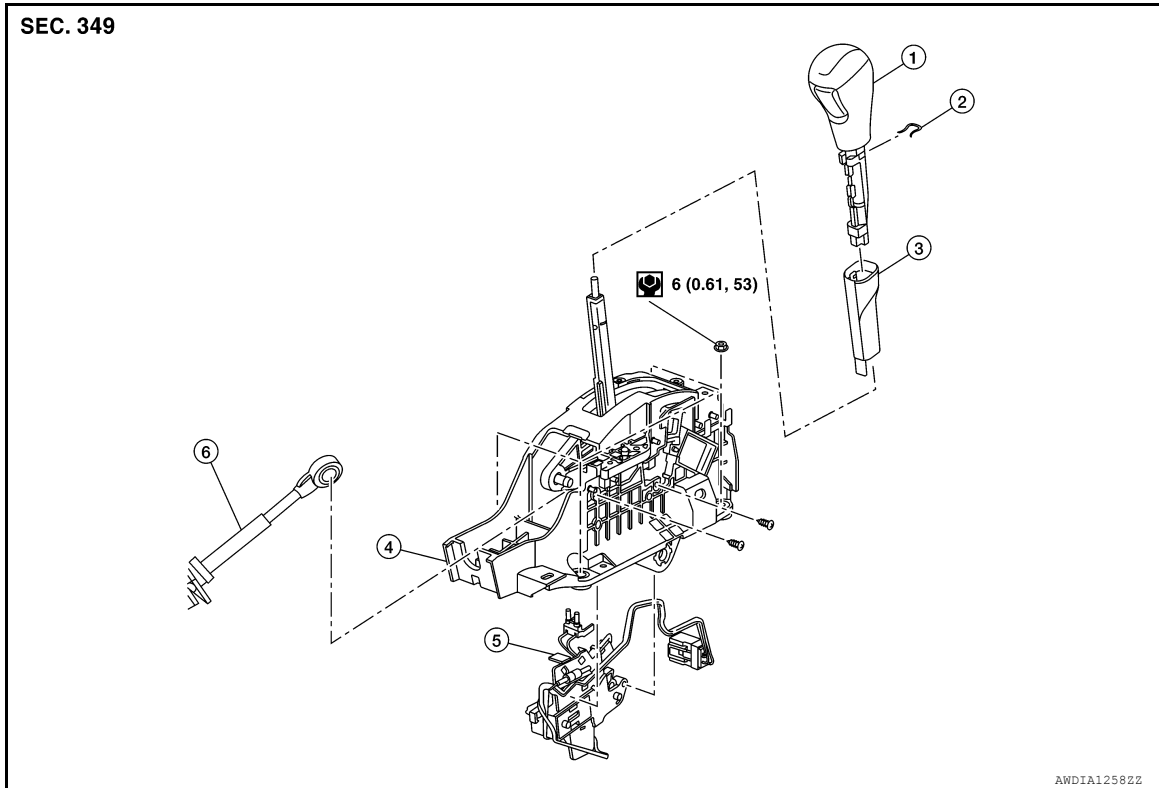
[CVT: RE0F10J]

REMOVAL AND INSTALLATION

CVT SHIFT SELECTOR

Exploded View

INFOID:0000000011220391



- | | | |
|----------------------------|-------------------------------|--------------------------------|
| 1. Shift selector handle | 2. Shift selector handle clip | 3. Shift selector handle cover |
| 4. Shift selector assembly | 5. Shift lock unit | 6. Control cable |

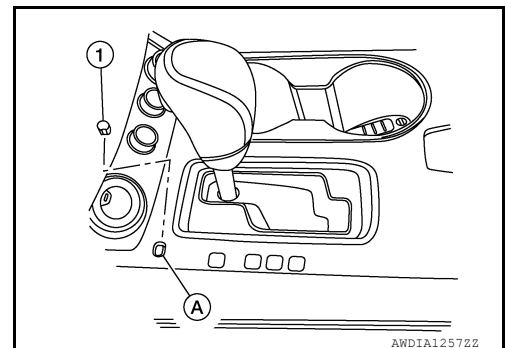
Removal and Installation

INFOID:0000000011220392

REMOVAL

1. Apply the parking brake.
CAUTION:
Make sure the vehicle cannot move with the parking brake applied.
2. 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 shift selector to "N" position while depressing shift lock override button.

⇐ : Front



3. Remove the shift selector handle with the following procedure.

CVT SHIFT SELECTOR

< REMOVAL AND INSTALLATION >

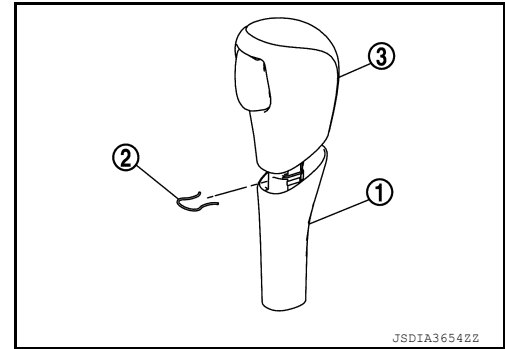
[CVT: RE0F10J]

- a. Slide the shift selector handle cover (1) down.

CAUTION:

Do not damage the knob cover.

- b. Pull out the lock pin (2) from the shift selector handle (3).
c. Pull the shift selector handle and the shift selector handle cover upwards to remove them.

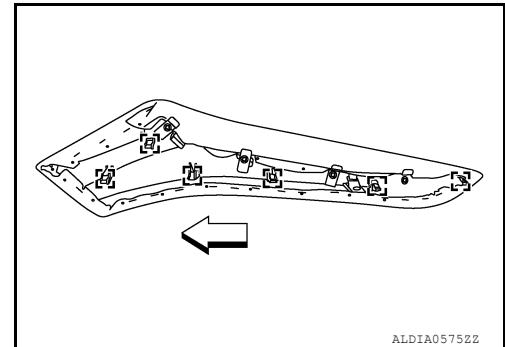


4. Remove center console upper side finisher (LH). Refer to [IP-19, "Exploded View"](#).

5. Release center console side finisher (LH/RH) clip and pawls using a suitable tool and remove.

□: Clip

◀: Front

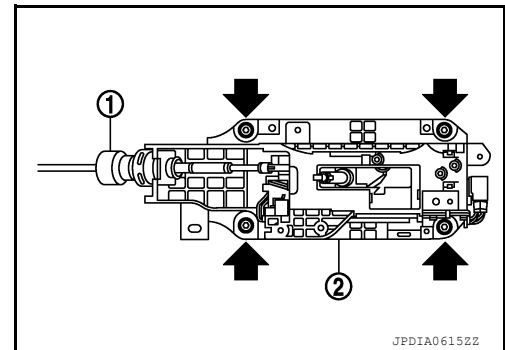


6. Release shift selector finisher clips and pawls using a suitable tool; disconnect the harness connectors and remove. Refer to [IP-19, "Exploded View"](#).

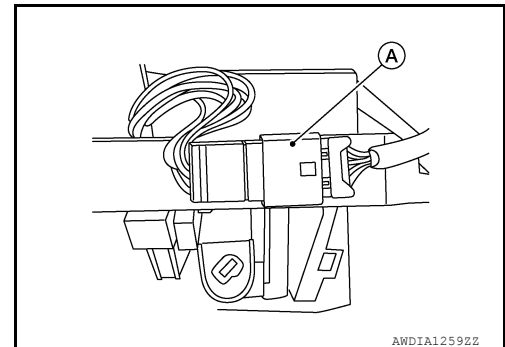
7. Depress shift lock override button and move shift selector to "P" position.

8. Remove control cable (1) from shift selector assembly (2).

9. Remove shift selector assembly nuts (◀), using suitable tool.



10. Disconnect shift selector harness connector (A), using a suitable tool.



11. Remove shift selector assembly from the vehicle.

12. Remove shift lock unit from shift selector assembly.

INSTALLATION

Installation is in the reverse order of removal.

CVT SHIFT SELECTOR

< REMOVAL AND INSTALLATION >

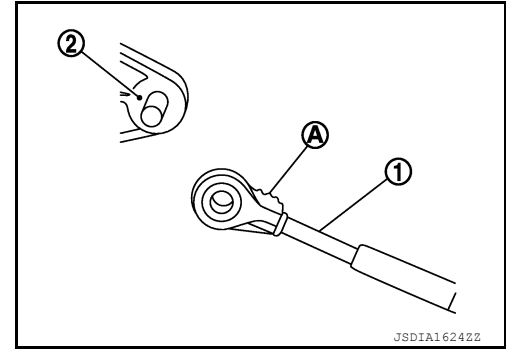
[CVT: RE0F10J]

Shift Selector

- Pay attention to the following when connecting the control cable to the shift selector assembly.
1. When connecting the control cable (1) to the shift selector assembly (2), face the grooved surface of the rib (A) up and insert the control cable until it stops.

NOTE:

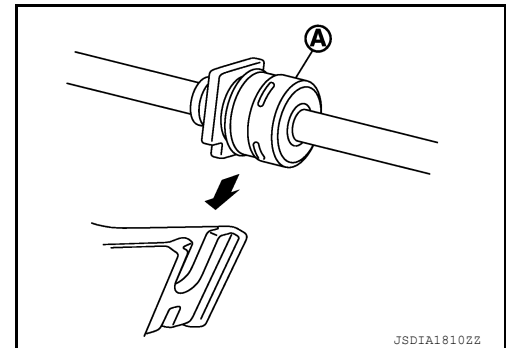
Apply multi-purpose grease to control cable eye before installation.



2. Install the socket (A) onto the shift selector assembly.

CAUTION:

- Place the socket onto the shift selector assembly, then fasten it in place from above.
- Check that the pulling on the socket does not disconnect it.



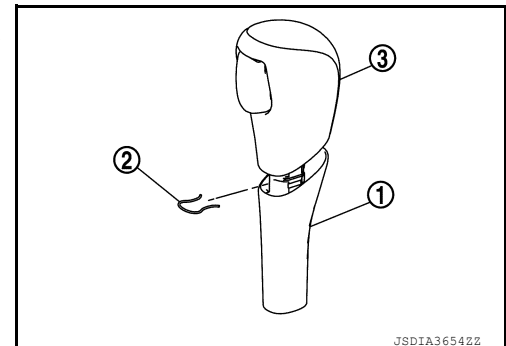
Shift Selector Handle

- Follow the procedure below and place the selector lever knob onto the shift selector.

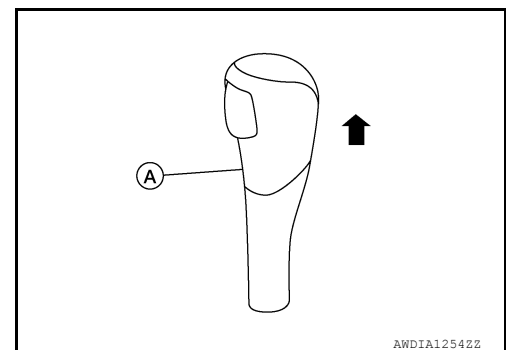
1. Install the lock pin (2) onto the selector lever handle (3).
2. Install the selector lever handle cover (1) onto the selector lever handle.
3. Shift the selector lever to "N" position.
4. Insert selector lever handle into the selector lever until a slight touch is felt.
5. Press and hold the selector lever handle into selector lever until you feel it click into place.

CAUTION:

Do not strike the selector lever handle to press it into place.



6. After installing selector lever handle, pull the handle in the direction shown (←) to check that it does not become disconnected.



Inspection

INSPECTION

Check the CVT position. If a malfunction is found, adjust the CVT position. Refer to [TM-88. "Inspection and Adjustment"](#).

CONTROL CABLE

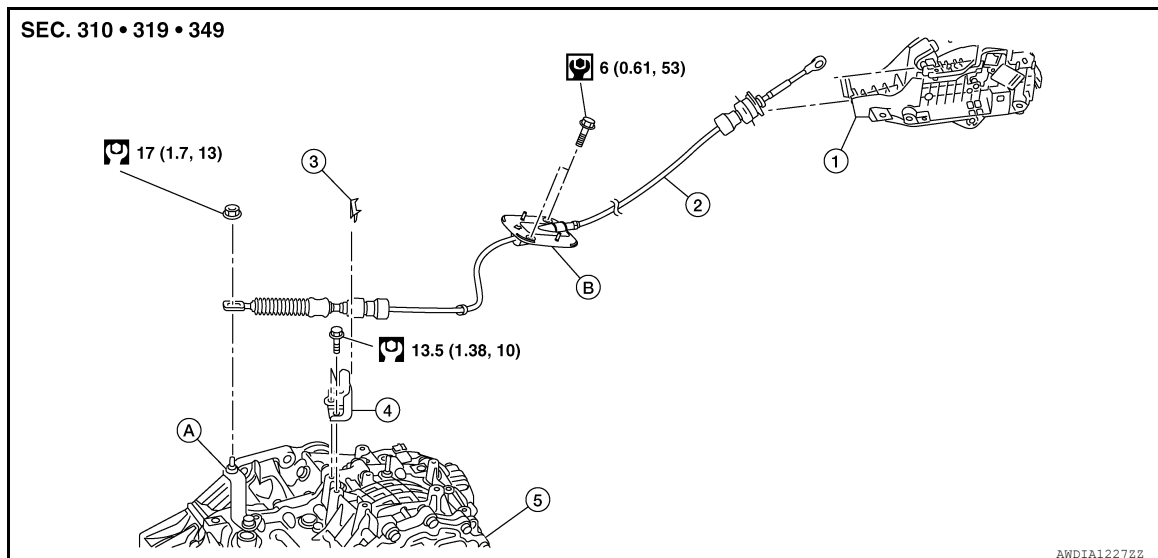
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

CONTROL CABLE

Exploded View

INFOID:0000000011220394



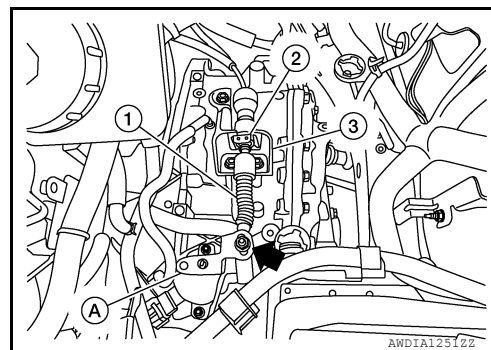
- | | | |
|----------------------------|-----------------------|-----------------|
| 1. Shift selector assembly | 2. Control cable | 3. Lock plate |
| 4. Bracket | 5. Transaxle assembly | A: Manual lever |
| B: Grommet | | |

Removal and Installation

INFOID:0000000011220395

REMOVAL

1. Apply the parking brake.
CAUTION:
Make sure the vehicle cannot move with the parking brake applied.
2. Remove the front air duct, air cleaner cases (upper and lower) with mass air flow sensor and air duct assembly. Refer to [EM-26, "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 upper side finisher (LH). Refer to [IP-19, "Exploded View"](#).

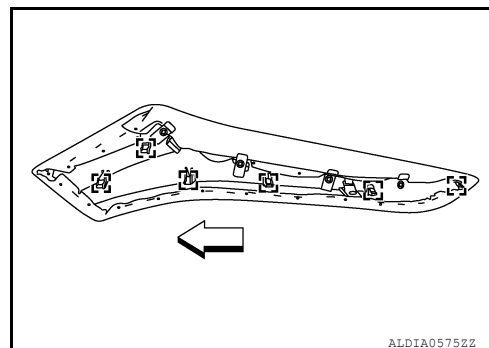
CONTROL CABLE

< REMOVAL AND INSTALLATION >

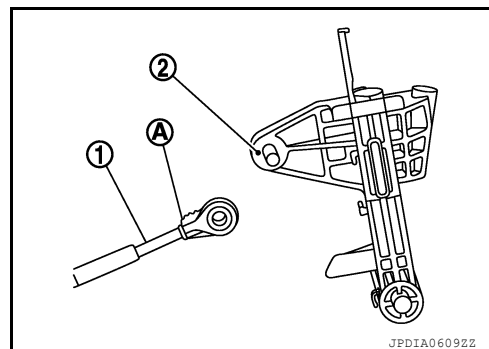
[CVT: RE0F10J]

8. Release center console side finisher (LH/RH) clip and pawls using a suitable tool and remove.

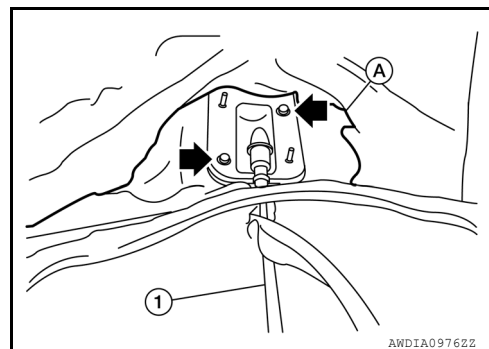
□: Clip
⇐: Front



9. Release shift selector finisher clips and pawls using a suitable tool; disconnect the harness connectors and remove. Refer to [IP-19, "Exploded View"](#).
10. Remove control cable (1) from shift selector assembly (2).
- (A): Ribbed surface



11. Pull back dash trim (A) and remove bolts (⇐), using suitable tool.
12. Remove the control cable (1) from the vehicle.



INSTALLATION

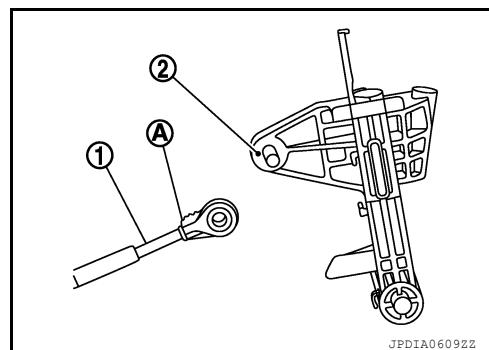
Installation is in the reverse order of removal.

- When installing control cable (1) to 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-197, "Inspection and Adjustment"](#).



INFOID:0000000011220396

Inspection and Adjustment

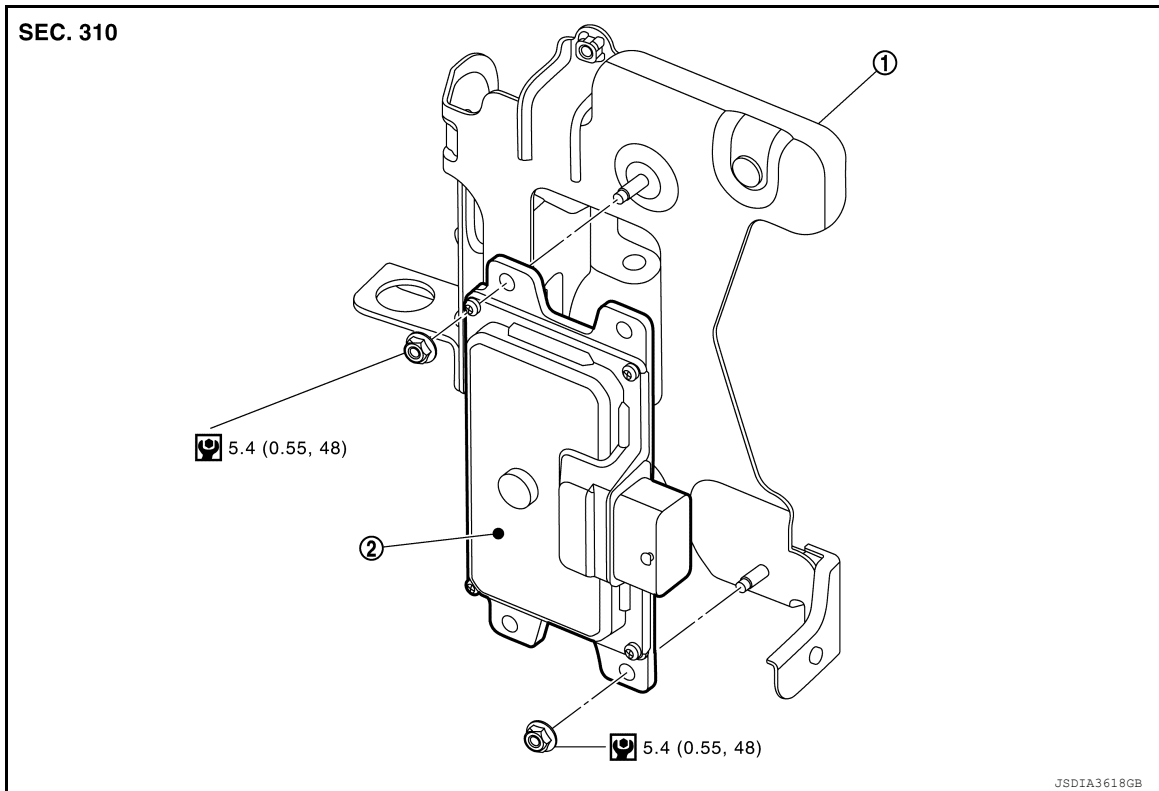
INSPECTION AFTER INSTALLATION

Check the CVT position. If a malfunction is found, adjust the CVT position. Refer to [TM-88, "Inspection and Adjustment"](#) and [TM-197, "Inspection and Adjustment"](#).

TCM

Exploded View

INFOID:0000000011220397



① Bracket

② TCM

: N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000011220398

CAUTION:

- To replace TCM, perform "WRITE IP CHARA – REPLACEMENT TCM" of the CONSULT Work Support before removing TCM and save TCM data in CONSULT. Refer to [TM-79, "Description"](#).
- When replacing TCM, note the "CVTF DETERIORATION DATE" value displayed on CONSULT "CONFORM CVTF DETERIORATION" in MAINTENANCE BOOKLET, before start the operation.
- When replacing TCM, perform "ADDITIONAL SERVICE WHEN REPLACING TCM". Refer to [TM-79, "Work Procedure"](#).
- When replacing TCM and transaxle assembly simultaneously, replace transaxle assembly first and then replace TCM.

REMOVAL

1. Remove the front air duct. Refer to [EM-26, "Exploded View"](#).
2. Disconnect the negative battery terminal. Refer to [PG-86, "Exploded View"](#).
3. Disconnect the harness connector from the TCM.
4. Remove the TCM and bracket as a set.
5. Remove the TCM from the bracket.

INSTALLATION

Installation is the reverse order of removal.

Adjustment

INFOID:0000000011220399

ADJUSTMENT AFTER INSTALLATION

TCM

< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

Perform "ADDITIONAL SERVICE WHEN REPLACING TCM". Refer to [TM-79. "Description"](#).

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AIR BREATHER HOSE

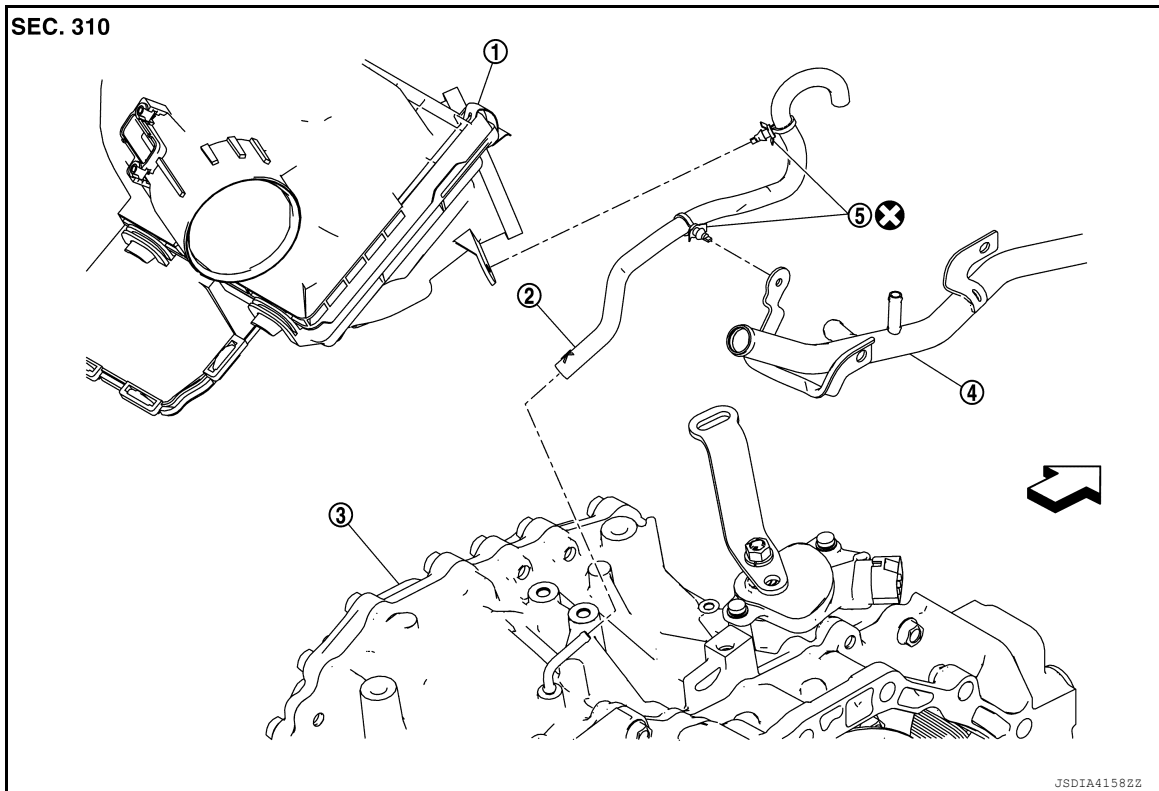
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

AIR BREATHER HOSE

Exploded View

INFOID:0000000011220400



① Air cleaner case

② Air breather hose

③ Transaxle assembly

④ Heater pipe

⑤ Clip

⇐ : Vehicle front

⊗ : Always replace after every disassembly.

Removal and Installation

INFOID:0000000011220401

REMOVAL

1. Remove the front air duct, air cleaner cases (upper and lower) with mass air flow sensor and air duct assembly. Refer to [EM-26, "Removal and Installation"](#).
2. Remove air breather hose.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

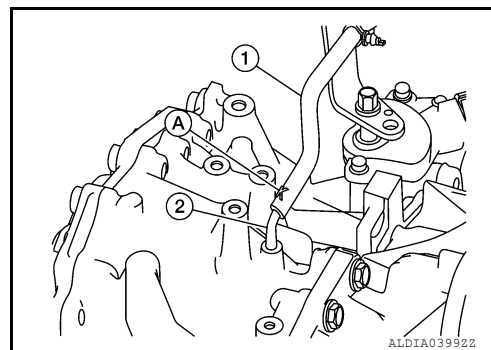
- Do not reuse clips.
- Check that air breather hose is not collapsed or blocked due to folding or bending when installed.

AIR BREATHER HOSE

< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

- Insert air breather hose (1) to air breather tube (2) all the way to the curve of the tube.
- Insert air breather hose to air breather tube so that the paint mark (A) is facing upward.



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OIL PAN

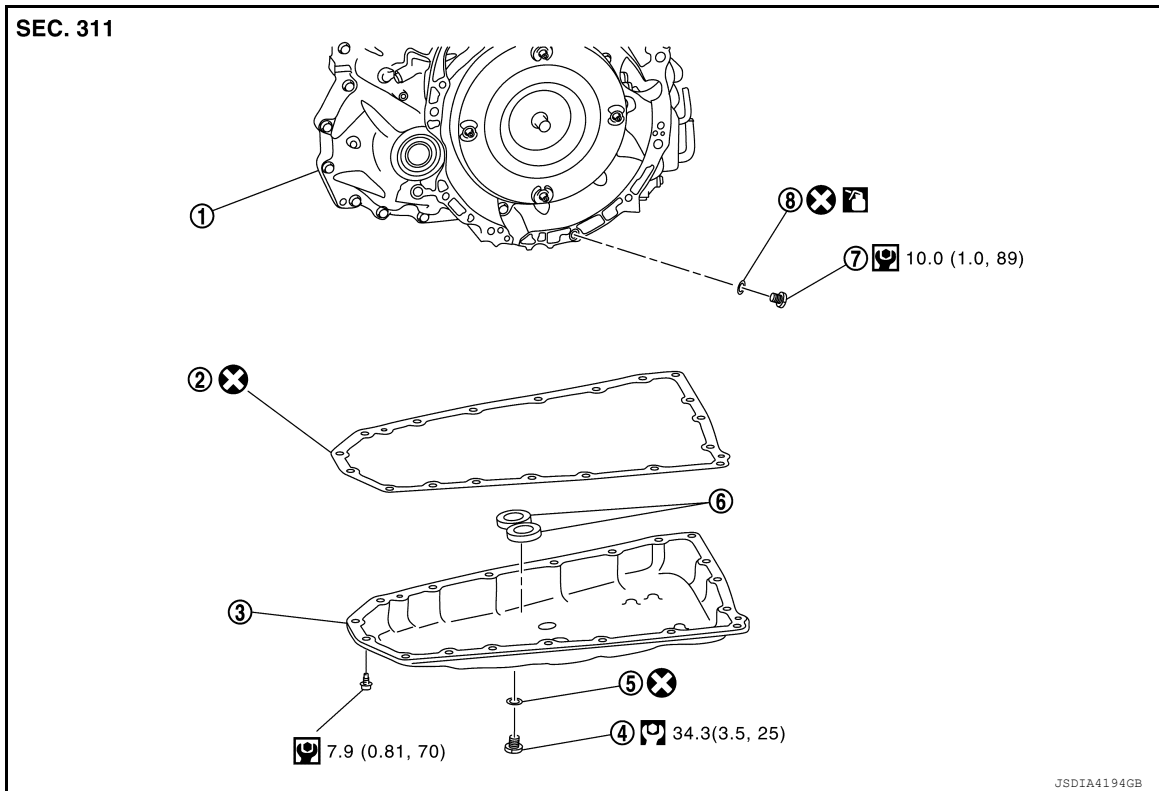
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

OIL PAN

Exploded View

INFOID:0000000011220402



- | | | |
|----------------------|---------------------|-----------|
| ① Transaxle assembly | ② Oil pan gasket | ③ Oil pan |
| ④ Drain plug | ⑤ Drain plug gasket | ⑥ Magnet |
| ⑦ Overflow plug | ⑧ O-ring | |

⊗ : Always replace after every disassembly.

⊙ : N·m (kg-m, ft-lb)

⊕ : N·m (kg-m, in-lb)

🔧 : Apply CVT fluid

Removal and Installation

INFOID:0000000011220403

REMOVAL

1. Remove drain plug from oil pan and then drain the CVT fluid.
2. Remove drain plug gasket.
CAUTION:
Do not reuse drain plug gasket.
3. Remove the oil pan bolts and then remove the oil pan and oil pan gasket.
CAUTION:
Do not reuse oil pan gasket.
4. Remove the magnets from the oil pan.

INSTALLATION

Install the oil pan to the transaxle case with the following procedure.

1. Install the magnet in the oil pan.
CAUTION:
Completely clean the iron powder from the magnet area of oil pan and the magnets.

OIL PAN

< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

2. Install the oil pan gasket to the oil pan.

CAUTION:

- Do not reuse oil pan gasket.
- Completely wipe out any moisture, oil, and old gasket from the oil pan gasket surface and bolt hole of oil pan and transaxle case.

3. Install the oil pan assembly to the transaxle case, then temporarily tighten the oil pan bolts.
4. Tighten the oil pan bolts in the order shown to the specified torque.

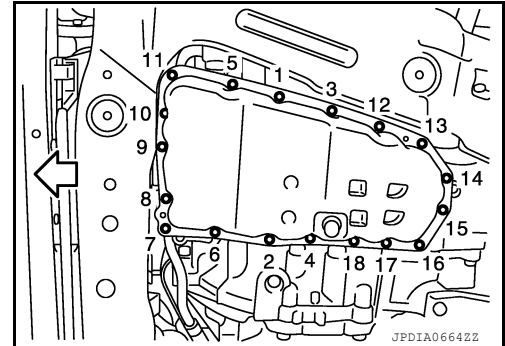
⇐ : Front

5. Tighten the oil pan bolts again clockwise from (1) shown to the specified torque.
6. Install drain plug gasket and drain plug.

CAUTION:

Do not reuse drain plug gasket.

7. Refill with CVT fluid. Refer to [TM-191, "Adjustment"](#).



INFOID:0000000011220404

Inspection and Adjustment

INSPECTION AFTER REMOVAL

Check oil pan for foreign material.

- If a large amount of worn material is found, clutch plate may be worn.
 - If iron powder is found, bearings, gears, or clutch plates may be worn.
 - If aluminum powder is found, bushing may be worn, or chips or burrs of aluminum casting parts may enter.
- Check points where wear is found in all cases.

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

INPUT SPEED SENSOR

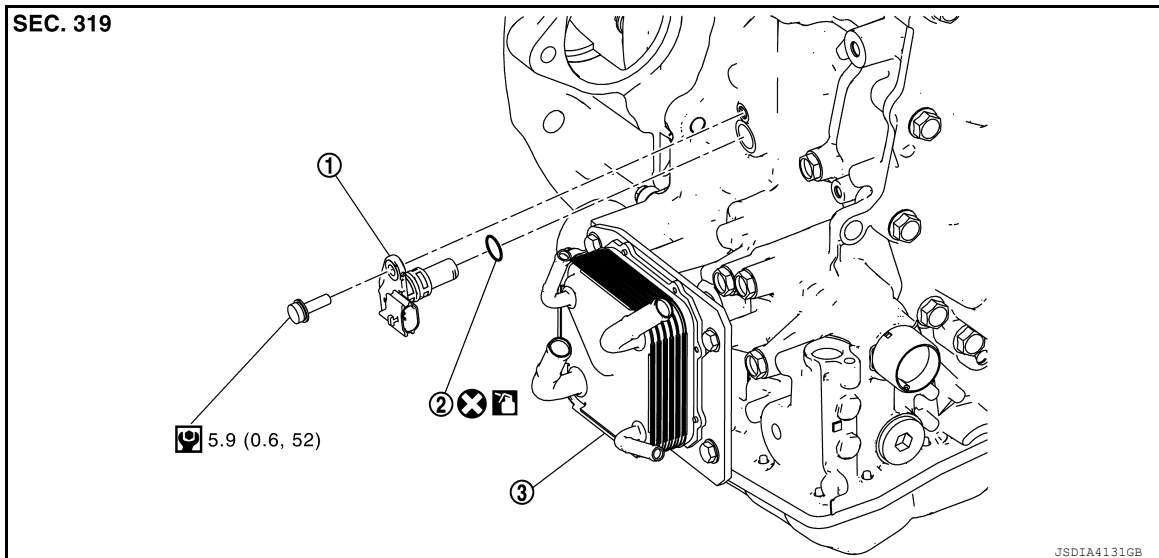
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

INPUT SPEED SENSOR

Exploded View

INFOID:0000000011220405



- ① Input speed sensor ② O-ring ③ Transaxle assembly

⊗ : Always replace after every disassembly.

⌘ : N·m (kg-m, in-lb)

🔧 : Apply CVT fluid

Removal and Installation

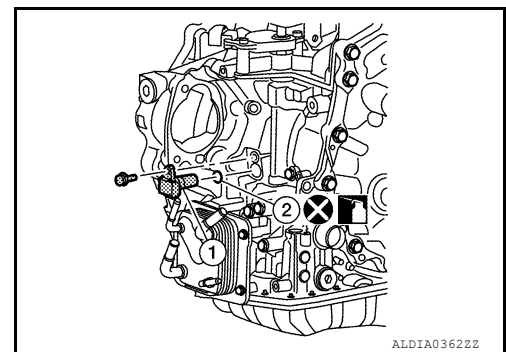
INFOID:0000000011220406

REMOVAL

1. Remove the battery tray. Refer to [PG-88, "Removal and Installation"](#).
2. Remove the starter motor. Refer to [STR-20, "Removal and Installation"](#).
3. Disconnect the harness connector from the input speed sensor (1).
4. Remove the input speed sensor bolt, then the input speed sensor (1).
5. Remove the O-ring (2) from the input 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 Genuine NISSAN CVT Fluid NS-3 or equivalent to the O-ring.

Inspection and Adjustment

INFOID:0000000011220407

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

ADJUSTMENT AFTER INSTALLATION

INPUT SPEED SENSOR

< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

Adjust CVT fluid level. Refer to [TM-191, "Adjustment"](#).

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PRIMARY SPEED SENSOR

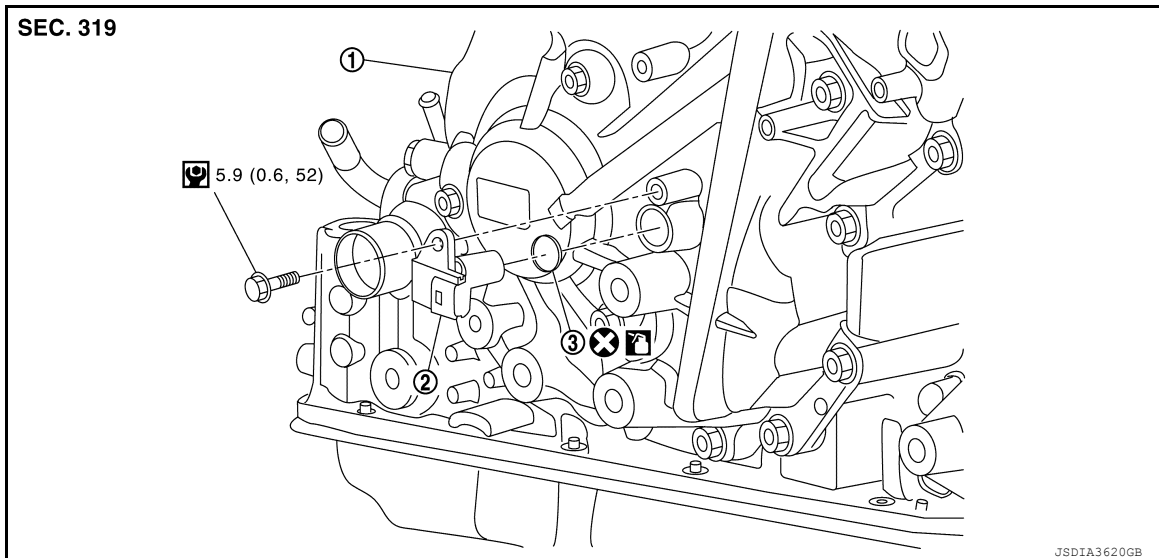
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

PRIMARY SPEED SENSOR

Exploded View

INFOID:0000000011220408



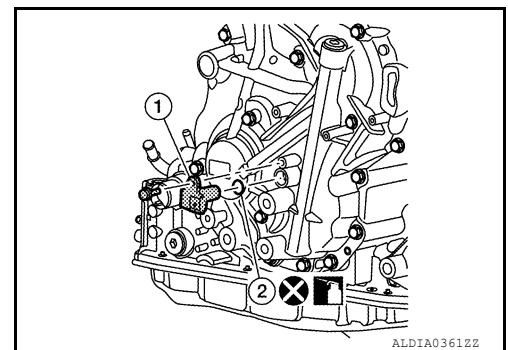
- ① Transaxle assembly ② Primary speed sensor ③ O-ring
- ⊗ : Always replace after every disassembly.
- ⌘ : N·m (kg-m, in-lb)
- 🔧 : Apply CVT fluid

Removal and Installation

INFOID:0000000011220409

REMOVAL

1. Disconnect the negative battery terminal. Refer to [PG-86, "Exploded View"](#).
 2. Remove the fender protector side cover (LH). Refer to [EXT-36, "FENDER PROTECTOR : Exploded View"](#).
 3. Disconnect the harness connector from primary speed sensor (1).
 4. Remove the primary speed sensor bolt, then the primary speed sensor (1).
 5. Remove the O-ring (2) from the primary 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 Genuine NISSAN CVT Fluid NS-3 or equivalent to the O-ring.

Inspection and Adjustment

INFOID:0000000011220410

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

PRIMARY SPEED SENSOR

< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to [TM-191, "Adjustment"](#).

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OUTPUT SPEED SENSOR

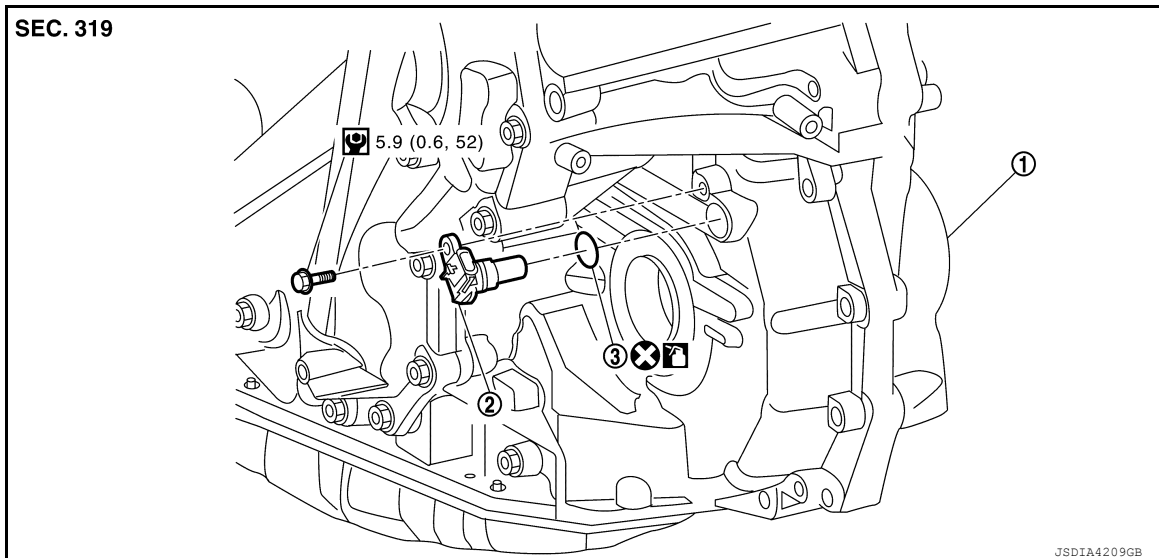
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

OUTPUT SPEED SENSOR

Exploded View

INFOID:0000000011220411



① Transaxle assembly

② Output speed sensor

③ O-ring

⊗ : Always replace after every disassembly.

⌘ : N·m (kg-m, in-lb)

🔧 : Apply CVT fluid

Removal and Installation

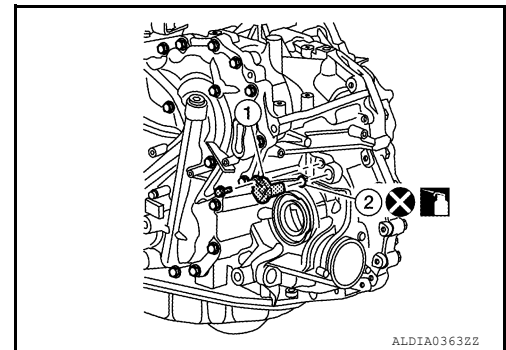
INFOID:0000000011220412

REMOVAL

1. Disconnect the battery negative terminal. Refer to [PG-86, "Exploded View"](#).
2. Disconnect the harness connector from output speed sensor (1).
3. Remove the output speed sensor bolt, then the output speed sensor (1).
4. Remove the O-ring (2) from the output 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 Genuine NISSAN CVT Fluid NS-3 or equivalent to the O-ring.

Inspection and Adjustment

INFOID:0000000011220413

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to [TM-191, "Adjustment"](#).

DIFFERENTIAL SIDE OIL SEAL

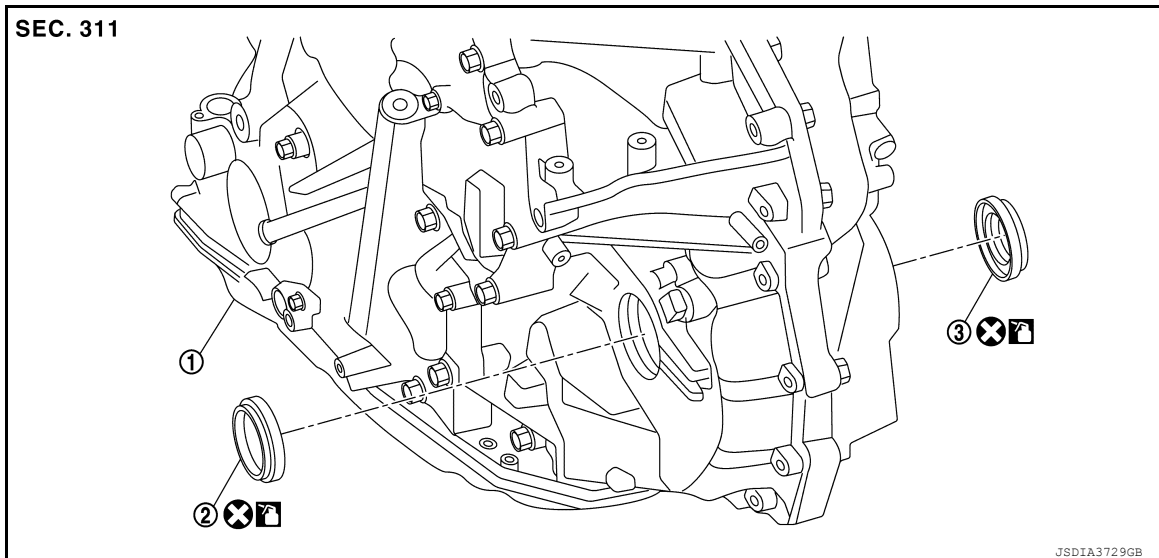
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

DIFFERENTIAL SIDE OIL SEAL

Exploded View

INFOID:0000000011220414



① Transaxle assembly

② Differential side oil seal (left side)

③ Differential side oil seal (right side)
(FWD models only)

⊗ : Always replace after every disassembly.

☑ : Apply CVT fluid

Removal and Installation

INFOID:0000000011220415

REMOVAL

1. Remove front drive shaft. Refer to [FAX-19, "Removal and Installation \(LH\)"](#) (LH) or [FAX-21, "Removal and Installation \(RH\)"](#) (RH).
2. Using suitable tool, remove the differential side oil seal.

CAUTION:

When removing the differential side oil seal, be careful not to scratch the oil seal mounting surfaces of the transaxle case and converter housing.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- Do not reuse differential side oil seal.
- Apply Genuine NISSAN CVT Fluid NS-3 or equivalent to differential side oil seals.
- When inserting the drive shaft, be sure to use Tool.

Tool number : KV38107900 (—)

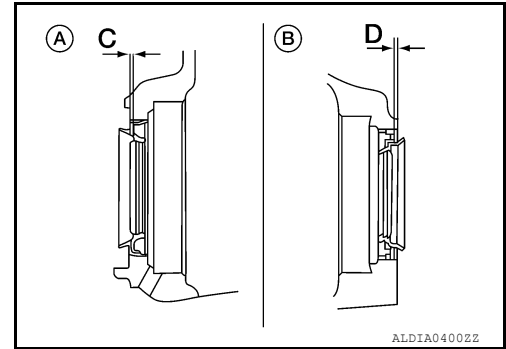
DIFFERENTIAL SIDE OIL SEAL

< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

Install each differential side oil seal evenly using Tool so that differential side oil seal protrudes by the dimension (C) and (D) respectively.

- (A) : Differential side oil seal (LH)
(B) : Differential side oil seal (RH)(2WD models only)



Dimension (C) : Height difference from case end surface is within 0 ± 0.5 mm (0.00 ± 0.020 in).

Dimension (D) : Height difference from case end surface is within 0 ± 0.5 mm (0.00 ± 0.020 in).

NOTE:

The reference is the installation direction of the differential side oil seal.

Drift to be used:

Location	Commercial Service Tools
Transaxle case side	Commercial service tool with outer dia. 56 mm (2.20 in) and inner dia. 50 mm (1.97 in)
Converter housing side	

Inspection and Adjustment

INFOID:0000000011220416

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to [TM-191, "Adjustment"](#).

WATER HOSE

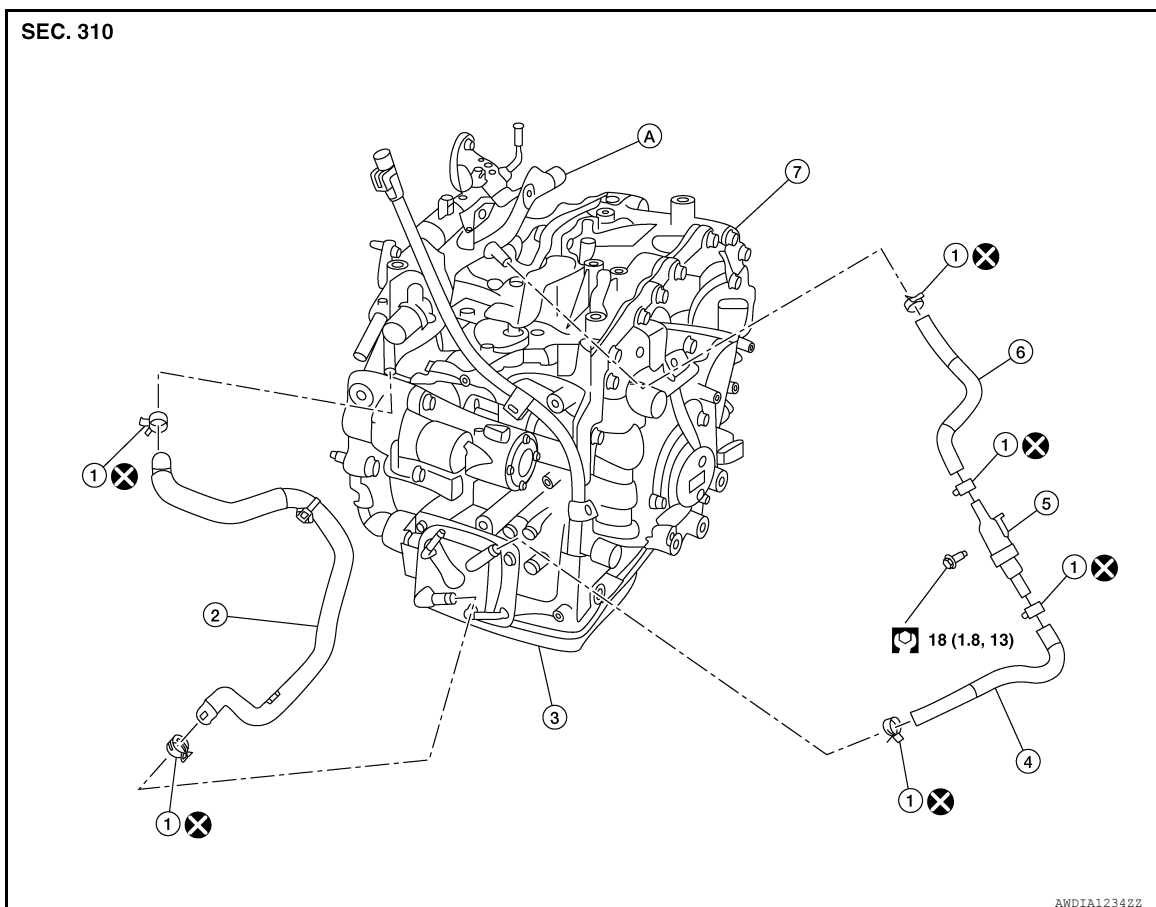
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

WATER HOSE

Exploded View

INFOID:0000000011220417



- | | | |
|----------------------|---------------------|----------------------|
| ① Hose clamp | ② CVT water hose A | ③ Transaxle assembly |
| ④ CVT water hose B | ⑤ Heater thermostat | ⑥ CVT water hose C |
| ⑦ Transaxle assembly | | |
| A Water outlet | | |

⊗ : Always replace after every disassembly.

Ⓐ : N·m (kg-m, ft-lb)

Removal and Installation

INFOID:0000000011220418

REMOVAL

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

CAUTION:

Perform this step when engine is cold.

1. Drain engine coolant from radiator. Refer to [CO-9, "Changing Engine Coolant"](#).
2. Remove front air duct. Refer to [EM-26, "Exploded View"](#).
3. Remove hose clamps, and remove CVT water hose A.

WATER HOSE

< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

4. Remove hose clamps, and remove CVT water hose B.

5. Remove hose clamps, and remove CVT water hose C.

INSTALLATION

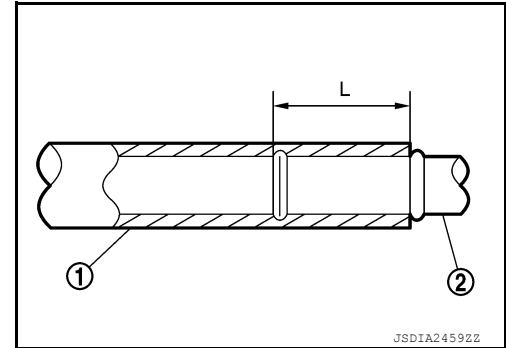
Installation is in the reverse order of removal.

CAUTION:

- Do not reuse hose clamp.
- Hose clamp should not interfere with the spool or bulge.

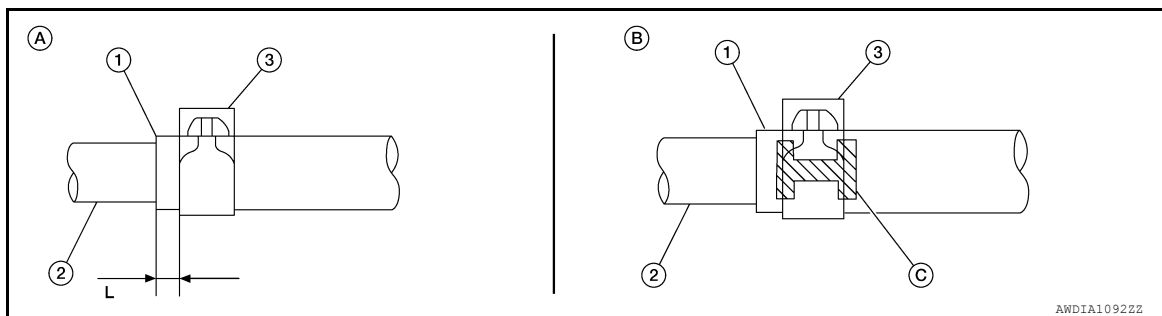
*Refer to the following when installing CVT water hose.

Water hose (1)	Installation side tube (2)	Direction of paint mark	Hose insertion depth
CVT water hose A	Water outlet	Upward	End reaches the 2-stage bulge.
	CVT oil warmer	Frontward	
CVT water hose B	CVT oil warmer	Frontward	
	Heater thermostat	Align with the mark on the heater thermostat side	End reaches the expansion part.
CVT water hose C	Heater thermostat	Align with the mark on the heater thermostat side	
	Water outlet	Upward	



*Refer to the following when installing hose clamps.

CVT Water hose (1)	Installation side tube (2)	Hose clamp (3)	
		Direction of tab*	Clamping position*
CVT Water hose A	Water outlet	B	A: 5-7 mm (0.20 - 0.28 in) (L) from hose end.
	CVT oil warmer	D	
CVT Water hose B	CVT oil warmer	D	B: Align with the paint mark (C) as shown.
	Heater thermostat	A	
CVT Water hose C	Heater thermostat	A	
	Water outlet	C	



WATER HOSE

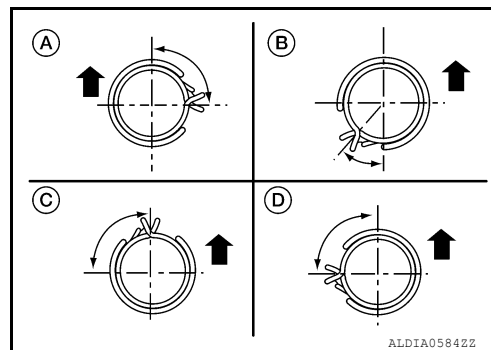
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

- The illustrations indicate the view from the hose ends.
- When installing hose clamps, the center line of each clamp tab should be positioned as shown.

A, D Points to front of vehicle

B, C Points to top of vehicle



INFOID:0000000011220419

Inspection

INSPECTION AFTER INSTALLATION

Start and warm up the engine. Visually check that there is no leakage of engine coolant and CVT fluid.

FLUID COOLER HOSE

< REMOVAL AND INSTALLATION >

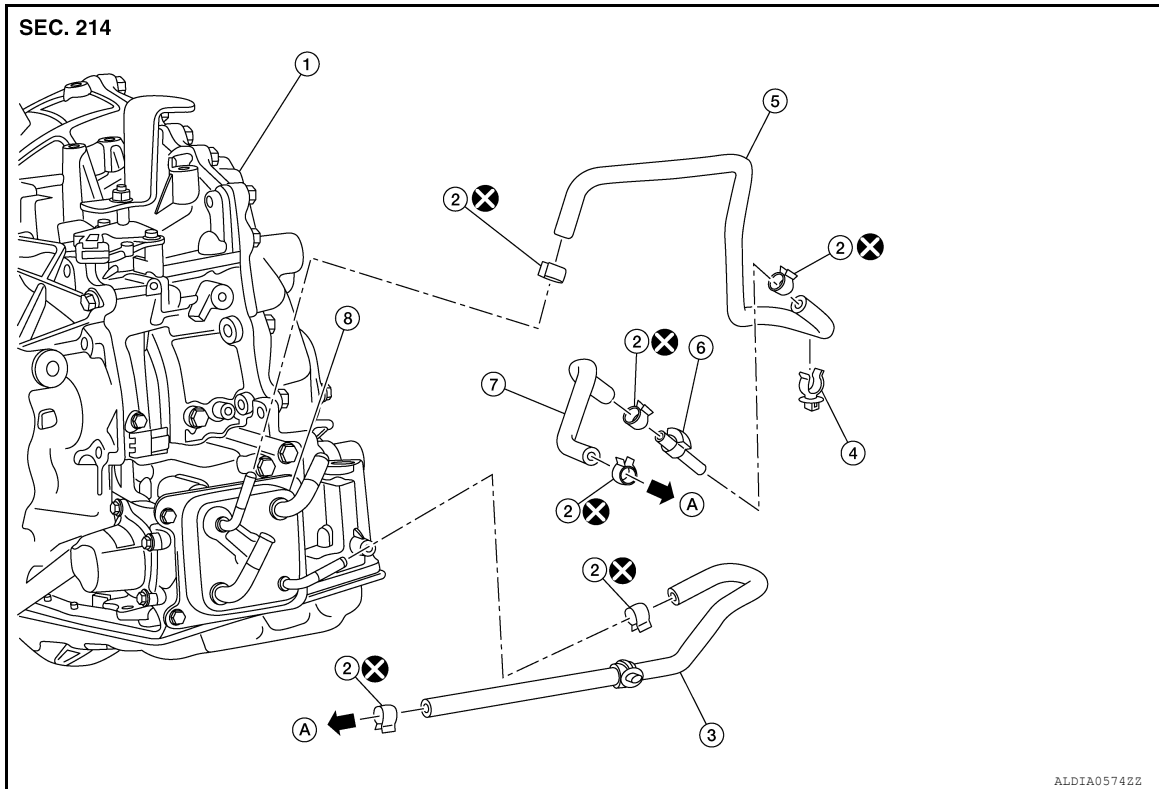
[CVT: RE0F10J]

FLUID COOLER HOSE

Exploded View

INFOID:0000000011220420

COMPONENT PARTS LOCATION



- | | | |
|---|---------------------------|---------------------------|
| ① Transaxle assembly | ② Hose clamp | ③ CVT fluid cooler hose A |
| ④ Hose clip | ⑤ CVT fluid cooler hose B | ⑥ Connector tube |
| ⑦ CVT fluid cooler hose C | ⑧ Oil warmer | |
| Ⓐ To radiator | | |
| ⊗ : Always replace after every disassembly. | | |

Removal and Installation

INFOID:0000000011220421

REMOVAL

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

CVT fluid cooler hoses

1. Drain engine coolant from radiator. Refer to [CO-9, "Changing Engine Coolant"](#).
2. Remove front air duct. Refer to [EM-26, "Exploded View"](#).
3. Remove hose clamps and remove CVT fluid cooler hose A.
4. Remove hose clamps and remove CVT fluid cooler hose B and CVT fluid cooler hose C.
5. Remove hose clamps and remove CVT fluid cooler hose B from CVT fluid cooler hose C (if necessary).
6. Remove CVT fluid cooler tube A and CVT fluid cooler tube B.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- Do not reuse hose clamps.

FLUID COOLER HOSE

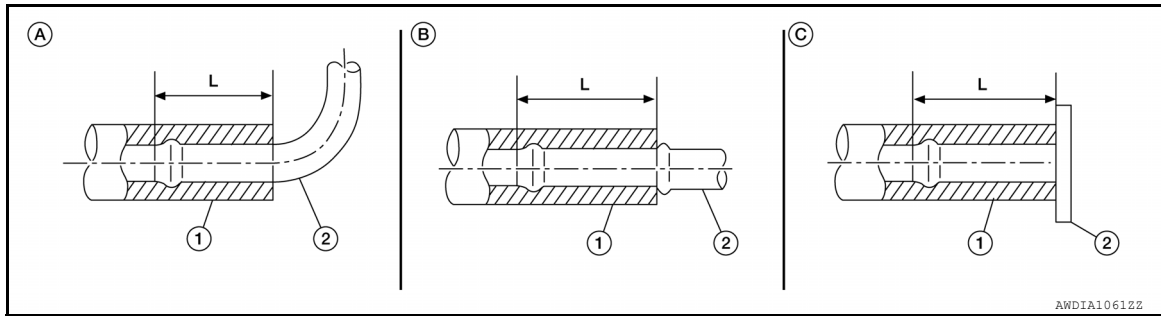
< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

- Hose clamps should not interfere with the spool or bulge.

*Refer to the following when installing CVT fluid cooler hoses

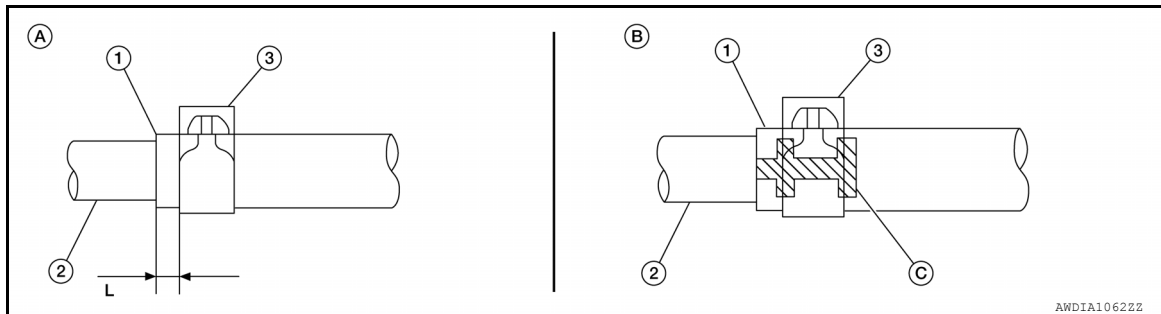
Hose name (1)	Installation side tube (2)	Direction of paint mark	Hose insertion depth (L)
CVT fluid cooler hose A	CVT oil warmer	Downward	B: End reaches the 2-step bulge.
	Radiator	Downward	A: End reaches the radius curve end.
CVT fluid cooler hose B	Connector tube	Upward	B: End reaches the spool
	CVT oil warmer	Frontward	A: End reaches the radius curve end.
CVT fluid cooler hose C	Radiator	Upward	C: Insert the hose until hose touches the radiator.
	Connector tube	Upward	B: End reaches the spool



*Refer to the following when installing CVT fluid cooler hoses

Hose name (1)	Installation side tube (2)	Hose clamp (3)	
		Direction of tab	Clamping position
CVT fluid cooler hose A	CVT oil warmer	B	B: Align with the paint mark (C) as shown in the figure.
	Radiator	B	A: 3 - 7 mm (0.12 - 0.28 in) (L) from hose end
CVT fluid cooler hose B	Connector tube	A	B: Align with the paint mark (C) as shown in the figure.
	CVT oil warmer	C	
CVT fluid cooler hose C	Radiator	A	A: 3 - 7 mm (0.12 - 0.28 in) (L) from hose end
	Connector tube	A	

*: Refer to the illustrations for the specific position of each hose clamp tab.



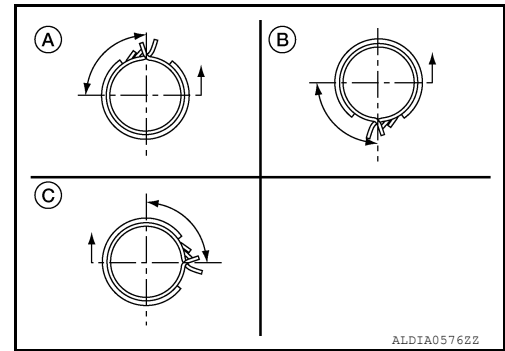
FLUID COOLER HOSE

< REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

- The illustrations indicate the view from the hose ends.
- When installing hose clamps the center line of each clamp tab should be positioned as shown.

A, B Points to top of vehicle
C Points to front of vehicle



INFOID:000000011220422

Inspection

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

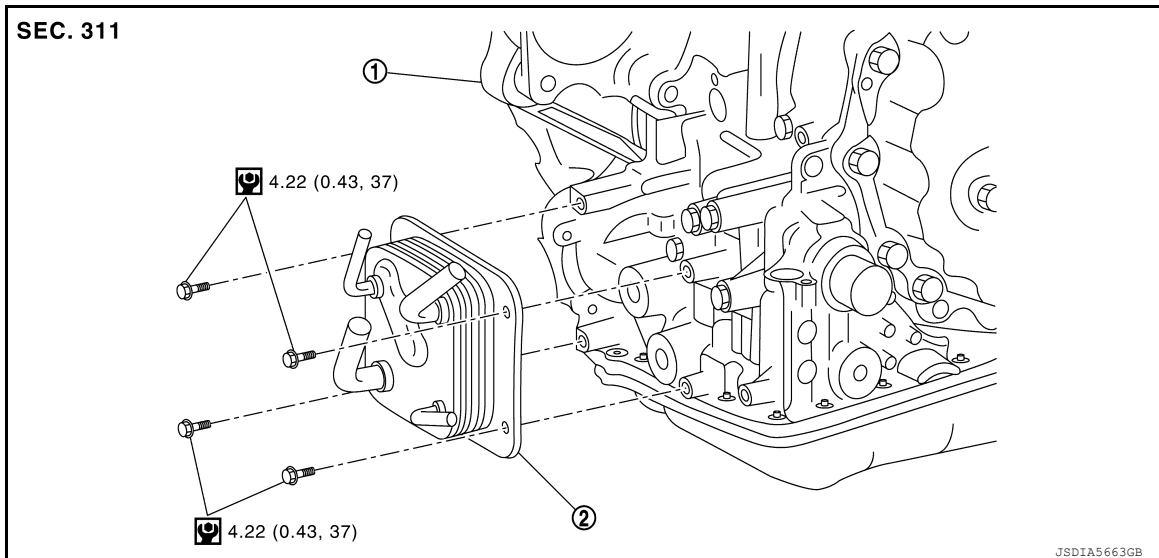
ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to [TM-191, "Adjustment"](#).

CVT OIL WARMER

Exploded View

INFOID:0000000011220423



- ① Transaxle assembly ② CVT oil warmer

⊗ : Always replace after every disassembly.

⊙ : N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000011220424

REMOVAL

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

CAUTION:

Perform this step when engine is cold.

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Drain engine coolant from radiator. Refer to [CO-9, "Changing Engine Coolant"](#).
2. Remove CVT water hoses from CVT oil warmer. Refer to [TM-211, "Exploded View"](#).
3. Remove CVT fluid cooler hoses from CVT oil warmer. Refer to [TM-214, "Exploded View"](#).
4. Remove CVT oil warmer.
5. Remove bracket.

INSTALLATION

Installation is in the reverse order of removal.

Inspection

INFOID:0000000011220425

INSPECTION AFTER INSTALLATION

- Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).
- Start and warm up the engine. Visually check that there is no leakage of engine coolant and CVT fluid.

ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to [TM-191, "Adjustment"](#).

PLUG

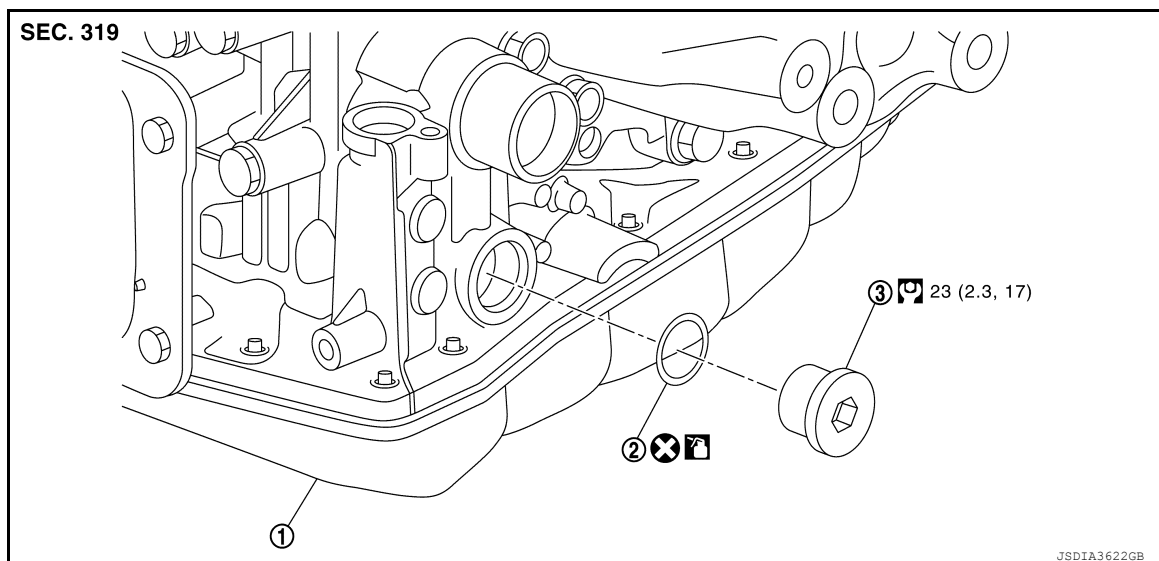
Description

INFOID:0000000011220426

Replace the O-ring if oil leaks from the plug.

Exploded View

INFOID:0000000011220427



① Transaxle assembly

② O-ring

③ Plug

⊗ : Always replace after every disassembly.

⊙ : N·m (kg-m, ft-lb)

⌚ : Apply CVT fluid

Removal and Installation

INFOID:0000000011220428

NOTE:

Replace the O-rings if oil leaks from the plugs.

REMOVAL

Remove the plugs and O-rings.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- Do not reuse O-ring.
- Apply Genuine NISSAN CVT Fluid NS-3 or equivalent to O-ring.

Inspection and Adjustment

INFOID:0000000011220429

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to [TM-191, "Adjustment"](#).

TRANSMISSION ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

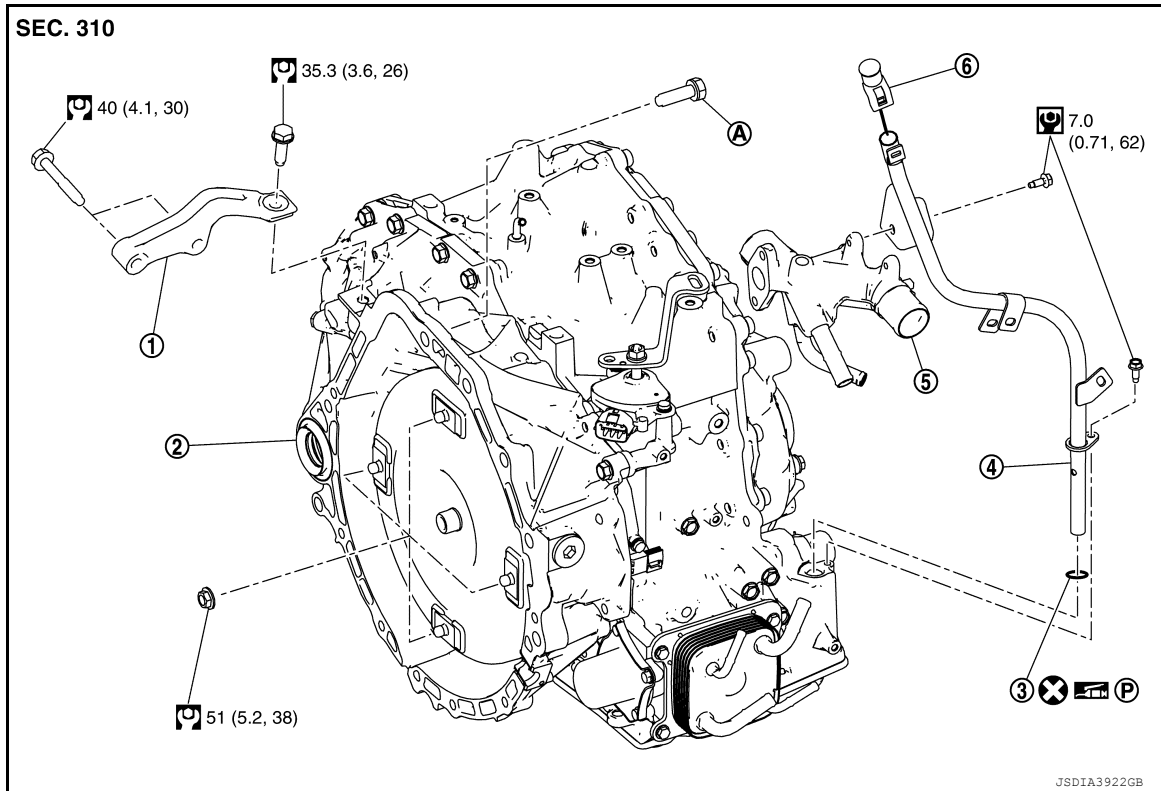
UNIT REMOVAL AND INSTALLATION

TRANSMISSION ASSEMBLY

Exploded View

INFOID:0000000011220430

FWD Models



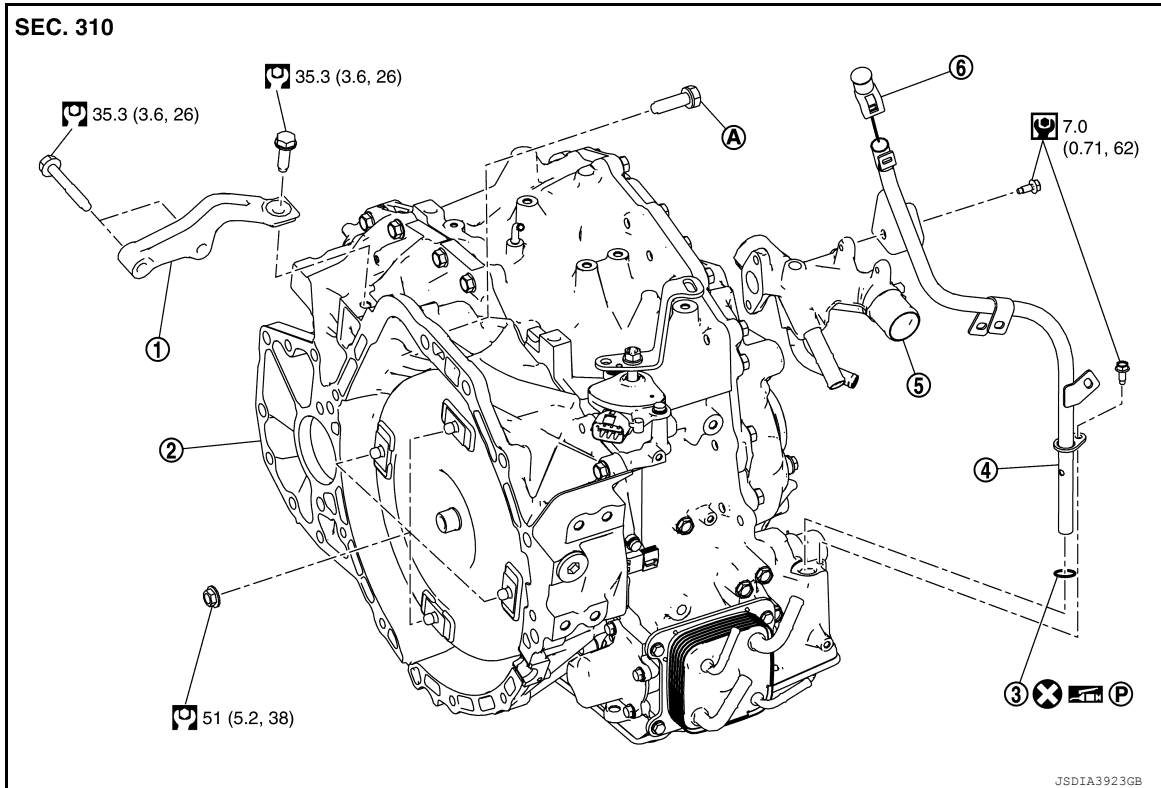
- | | | |
|--|----------------------|-------------------------------|
| ① Gusset | ② Transaxle assembly | ③ O-ring |
| ④ CVT fluid charging pipe | ⑤ Water outlet | ⑥ CVT fluid charging pipe cap |
| Ⓐ : For the tightening torque, refer to TM-220, "Removal and Installation" . | | |
| ⊗ : Always replace after every disassembly. | | |
| Ⓜ : N·m (kg-m, ft-lb) | | |
| Ⓜ : N·m (kg-m, in-lb) | | |
| Ⓜ : Apply petroleum jelly | | |

TRANSMISSION ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

AWD Models



- | | | |
|---------------------------|----------------------|-------------------------------|
| ① Gusset | ② Transaxle assembly | ③ O-ring |
| ④ CVT fluid charging pipe | ⑤ Water outlet | ⑥ CVT fluid charging pipe cap |

A : For the tightening torque, refer to [TM-220, "Removal and Installation"](#).

X : Always replace after every disassembly.

: N·m (kg-m, ft-lb)

: N·m (kg-m, in-lb)

: Apply petroleum jelly

Removal and Installation

INFOID:0000000011220431

REMOVAL

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

CAUTION:

- Perform when the engine is cold.
- When replacing the transaxle, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY". Refer to [TM-80, "Work Procedure"](#).
- When replacing TCM and transaxle assembly simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY" before work. Refer to [TM-82, "Work Procedure"](#).

NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove the engine and transaxle with the front suspension member as a unit. Refer to [EM-104, "FWD : Removal and Installation"](#)(FWD) or [EM-109, "AWD : Removal and Installation"](#) (AWD).
2. Disconnect the harness connectors from the transaxle.

TRANSMISSION ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

3. Disconnect the CVT oil warmer water hoses from engine side. Refer to [TM-211, "Removal and Installation"](#).
4. Remove the CVT fluid charging pipe.
5. Remove the transaxle to engine and engine to transaxle bolts.
6. Separate the engine from the transaxle and remove the engine from the front suspension member. Refer to [EM-104, "FWD : Removal and Installation"](#) (FWD) or [EM-109, "AWD : Removal and Installation"](#) (AWD).

NOTE:

Using paint, put matching marks on the drive plate and torque converter when removing the torque converter to drive plate nuts.

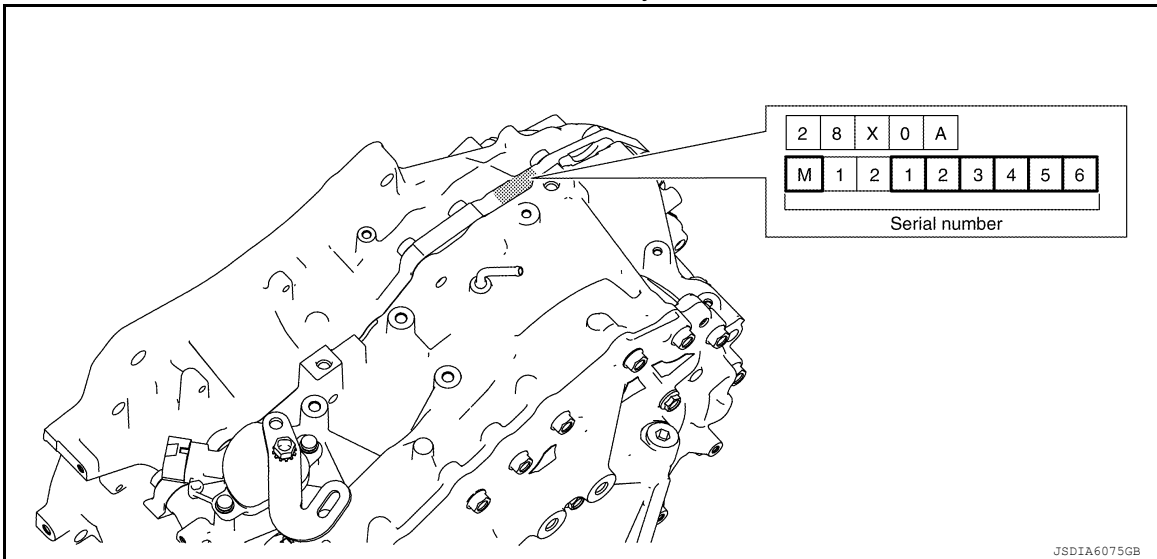
7. Remove transmission bracket.
8. Lift the transaxle from the front suspension member.

INSTALLATION

Installation is in the reverse order of removal.

NOTE:

Write down the serial number of the new transaxle assembly.



CAUTION:

- When replacing an engine or transaxle you must make sure any dowels are installed correctly during re-assembly
- Improper alignment caused by missing dowels may cause vibration, oil leaks or breaking of drive train components.
- Do not reuse O-rings or copper sealing washers.
- When turning crankshaft, turn it clockwise as viewed from the front of the engine.
- When tightening the nuts for the torque converter while securing the crankshaft pulley bolt, be sure to confirm the tightening torque of the crankshaft pulley bolt. Refer to [EM-65, "Exploded View"](#).
- After converter is installed to drive plate, rotate crankshaft several turns to check that CVT rotates freely without binding.
- When installing the CVT to the engine, align the matching mark on the drive plate with the matching mark on the torque converter.

TRANSMISSION ASSEMBLY

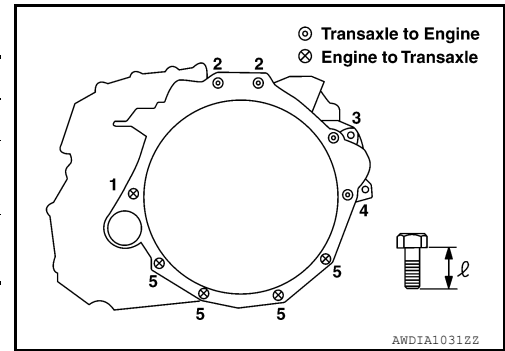
< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F10J]

When installing CVT assembly to the engine assembly, attach the bolts in accordance with the following standard.

Bolt No.	1	2	3	4	5
Number of bolts	1	2	1	1	4
Bolt length "ℓ" mm (in)	55 (2.17)	39 (1.54)	35 (1.38)	50 (1.97)	45 (1.77)
Tightening torque N·m (kg-m, ft-lb)	74.5 (7.6, 55)				50.0 (5.1, 37)

- When installing the drive plate to torque converter nuts, tighten them temporarily, then tighten the nuts to the specified torque.



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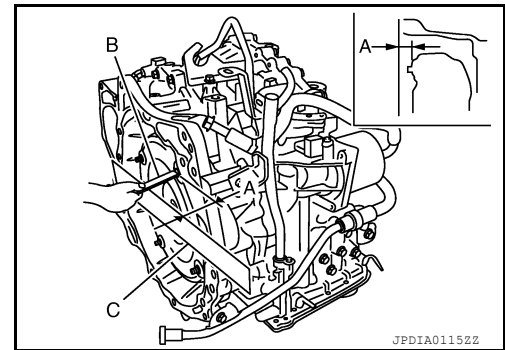
Inspection and Adjustment

INSPECTION BEFORE INSTALLATION

After inserting a torque converter to the CVT, check dimension (A) with in the reference value limit.

- B : Scale
- C : Straightedge

Dimension (A) : Refer to [TM-226, "Torque Converter"](#).



INSPECTION AFTER INSTALLATION

Check the following items:

- CVT fluid leakage, refer to [TM-189, "Inspection"](#).
- For CVT position, refer to [TM-88, "Inspection and Adjustment"](#).
- Start the engine and check for coolant leakage from the parts which are removed and reinstalled.

ADJUSTMENT AFTER INSTALLATION

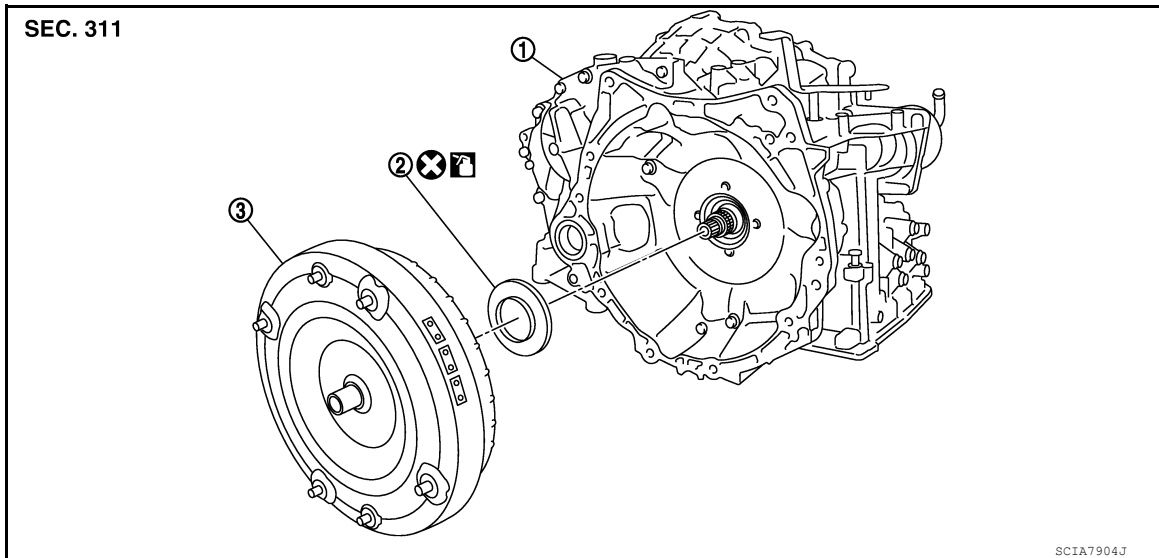
- Adjust the CVT fluid level. Refer to [TM-191, "Adjustment"](#).
- Perform "ADDITIONAL SERVICE WHEN REPLACE TRANSAXLE ASSEMBLY". Refer to [TM-80, "Description"](#).

UNIT DISASSEMBLY AND ASSEMBLY

TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

Exploded View

INFOID:0000000011220433



- ① Transaxle assembly
- ② Converter housing oil seal
- ③ Torque converter
- ⊗ : Always replace after every disassembly.
- 🔧 : Apply CVT Fluid

Disassembly

INFOID:0000000011220434

1. Remove transaxle assembly. Refer to [TM-220. "Removal and Installation"](#).
2. Remove torque converter from transaxle assembly.
CAUTION:
Do not damage the bushing on the inside of torque converter sleeve when removing torque converter.
3. Remove converter housing oil seal using suitable tool.
CAUTION:
Be careful not to scratch converter housing.

Assembly

INFOID:0000000011220435

Assembly is in the reverse order of disassembly.

CAUTION:

Do not reuse converter housing oil seal.

NOTE:

Lubricate converter housing oil seal prior to installation.

TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

< UNIT DISASSEMBLY AND ASSEMBLY >

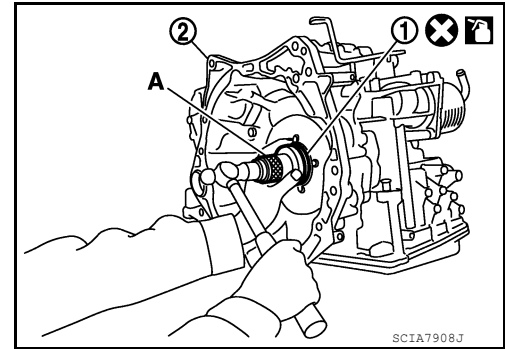
[CVT: RE0F10J]

- Drive converter housing oil seal (1) evenly using a drift (A) (commercial service tool) so that converter housing oil seal protrudes by the dimension (B) respectively.

Unit: mm (in)

Commercial service tool: (A)	Outer diameter: 65 (2.56)
	Inner diameter: 60 (2.36)

(2) : Transaxle assembly



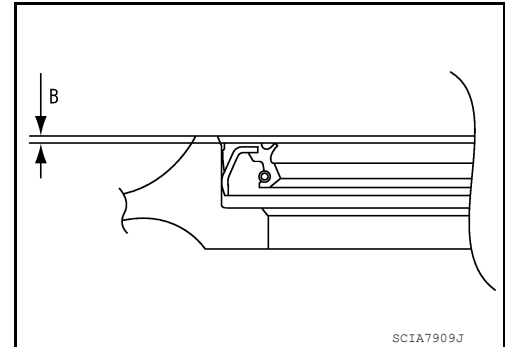
Unit: mm (in)

Dimension (B)	1.0 ± 0.5 (0.039 ± 0.020)
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NOTE:

Converter housing oil seal pulling direction is used as the reference.

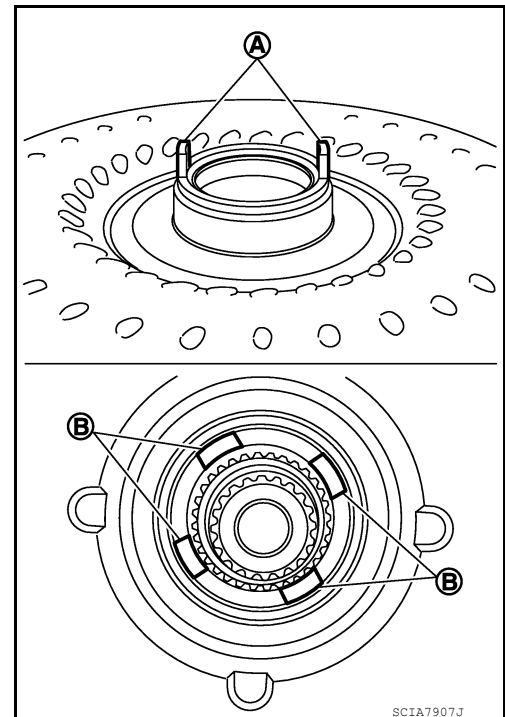
- After completing installation, check for CVT fluid leaks and CVT fluid level. Refer to [TM-224, "Inspection"](#).



- Attach the pawl (A) of the torque converter to the drive sprocket hole (B) on the transaxle assembly side.

CAUTION:

- Rotate the torque converter for installing torque converter.
- Do not damage the bushing inside the torque converter sleeve when installing the converter housing oil seal.



Inspection

INFOID:0000000011220436

INSPECTION AFTER INSTALLATION

TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

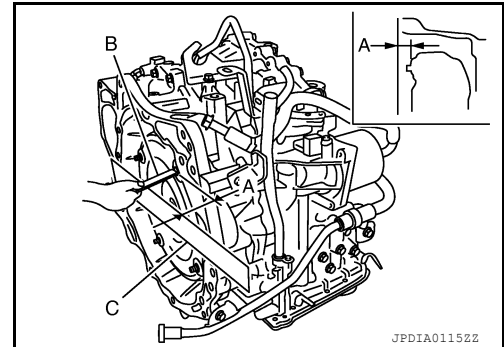
< UNIT DISASSEMBLY AND ASSEMBLY >

[CVT: RE0F10J]

- After inserting a torque converter to the CVT, check dimension (A) with in the reference value limit.

B : Scale
C : Straightedge

Dimension (A) : Refer to [TM-226, "Torque Converter"](#).



SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[CVT: RE0F10J]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specification

INFOID:0000000011669971

Engine model		VQ35DE	
Drive type		FWD	AWD
Transaxle model		RE0F10J	
Transaxle gear ratio	D position	2.413 – 0.383	
	R position	2.312	
	Final drive	5.250	
Recommended fluid		Refer to MA-11, "Fluids and Lubricants"	
Fluid capacity liter			

Shift Characteristics

INFOID:0000000011669972

Unit: rpm

Throttle position	Shift pattern	CVT input speed	
		At 40 km/h (25 MPH)	At 60 km/h (37 MPH)
2/8	"D" position (Normal)	1,570 – 1,730	1,710 – 1,890
8/8	"D" position (Normal)	3,050 – 3,450	4,270 – 4,590

NOTE:

Lock-up is engaged at the vehicle speed of approximately 18 km/h (12 MPH) to 40 km/h (24 MPH).

Stall Speed

INFOID:0000000011669973

Unit: rpm

Stall speed	2,400 – 2,700
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Torque Converter

INFOID:0000000011669974

Unit: mm (in)

Distance "A" between the converter housing and torque converter	14.0 (0.55)
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Heater Thermostat

INFOID:0000000011669975

Valve lift	More than 5.0 mm (0.197 in)
Valve opening temperature	Approx. 71°C (160°F)
Minimum valve lift	5.0 mm/Approx. 85°C (0.197 in/Approx. 203°F)