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# TM

## SECTION

# TRANSAXLE & TRANSMISSION

TM

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## PRECAUTION

### PRECAUTIONS

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

INFOID:000000012428024

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

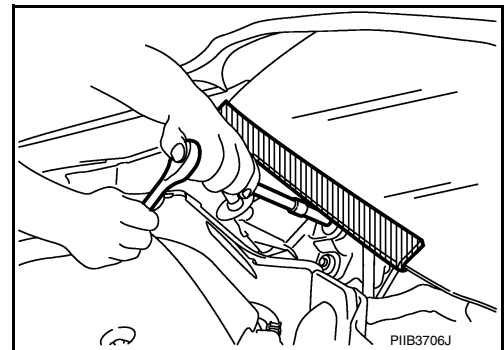
**WARNING:**

- 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:000000012428025

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:000000012428026

**CAUTION:**

- To replace TCM, refer to [TM-81, "Description"](#).
- To replace transaxle assembly, refer to [TM-83, "Description"](#).

# PRECAUTIONS

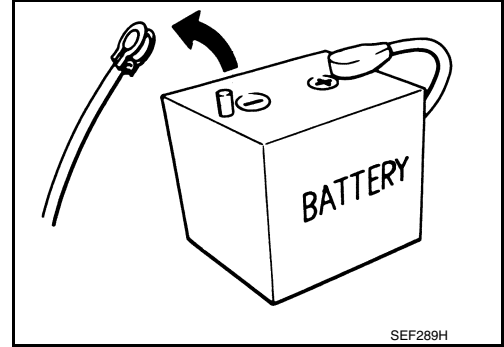
< PRECAUTION >

[CVT: RE0F10D]

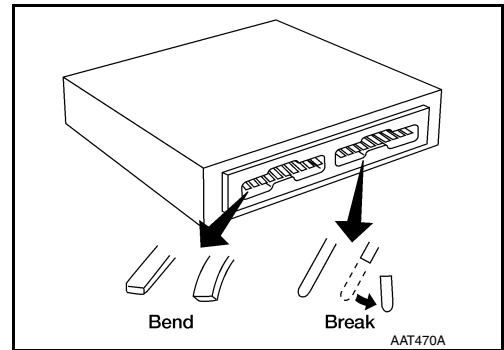
## General Precautions

INFOID:000000012428027

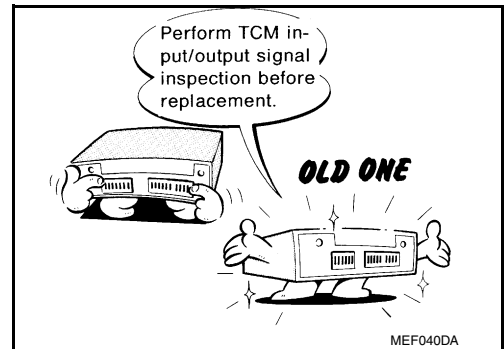
- Turn ignition switch OFF and disconnect the battery cable from the negative terminal before connecting or disconnecting the CVT assembly harness connector. Because battery voltage is applied to TCM even if ignition switch is turned OFF.



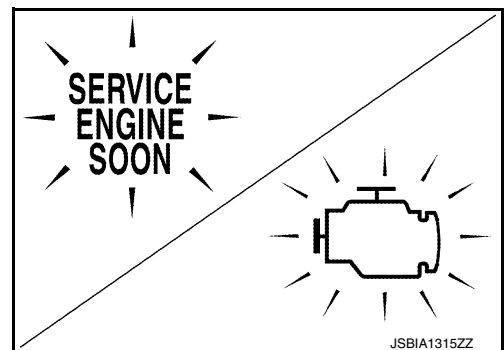
- When connecting or disconnecting pin connectors into or from TCM, do not damage pin terminals (bend or break). Check that there are not any bends or breaks on TCM pin terminal, when connecting pin connectors.



- Perform TCM input/output signal inspection and check whether TCM functions normally or not before replacing TCM. Refer to [TM-52, "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:000000012428028

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.

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# PRECAUTIONS

< PRECAUTION >

[CVT: RE0F10D]

## CAUTION:

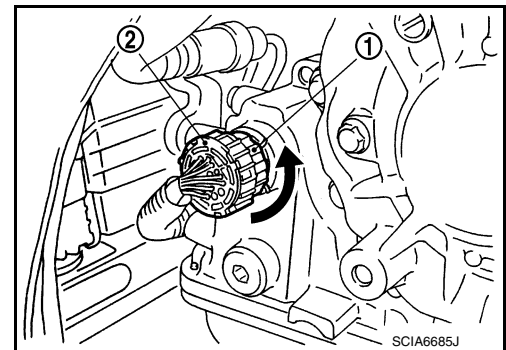
- Be sure to turn the ignition switch OFF and disconnect the battery cable from the negative terminal before any repair or inspection work. The open/short circuit of related switches, sensors, solenoid valves, etc. will cause the MIL to light up.
- Be sure to connect and lock the connectors securely 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:000000012428029

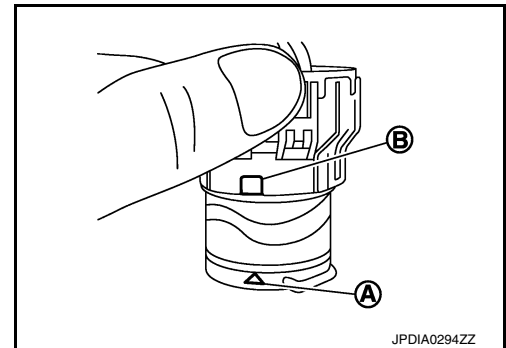
### REMOVAL

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

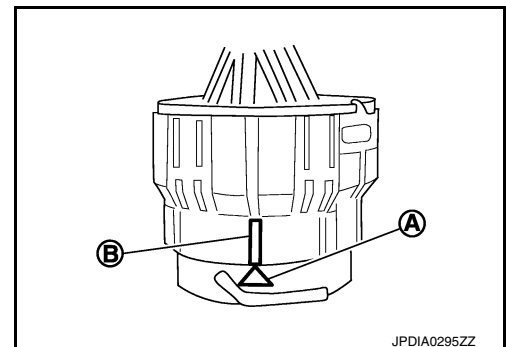


### INSTALLATION

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:

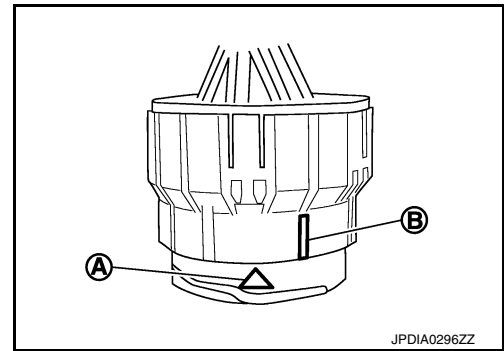


# PRECAUTIONS

< PRECAUTION >

[CVT: RE0F10D]

- 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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[CVT: RE0F10D]

## PREPARATION

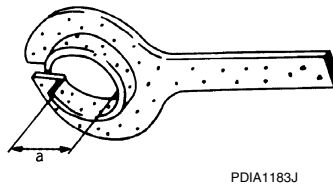
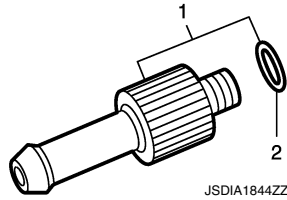
### PREPARATION

#### Special Service Tools

INFOID:000000012428030

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 a: 32 mm (1.26 in) dia.	Installing drive shaft

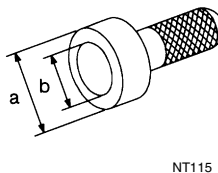
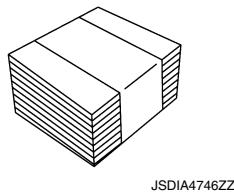
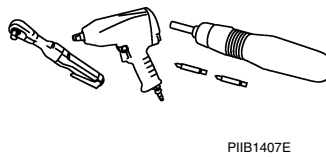


\*: The O-ring as a unit part is set as a SST.

#### Commercial Service Tools

INFOID:000000012428031

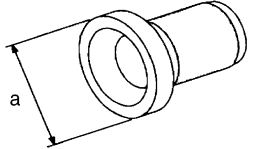
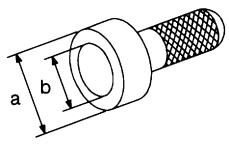
Tool number Tool name	Description
Power tool	Loosening nuts, screws and bolts
Lint-free paper	Cleaning transaxle
Drift a: 53 mm (2.09 in) dia. b: 50 mm (1.97 in) dia.	Installing differential side oil seal [transaxle case side, and converter housing side (2WD models)]



# PREPARATION

< PREPARATION >

[CVT: RE0F10D]

Tool number Tool name	Description	
Drift a: 60 mm (2.36 in) dia.	 <p style="text-align: center; font-size: small;">SCIA5338E</p>	A  B  C
Drift a: 65 mm (2.56 in) dia. b: 60 mm (2.36 in) dia.	 <p style="text-align: center; font-size: small;">NT115</p>	<div style="background-color: black; color: white; padding: 2px; font-weight: bold;">TM</div> E  F  G  H  I  J  K  L  M  N  O  P

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

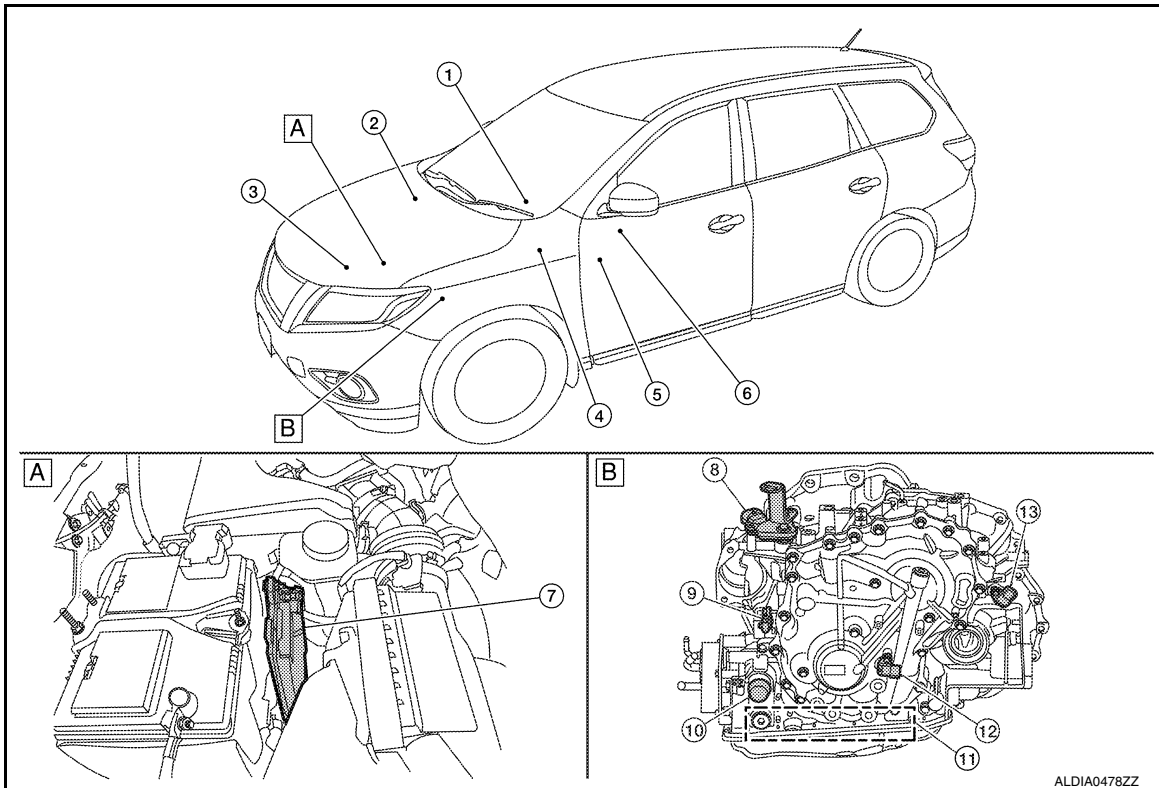
[CVT: RE0F10D]

## SYSTEM DESCRIPTION

### COMPONENT PARTS CVT CONTROL SYSTEM

#### CVT CONTROL SYSTEM : Component Parts Location

INFOID:000000012428032



**A** Engine room, LH

**B** Transaxle assembly

No.	Component	Function
①	Combination meter	<p>Mainly transmits the following signal to TCM via CAN communication.</p> <ul style="list-style-type: none"> <li>• Overdrive control switch signal</li> <li>• SPORT mode switch signal</li> </ul> <p>Mainly receives the following signals from TCM via CAN communication.</p> <ul style="list-style-type: none"> <li>• O/D OFF indicator lamp signal</li> <li>• Shift position signal</li> </ul> <p>Refer to <a href="#">MWI-6, "METER SYSTEM : Component Parts Location"</a> for detailed installation location.</p>
②	ABS actuator and electric unit (control unit)	<p>Mainly transmits the following signal to TCM via CAN communication.</p> <ul style="list-style-type: none"> <li>• ABS operation signal</li> <li>• TCS operation signal</li> <li>• VDC operation signal</li> <li>• ABS malfunction signal</li> <li>• Vehicle speed signal</li> <li>• G sensor signal</li> </ul> <p>Refer to <a href="#">BRC-9, "Component Parts Location"</a> for detailed installation location.</p>

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

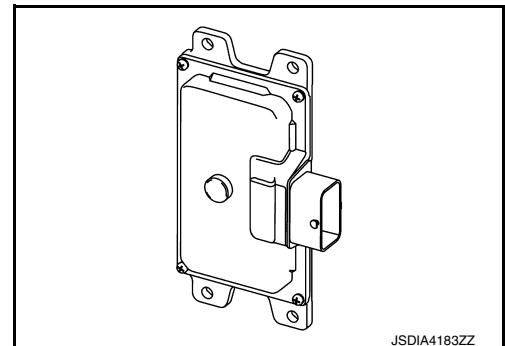
No.	Component	Function	
③	ECM	Mainly transmits the following signal to TCM via CAN communication. <ul style="list-style-type: none"> <li>• Engine and CVT integrated control signal</li> </ul> <b>NOTE:</b> General term for the communication (torque-down permission, torque-down request, etc.) exchanged between the ECM and TCM. <ul style="list-style-type: none"> <li>• Engine speed signal</li> <li>• Engine coolant temperature signal</li> <li>• Accelerator pedal position signal</li> <li>• Closed throttle position signal</li> </ul> Mainly receives the following signals from TCM via CAN communication. <ul style="list-style-type: none"> <li>• Malfunctioning indicator lamp signal</li> </ul> Refer to <a href="#">EC-14. "Component Parts Location"</a> for detailed installation location.	
④	BCM	Mainly transmits the following signal to TCM via CAN communication. <ul style="list-style-type: none"> <li>• Stop lamp switch signal</li> </ul> Refer to <a href="#">BCS-7. "BODY CONTROL SYSTEM : Component Parts Location"</a> for detailed installation location.	
⑤	SPORT mode switch	<a href="#">DMS-6. "SPORT Mode Switch"</a>	
	ECO mode switch	<a href="#">DMS-23. "ECO Mode Switch"</a>	
⑥	Overdrive control switch	<a href="#">TM-19. "CVT CONTROL SYSTEM : Overdrive Control Switch"</a>	
⑦	TCM	<a href="#">TM-13. "CVT CONTROL SYSTEM : TCM"</a>	
⑧	Transmission range switch	<a href="#">TM-14. "CVT CONTROL SYSTEM : Transmission Range Switch"</a>	
⑨	Input speed sensor	<a href="#">TM-15. "CVT CONTROL SYSTEM : Input Speed Sensor"</a>	
⑩	CVT unit connector	—	
⑪	Control valve	CVT fluid temperature sensor*	<a href="#">TM-16. "CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor"</a>
		Primary pressure sensor*	<a href="#">TM-16. "CVT CONTROL SYSTEM : Primary Pressure Sensor"</a>
		Secondary pressure sensor*	<a href="#">TM-17. "CVT CONTROL SYSTEM : Secondary Pressure Sensor"</a>
		Line pressure solenoid valve*	<a href="#">TM-18. "CVT CONTROL SYSTEM : Line Pressure Solenoid Valve"</a>
		Primary pressure solenoid valve*	<a href="#">TM-17. "CVT CONTROL SYSTEM : Primary Pressure Solenoid Valve"</a>
		Secondary pressure solenoid valve*	<a href="#">TM-18. "CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve"</a>
		Torque converter clutch solenoid valve*	<a href="#">TM-18. "CVT CONTROL SYSTEM : Torque Converter Clutch Solenoid Valve"</a>
		Select solenoid valve*	<a href="#">TM-18. "CVT CONTROL SYSTEM : Select Solenoid Valve"</a>
⑫	Primary speed sensor	<a href="#">TM-14. "CVT CONTROL SYSTEM : Primary Speed Sensor"</a>	
⑬	Output speed sensor	<a href="#">TM-15. "CVT CONTROL SYSTEM : Output Speed Sensor"</a>	

\*: These components are included in control valve assembly.

## CVT CONTROL SYSTEM : TCM

INFOID:000000012428033

- 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-31. "CVT CONTROL SYSTEM : System Description"](#).



# COMPONENT PARTS

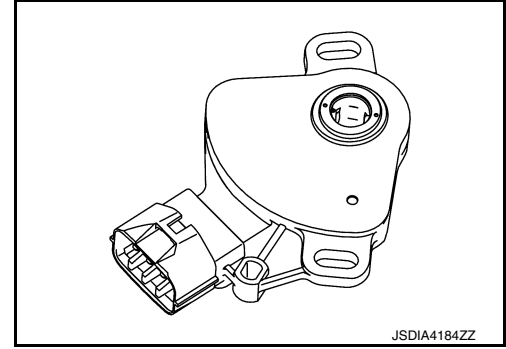
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[CVT: RE0F10D]

## CVT CONTROL SYSTEM : Transmission Range Switch

INFOID:000000012428034

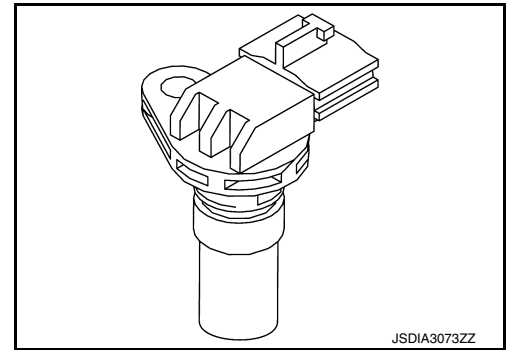
- The transmission range switch is installed to upper part of transaxle case.
- The transmission range switch detects the selector lever position.



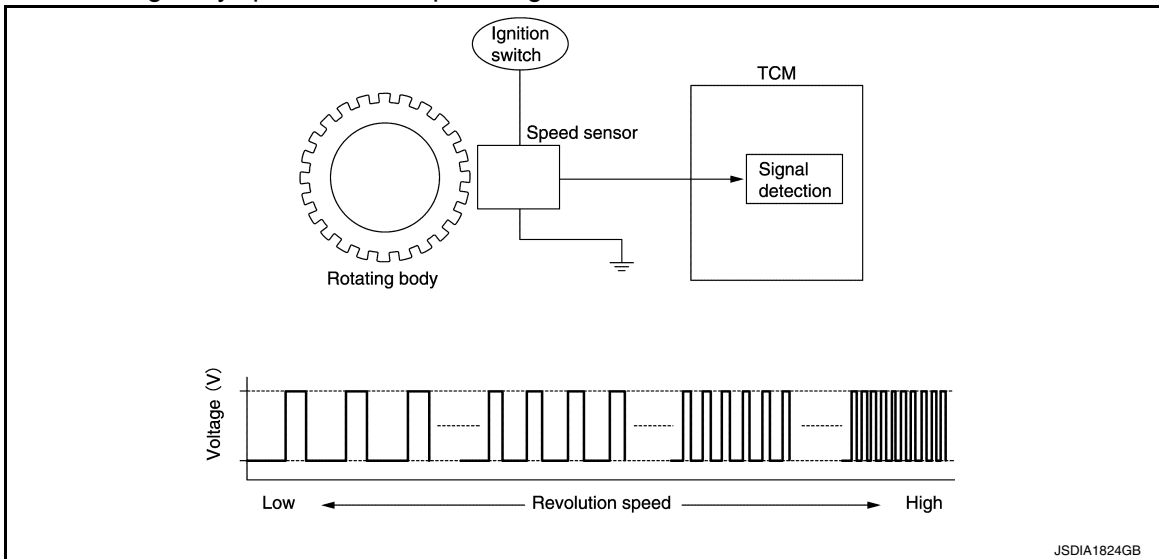
## CVT CONTROL SYSTEM : Primary Speed Sensor

INFOID:000000012428035

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

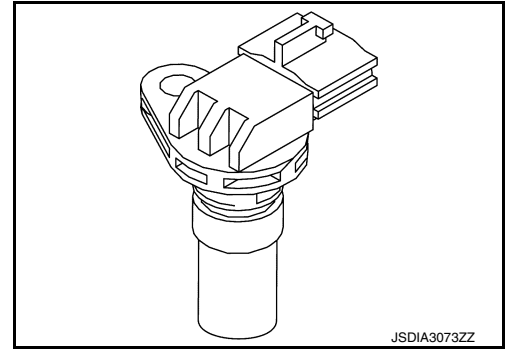
< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

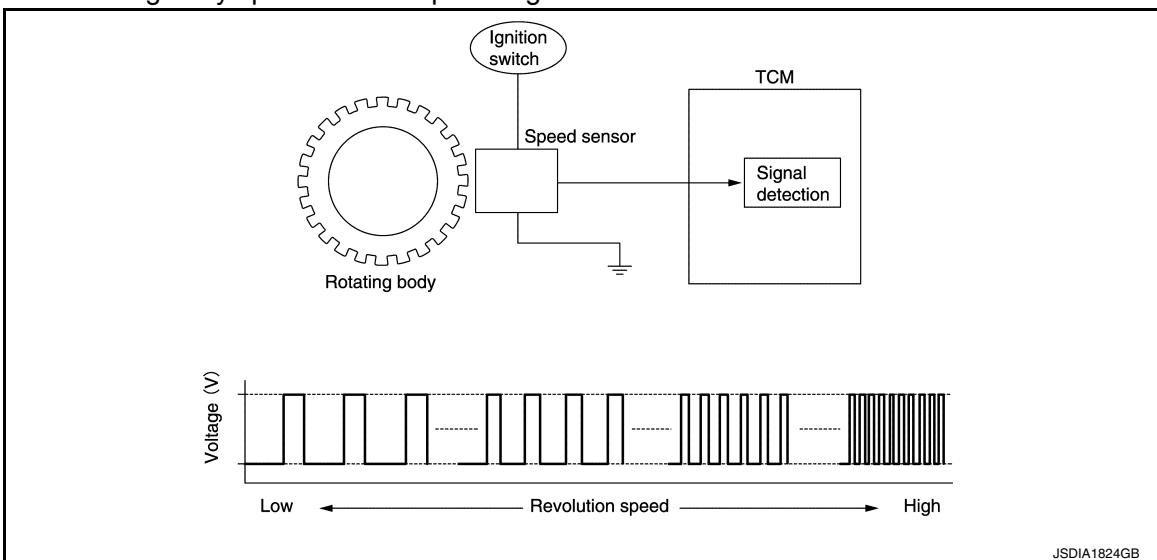
## CVT CONTROL SYSTEM : Output Speed Sensor

INFOID:000000012428036

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



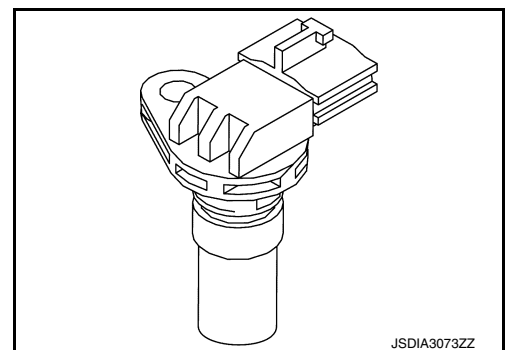
- The output speed sensor generates an ON-OFF pulse signal according to the rotating body speed. TCM judges the rotating body speed from the pulse signal.



## CVT CONTROL SYSTEM : Input Speed Sensor

INFOID:000000012428037

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

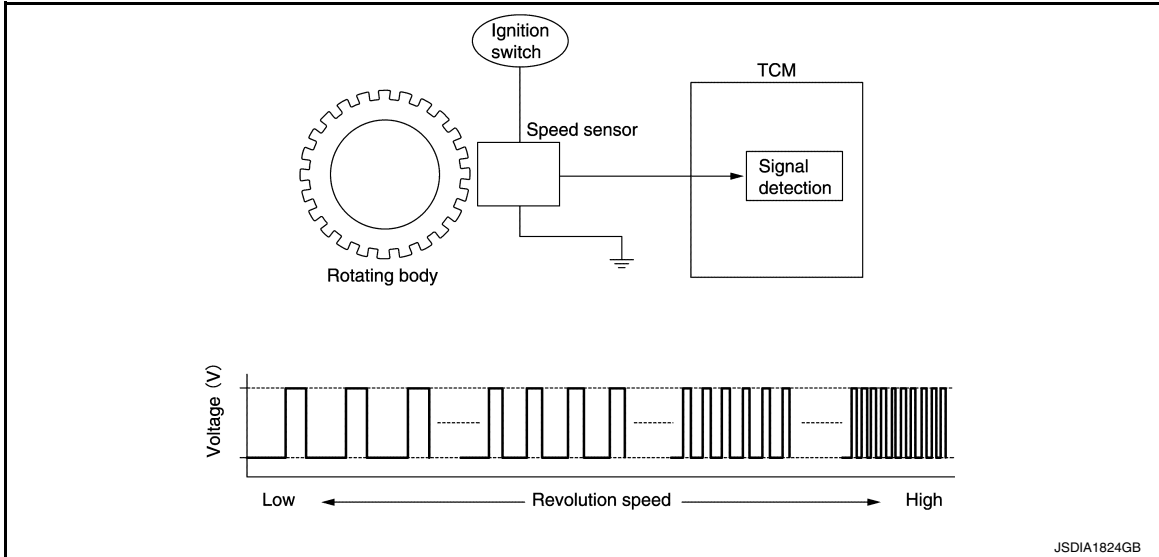


# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

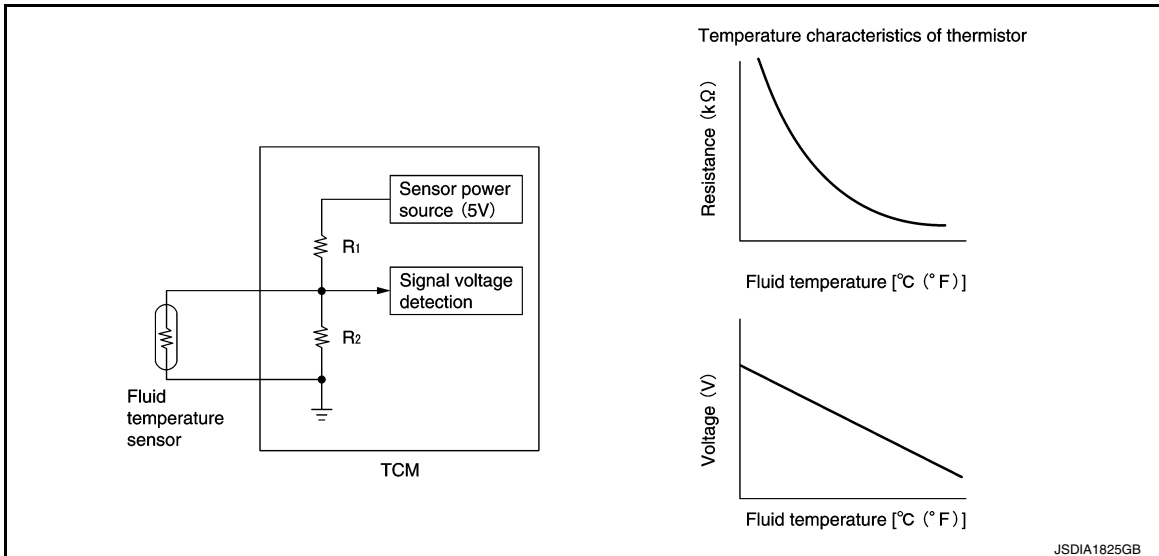
- The input speed sensor generates an ON-OFF pulse signal according to the rotating body speed. TCM judges the rotating body speed from the pulse signal.



## CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor

INFOID:000000012428038

- 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:000000012428039

- The primary pressure sensor is installed to control valve.
- The primary pressure sensor detects the pressure applied to the primary pulley.

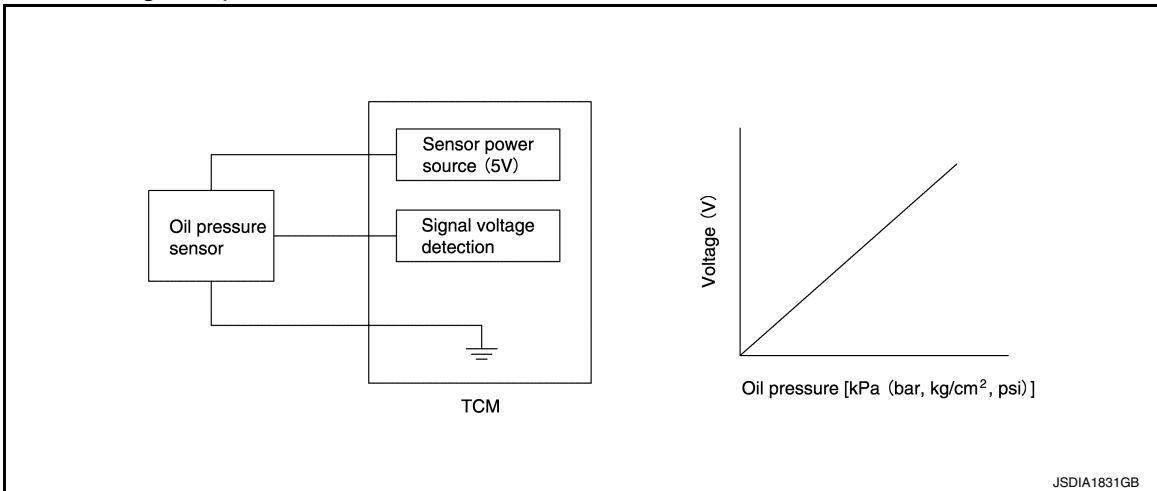


# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

[CVT: RE0F10D]

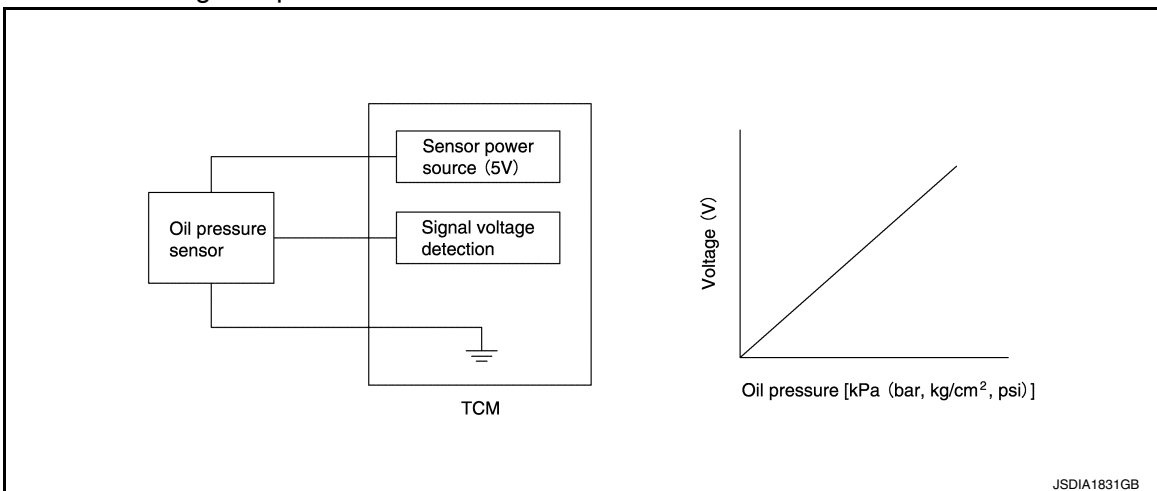
- When pressure is applied to the ceramic device in the primary pressure sensor, the ceramic device is deformed, resulting in voltage change. TCM evaluates the primary pressure from its voltage change. Voltage is increased along with pressure increase.



## CVT CONTROL SYSTEM : Secondary Pressure Sensor

INFOID:0000000012428040

- 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 metal diaphragm in the secondary pressure sensor, the metal diaphragm is deformed, resulting in voltage change. TCM evaluates the secondary pressure from its voltage change. Voltage is increased along with pressure increase.



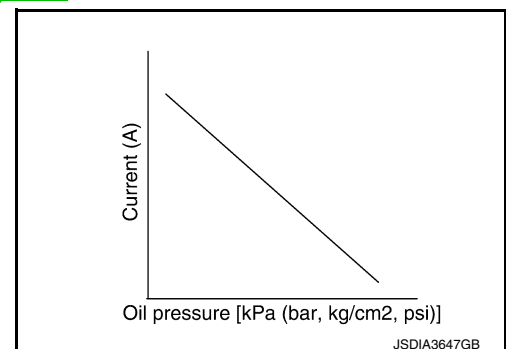
## CVT CONTROL SYSTEM : Primary Pressure Solenoid Valve

INFOID:0000000012428041

- 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-27, "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.



# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

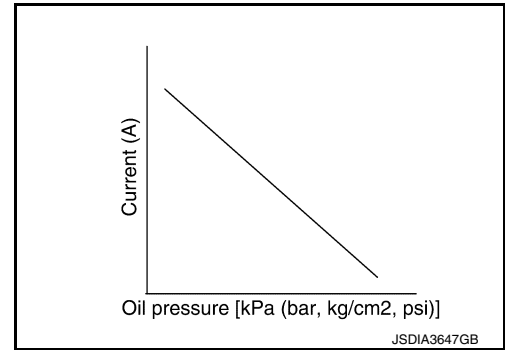
## CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve

INFOID:000000012428042

- 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-27, "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.



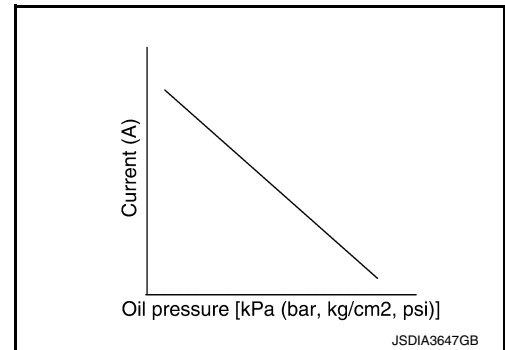
## CVT CONTROL SYSTEM : Select Solenoid Valve

INFOID:000000012428043

- The select solenoid valve is installed to control valve.
- The select solenoid valve adjusts the forward clutch engaging pressure and the reverse brake engaging pressure. For information about the forward clutch and reverse brake, refer to [TM-27, "TRANSAXLE : Component Description"](#).
- 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) type produces hydraulic control when the coil is not energized.



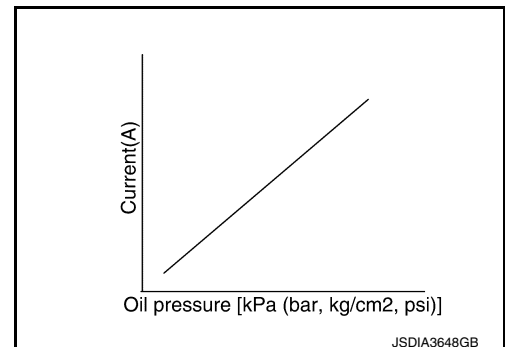
## CVT CONTROL SYSTEM : Torque Converter Clutch Solenoid Valve

INFOID:000000012428044

- 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-27, "TRANSAXLE : Component Description"](#).
- 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 : Line Pressure Solenoid Valve

INFOID:000000012428045

- 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-27, "TRANSAXLE : Component Description"](#).

# COMPONENT PARTS

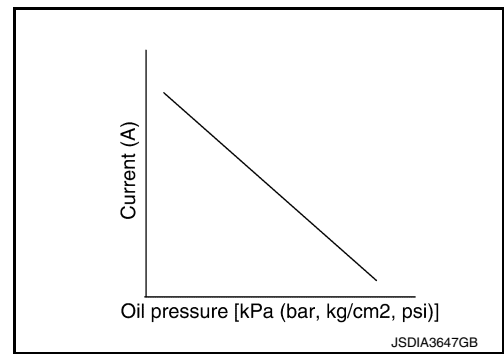
## < SYSTEM DESCRIPTION >

[CVT: RE0F10D]

- The line pressure solenoid valve uses the linear solenoid valve [N/H (normal high) type].

**NOTE:**

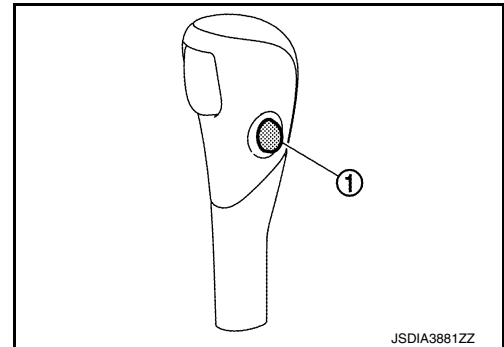
- The principle of the linear solenoid valve utilizes the fact that the force pressing on the valve spool installed inside the coil increases nearly in proportion to the current. This allows it to produce a fluid pressure that is proportional to this pressing force.
- The N/H (normal high) produces hydraulic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



## CVT CONTROL SYSTEM : Overdrive Control Switch

INFOID:000000012428046

- The overdrive control switch ① is installed to the shift selector knob.
- When the O/D OFF indicator lamp on the combination meter is OFF and the overdrive control switch is pressed, the O/D OFF is active and the O/D OFF indicator lamp is ON.
- When the O/D OFF indicator lamp on the combination meter is ON and the overdrive control switch is pressed, the O/D OFF is cancelled and the O/D OFF indicator lamp is OFF.

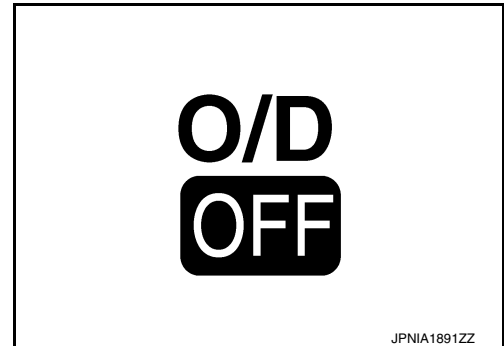


## CVT CONTROL SYSTEM : O/D OFF Indicator Lamp

INFOID:000000012428047

### DESIGN/PURPOSE

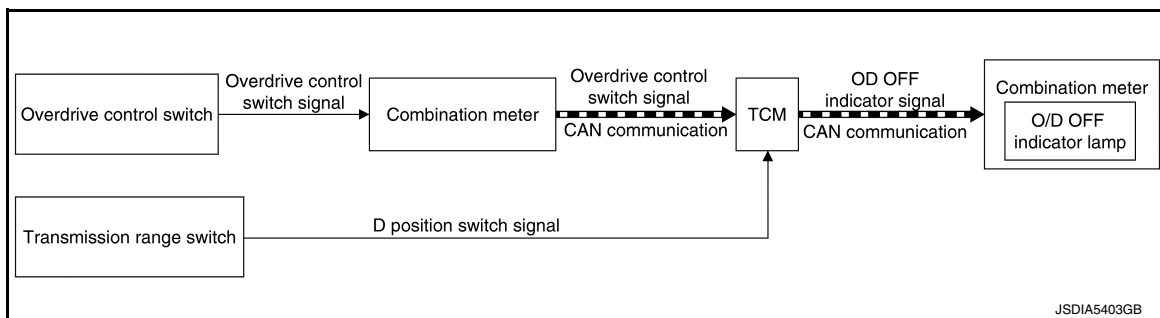
The O/D OFF indicator lamp notifies the driver that the shift control of transaxle is in O/D OFF.



### BULB CHECK

For two seconds after the ignition switch is turned ON.

### SYSTEM DIAGRAM



### SIGNAL PATH

- When overdrive control switch signal is input to the combination meter, the combination meter transmits the overdrive control switch signal to the TCM via CAN communication.

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O  
P

# COMPONENT PARTS

## < SYSTEM DESCRIPTION >

[CVT: RE0F10D]

- When all of the following conditions are satisfied, the TCM transmits OD OFF indicator lamp signal to the combination meter via CAN communication. The combination meter turns ON the O/D OFF indicator lamp on the combination meter, according to the signal.
- TCM receives overdrive control switch via CAN communication from combination meter.
- Selector lever: D position.

### LIGHTING CONDITION

When all of the following conditions are satisfied.

- Ignition switch: ON
- Selector lever: D position
- Overdrive control switch is pressed when the O/D OFF indicator lamp is OFF.

### SHUTOFF CONDITION

When any of the conditions listed below is satisfied.

- Ignition switch: Other than ON
- Overdrive control switch is pressed when the O/D OFF indicator lamp is ON.
- Selector lever is shifted to other than D position when the O/D OFF indicator lamp is ON.

## CVT CONTROL SYSTEM : Shift Position Indicator

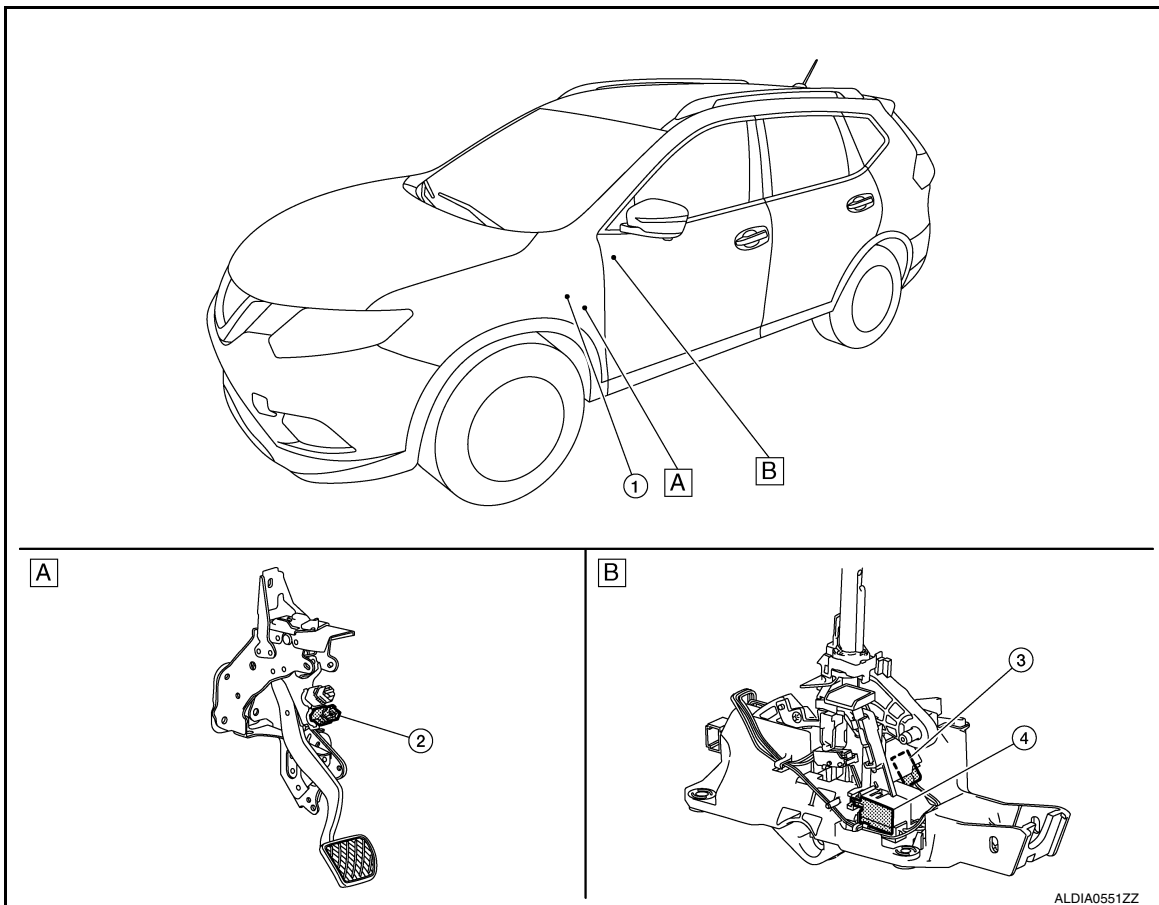
INFOID:000000012428048

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

## SHIFT LOCK SYSTEM

### SHIFT LOCK SYSTEM : Component Parts Location

INFOID:000000012428049



A Brake pedal, upper

B CVT shift selector assembly

## COMPONENT DESCRIPTION

# COMPONENT PARTS

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

No.	Component	Function
1.	BCM	When the stop lamp switch signal is input to the BCM, the BCM outputs the shift lock solenoid operating signal. Refer to <a href="#">BCS-7, "BODY CONTROL SYSTEM : Component Parts Location"</a> (with intelligent key system) or <a href="#">BCS-80, "BODY CONTROL SYSTEM : Component Parts Location"</a> (without intelligent key system) for detailed installation location.
2.	Stop lamp switch	<ul style="list-style-type: none"> <li>• The stop lamp switch turns ON when the brake pedal is depressed.</li> <li>• When the stop lamp switch turns ON, the BCM is energized.</li> </ul>
3.	Park position switch	The park position switch detects that the selector lever is in "P" position.
4.	Shift lock solenoid	The shift lock solenoid operates according to the signal from the BCM and moves the lock lever.

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# STRUCTURE AND OPERATION

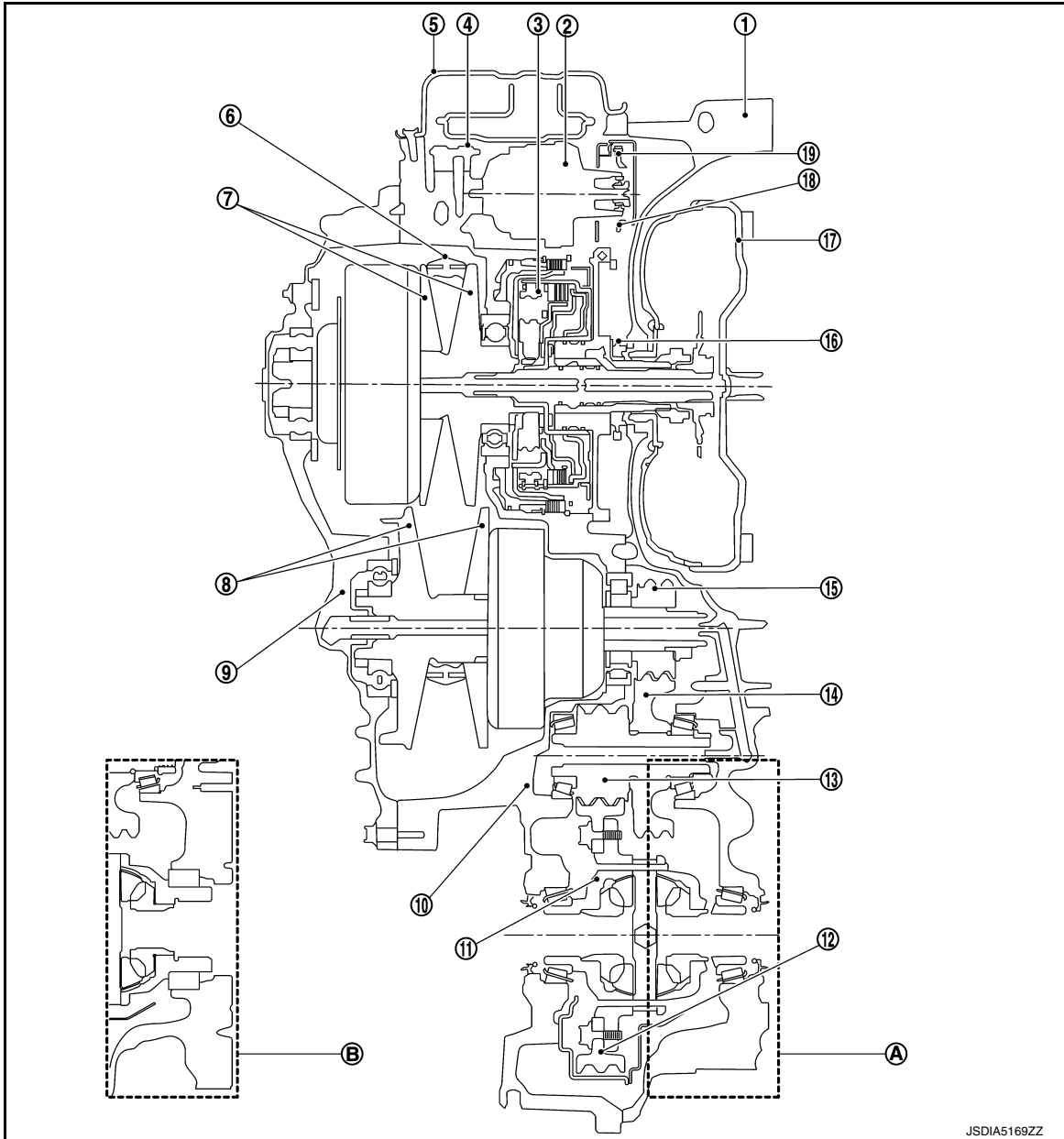
< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## STRUCTURE AND OPERATION TRANSAXLE

TRANSAXLE : Cross-Sectional View

INFOID:000000012428050



JSDIA5169ZZ

- |                     |                     |                   |
|---------------------|---------------------|-------------------|
| ① Converter housing | ② Oil pump          | ③ Planetary gear  |
| ④ Control valve     | ⑤ Oil pan           | ⑥ Steel belt      |
| ⑦ Primary 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               | Ⓑ AWD               |                   |

# STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## TRANSAXLE : Operation Status

INFOID:000000012428051

×: Engaged or applied.

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

## TRANSAXLE : Transaxle Mechanism

INFOID:000000012428052

### 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.

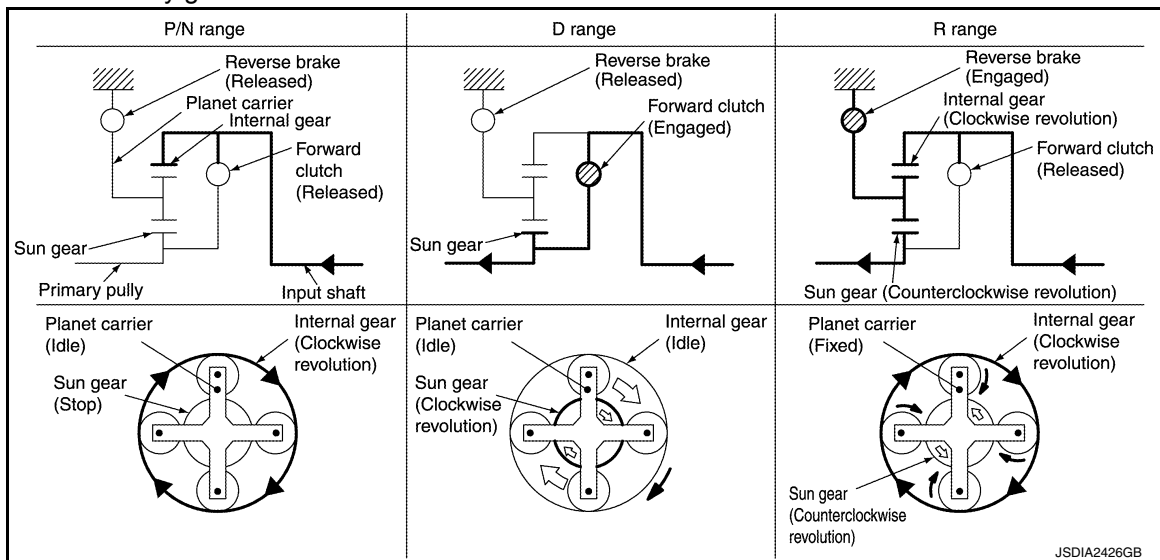
### OIL PUMP

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

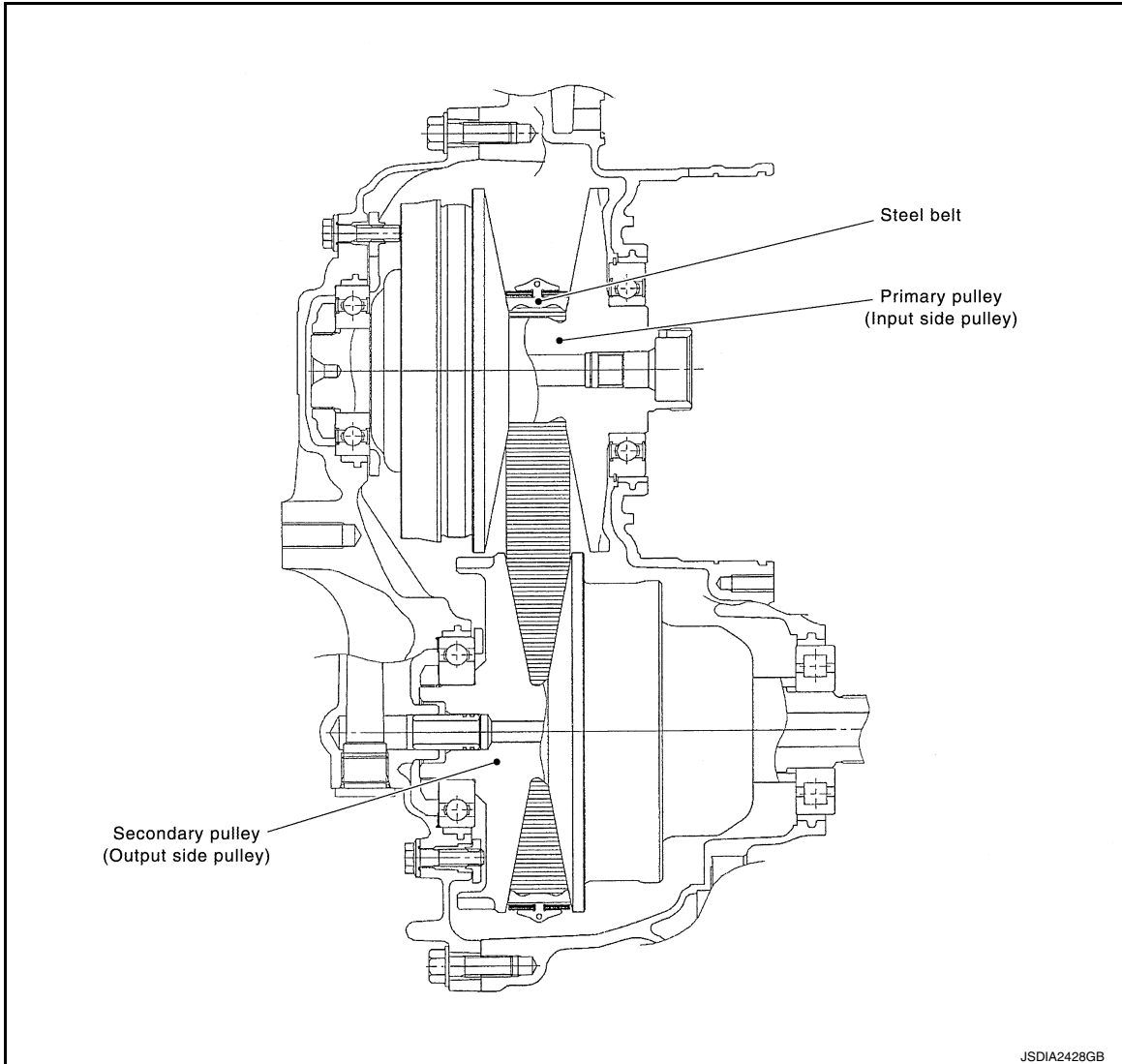
It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the steel belt (the steel plates are placed continuously and the belt is guided with the multilayer steel rings on both sides).

# STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

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



## Steel Belt

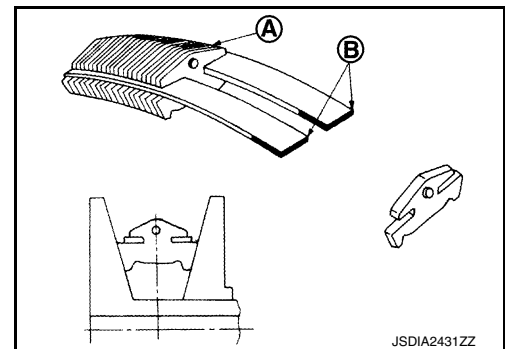
It is composed of multiple steel plates **(A)** and two steel rings **(B)** stacked to a several number. The feature of this steel belt transmits power with compression of the steel plate in contrast with transmission of power in pulling with a rubber belt. Friction force is required with the pulley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

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

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

## Pulley

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



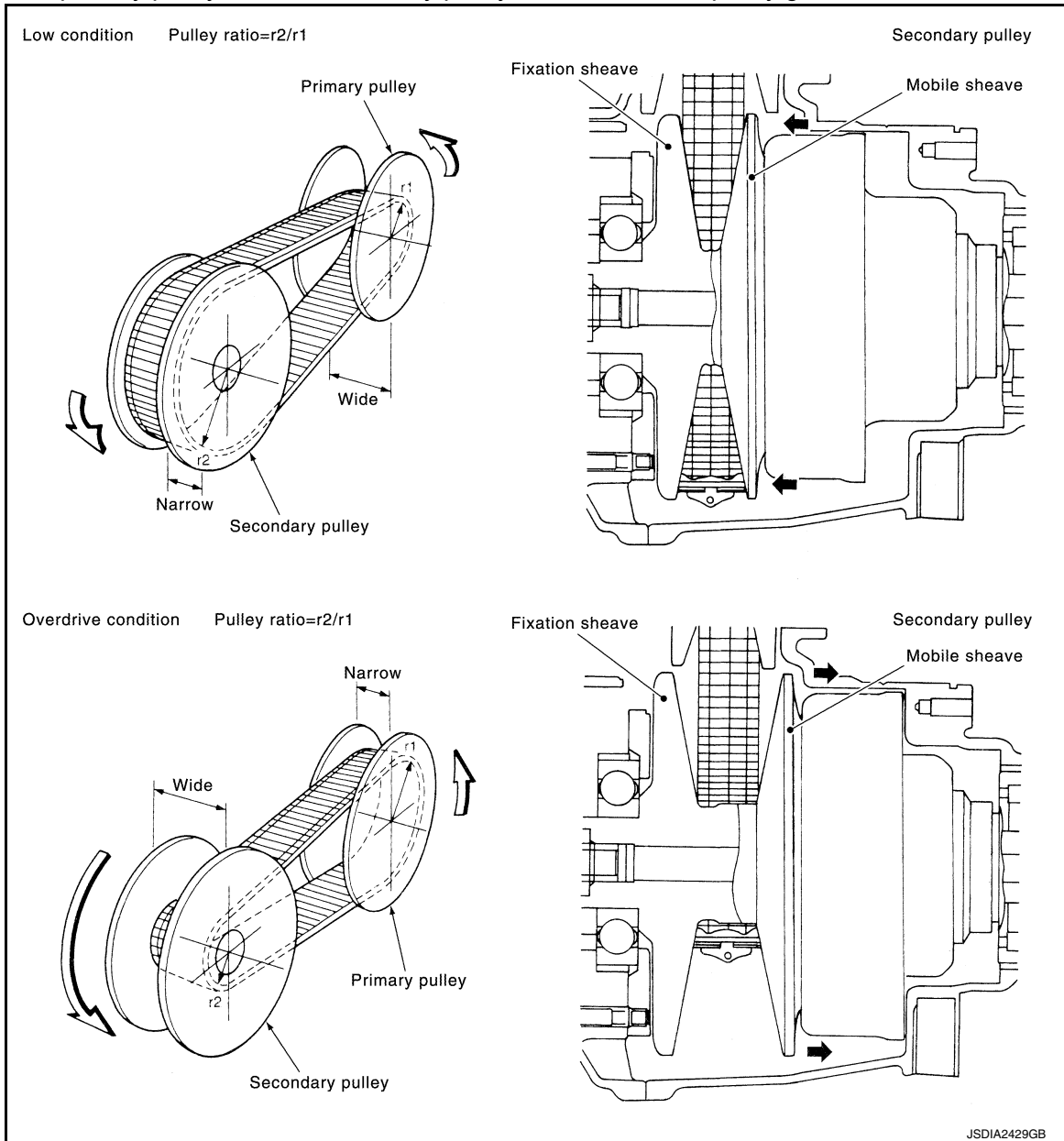


# STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

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

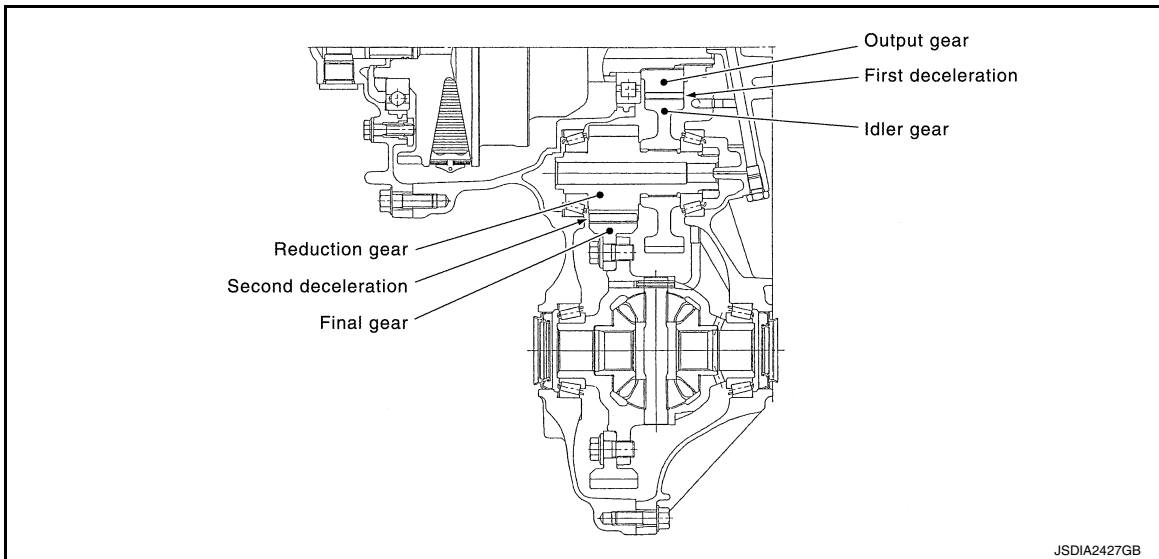
The deceleration gears are composed of 2 stages: primary deceleration (output gear, idler gear pair) and secondary deceleration (reduction gear, final gear pair). All of these gears are helical gears.

# STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

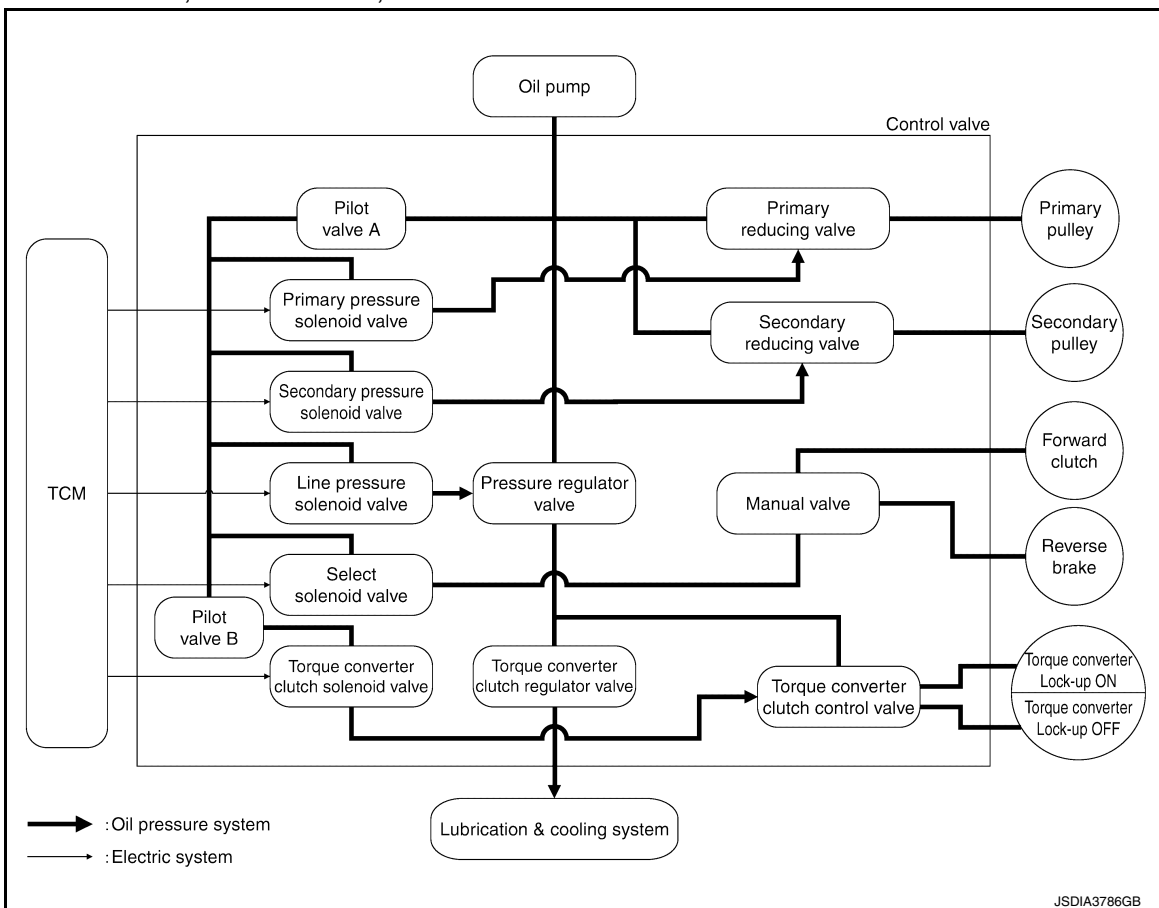
The lubrication oil is the same as the CVT fluid which lubricates the entire transaxle.



## TRANSAXLE : Oil Pressure System

INFOID:000000012428053

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



# STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## TRANSAXLE : Component Description

INFOID:000000012428054

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.
Input shaft	The input shaft is directly connected to forward clutch drum and transmits traction force from torque converter. In shaft center, there are holes for hydraulic distribution to primary pulley and hydraulic distribution for lockup ON/OFF.
Primary pulley	It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the steel belt. The groove width changes according to wrapping radius of steel belt and pulley from low status to overdrive status continuously with non-step. It is controlled with the oil pressures of primary pulley and secondary pulley.
Secondary pulley	
Steel belt	
Manual shaft	When the manual shaft is in the P position, the parking rod that is linked to the manual shaft rotates the parking pole. When the parking pole rotates, it engages with the parking gear, fixing the parking gear. As a result, the 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. <ul style="list-style-type: none"> <li>• Primary pressure solenoid valve</li> <li>• Secondary pressure solenoid valve</li> <li>• Select solenoid valve</li> <li>• Line pressure solenoid valve</li> </ul>
Pilot valve B	Reduces pilot pressure and adjusts pilot pressure to the torque converter clutch solenoid valve.

## FLUID COOLER & FLUID WARMER SYSTEM

# STRUCTURE AND OPERATION

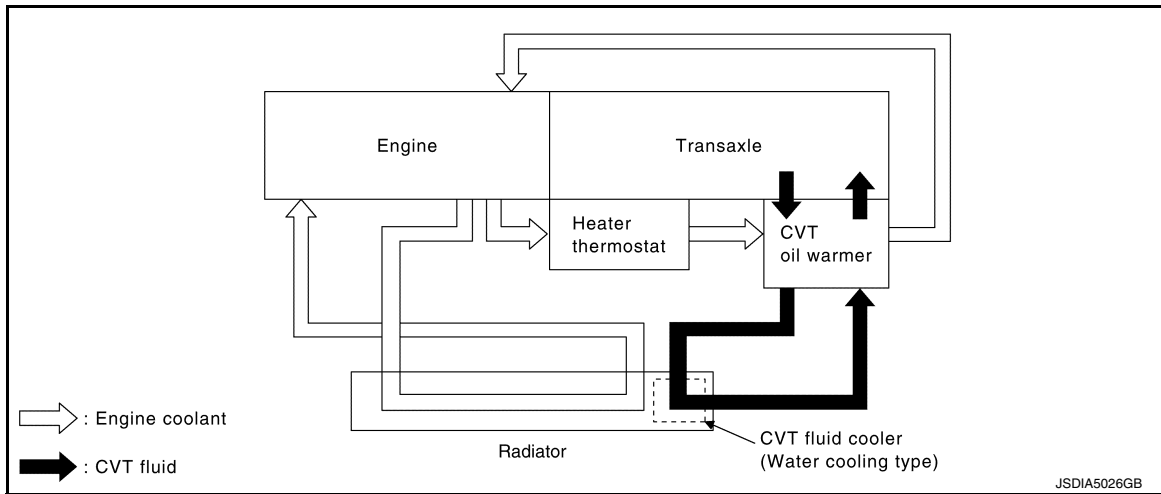
< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## FLUID COOLER & FLUID WARMER SYSTEM : System Description

INFOID:000000012428055

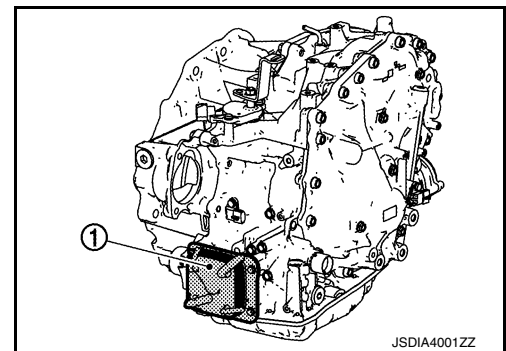
### CVT FLUID COOLER SCHEMATIC



### COMPONENT DESCRIPTION

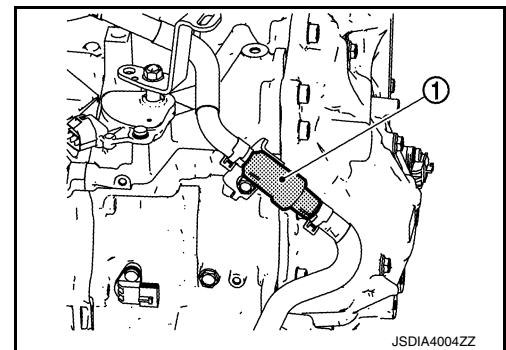
#### CVT Oil Warmer

- 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.



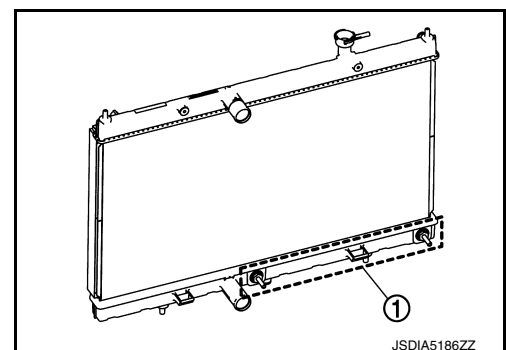
#### Heater Thermostat

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



#### CVT Fluid Cooler (Water Cooling Type)

- The CVT fluid cooler (water cooling type) ① is installed in the lower part of radiator.
- CVT fluid is cooled by engine coolant to flow through the radiator.



## SHIFT LOCK SYSTEM

# STRUCTURE AND OPERATION

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## SHIFT LOCK SYSTEM : System Description

INFOID:000000012428056

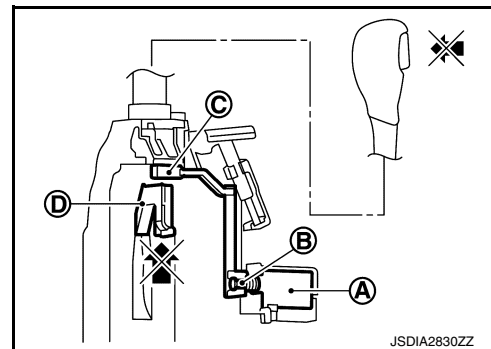
- The shift lock system prevents the select lever from being moved from “P” position to other positions due to a driver's improper operation and prevents the occurrence of an abrupt start.
- Shift lock can be released when the following conditions are satisfied.
  - Ignition switch is ON.
  - Brake pedal is depressed. (Stop lamp switch is ON)

### SHIFT LOCK OPERATION AT P POSITION

When brake pedal is not depressed (no selector operation allowed)

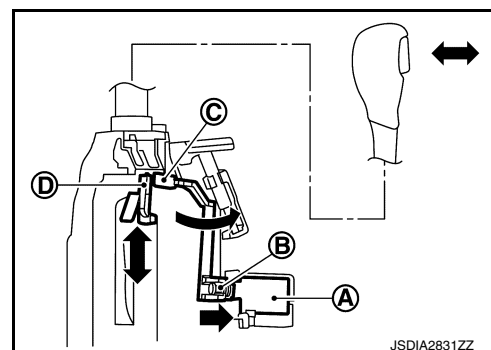
When the brake pedal is not depressed with the ignition switch ON, the shift lock solenoid (A) is OFF (not energized) and the solenoid rod (B) is extended with spring.

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). The selector lever cannot be shifted from the “P” position for this reason.



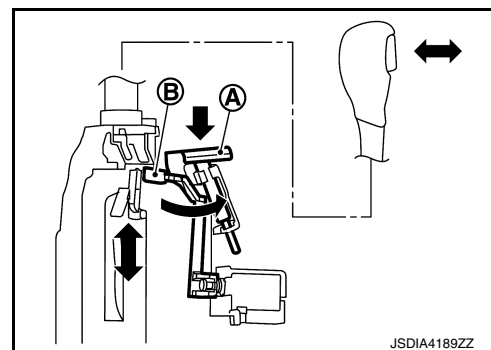
When brake pedal is depressed (selector lever operation allowed)

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 with the electromagnetic force. The connecting lock lever (C) rotates when the solenoid rod is compressed. Therefore, the detent rod (D) can be moved. The selector lever can be shifted to other positions for this reason.



### FORCIBLE RELEASE OF SHIFT LOCK

- When battery voltage decreases or an electrical/mechanical malfunction occurs in the shift lock system, the selector lever cannot be operated in “P” position. When shift lock release rod (A) is pressed in this state, lock lever (B) is forcibly rotated, and then it becomes possible to release shift lock.



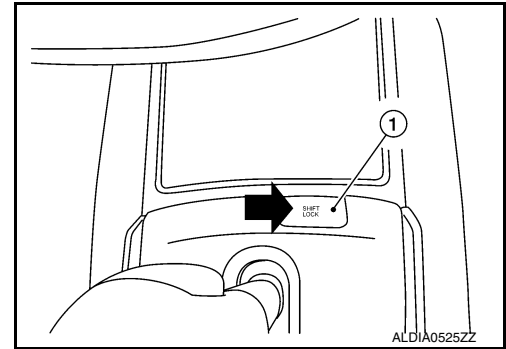
- To release the shift lock forcibly and shift the selector lever from “P” position to other positions, follow the steps below.
  1. Turn ignition switch OFF.
  2. Apply parking brake.

# STRUCTURE AND OPERATION

## < SYSTEM DESCRIPTION >

[CVT: RE0F10D]

3. Press the shift lock release button ① with suitable tool.
4. Press and hold the selector lever knob button and move the selector lever from "P" position to other positions while press the shift lock release button.



## KEY LOCK SYSTEM

### KEY LOCK SYSTEM : System Description

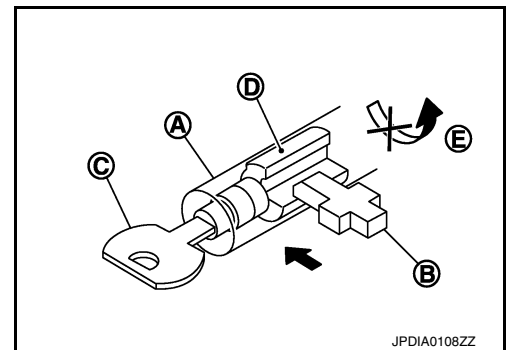
INFOID:000000012428057

### KEY LOCK MECHANISM

The key is not set to LOCK when the selector lever is not selected to P position. This prevents the key from being removed from the key cylinder.

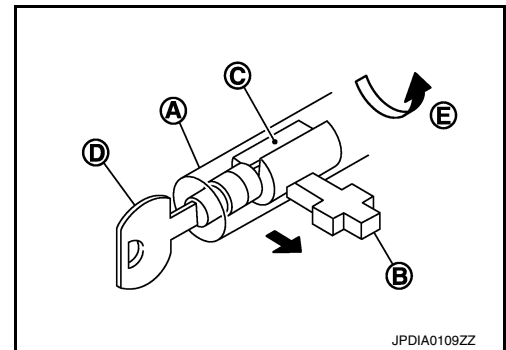
#### Key lock status

The slider ② in the key cylinder ① is moved to the left side of the figure when the selector lever is in any position other than "P" position. The rotator ④ that rotates together with the key ③ cannot be rotated for this reason. The key cannot be removed from the key cylinder because it cannot be turned to LOCK ⑤.



#### Key unlock status

The slider ② in the key cylinder ① is moved to the right side of the figure when the selector lever is in "P" position and the finger is removed from the selector button. The rotator ③ can be rotated for this reason. The key ④ can be removed from the key cylinder because it can be turned to LOCK ⑤.



# SYSTEM

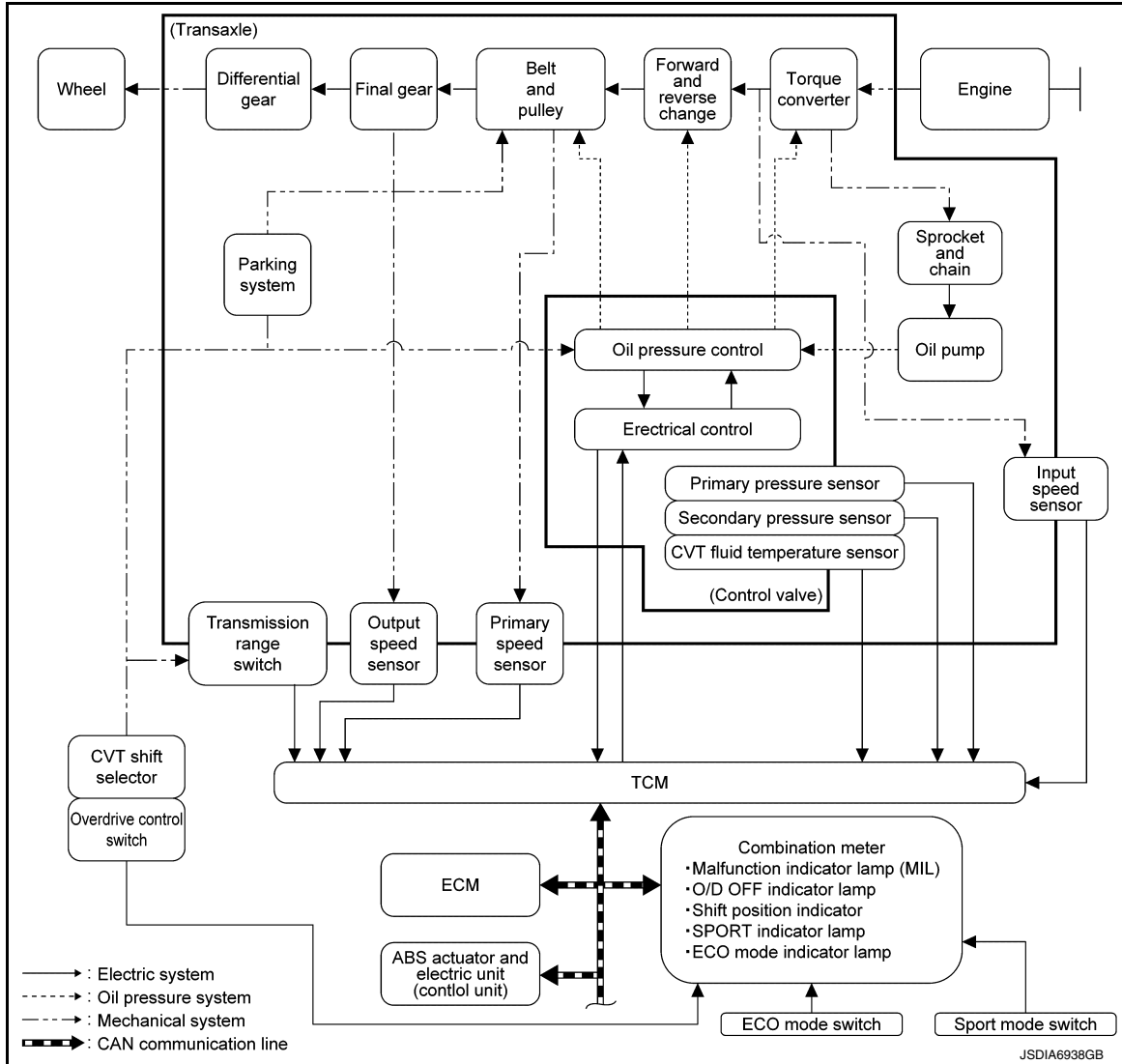
< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## SYSTEM CVT CONTROL SYSTEM CVT CONTROL SYSTEM : System Description

INFOID:000000012428058

### SYSTEM DIAGRAM



### MAIN CONTROL CONTENTS OF TCM

Controls	Reference
Line pressure control	<a href="#">TM-36, "LINE PRESSURE CONTROL : System Description"</a>
Shift control	<a href="#">TM-37, "SHIFT CONTROL : System Description"</a>
Select control	<a href="#">TM-39, "SELECT CONTROL : System Description"</a>
Lock-up control	<a href="#">TM-40, "LOCK-UP CONTROL : System Description"</a>
Sport mode control	<a href="#">TM-41, "SPORT MODE CONTROL : System Description"</a>
ECO mode control	<a href="#">TM-43, "ECO MODE SYSTEM : System Description"</a>
Fail-safe	<a href="#">TM-58, "Fail-safe"</a>
Self-diagnosis function	<a href="#">TM-47, "CONSULT Function"</a>
Communication function with CONSULT	<a href="#">TM-47, "CONSULT Function"</a>

### LIST OF CONTROL ITEMS AND INPUT/OUTPUT

# SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

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	×	×	×	×	×
	Overdrive control 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)			×		
	O/D OFF indicator lamp (CAN communication)	×				

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

## CVT CONTROL SYSTEM : Fail-safe

INFOID:000000012428059

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	<ul style="list-style-type: none"> <li>• Shift position indicator on combination meter is not displayed</li> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—



# SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

DTC	Vehicle behavior	Conditions of vehicle	
P0706	<ul style="list-style-type: none"> <li>• Shift position indicator on combination meter is not displayed</li> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	A
P0711	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	B
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: $-35^{\circ}\text{C}$ (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	C
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine star: Temp. $< -35^{\circ}\text{C}$ (-31°F)	E
P0712	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	F
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: $-35^{\circ}\text{C}$ (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	G
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine star: Temp. $< -35^{\circ}\text{C}$ (-31°F)	H
P0713	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	I
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: $-35^{\circ}\text{C}$ (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	J
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine star: Temp. $< -35^{\circ}\text{C}$ (-31°F)	K
P0715	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	L
P0717	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	M
P0740	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	N
P0743	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	O
P0744	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	P
P0746	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	

# SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

DTC	Vehicle behavior	Conditions of vehicle
P0776	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> <li>• Vehicle speed is not increased</li> </ul>	When a malfunction occurs on the low oil pressure side
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	When a malfunction occurs on the high oil pressure side
P0778	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0779	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
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	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0890	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> <li>• Vehicle speed is not increased</li> </ul>	—
P0962	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0963	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0965	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	When a malfunction occurs on the low oil pressure side
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Lock-up is not performed</li> </ul>	When a malfunction occurs on the high oil pressure side
P0966	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0967	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P2765	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—

# SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

DTC	Vehicle behavior	Conditions of vehicle
P2813	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Vehicle speed is not increased</li> </ul>	When a malfunction occurs on the low oil pressure side
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> </ul>	When a malfunction occurs on the high oil pressure side
P2814	Selector shock is large	—
P2815	Selector shock is large	—
U0073	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
U0102	Not changed from normal driving	—
U0140	Not changed from normal driving	—
U0141	Not changed from normal driving	—
U0155	Not changed from normal driving	—
U0300	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
U1000	Not changed from normal driving	—
U110F	Not changed from normal driving	—
U1111	Not changed from normal driving	—
U1117	Not changed from normal driving	—

## CVT CONTROL SYSTEM : Protection Control

INFOID:000000012428060

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

# SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

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

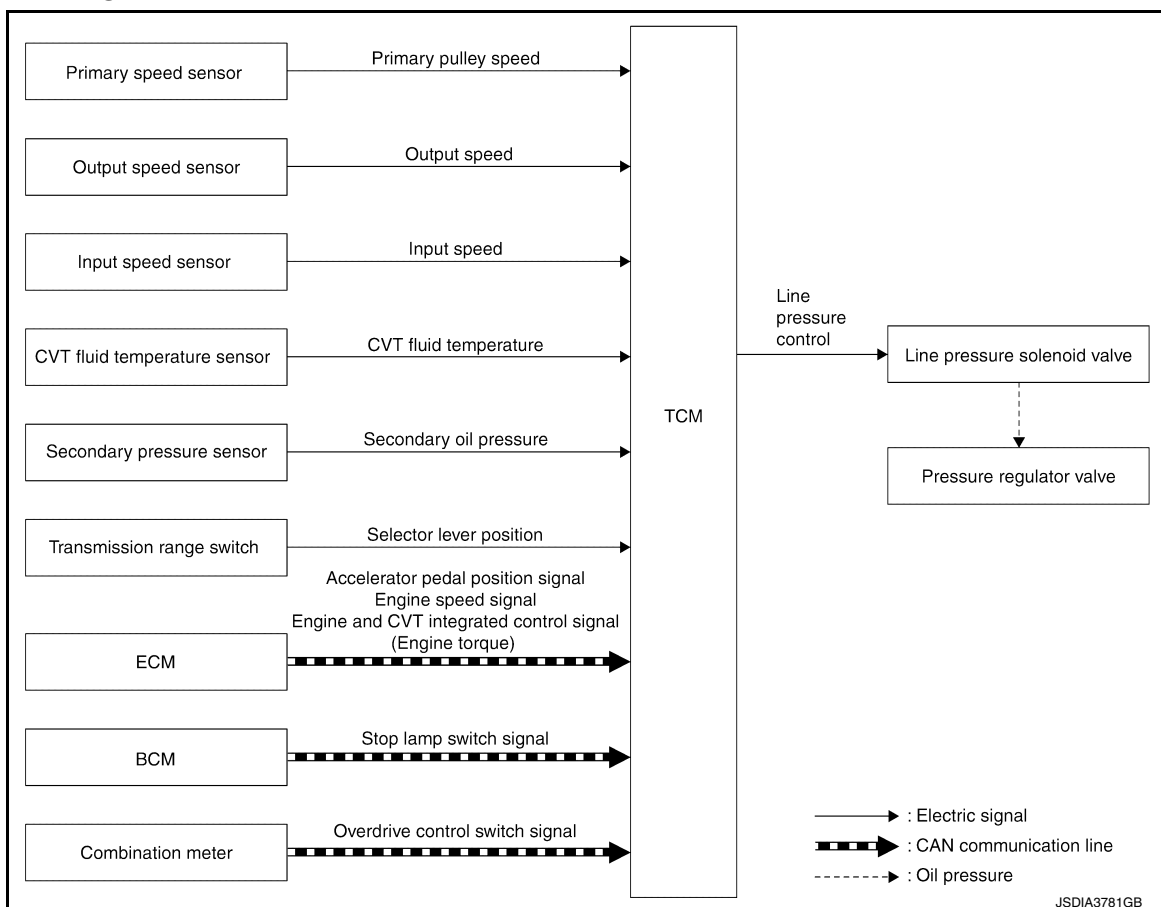
Control	The reverse brake is controlled to avoid becoming engaged when the selector lever is set in "R" position while driving in forward direction at more than the specified speed.
Vehicle behavior in control	If the selector lever is put at "R" position when driving with the forward gear, the gear becomes 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:000000012428061

### SYSTEM DIAGRAM



### DESCRIPTION

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

#### Normal Oil Pressure Control

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 overdrive control switch signal.

# SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## Secondary Pressure Feedback Control

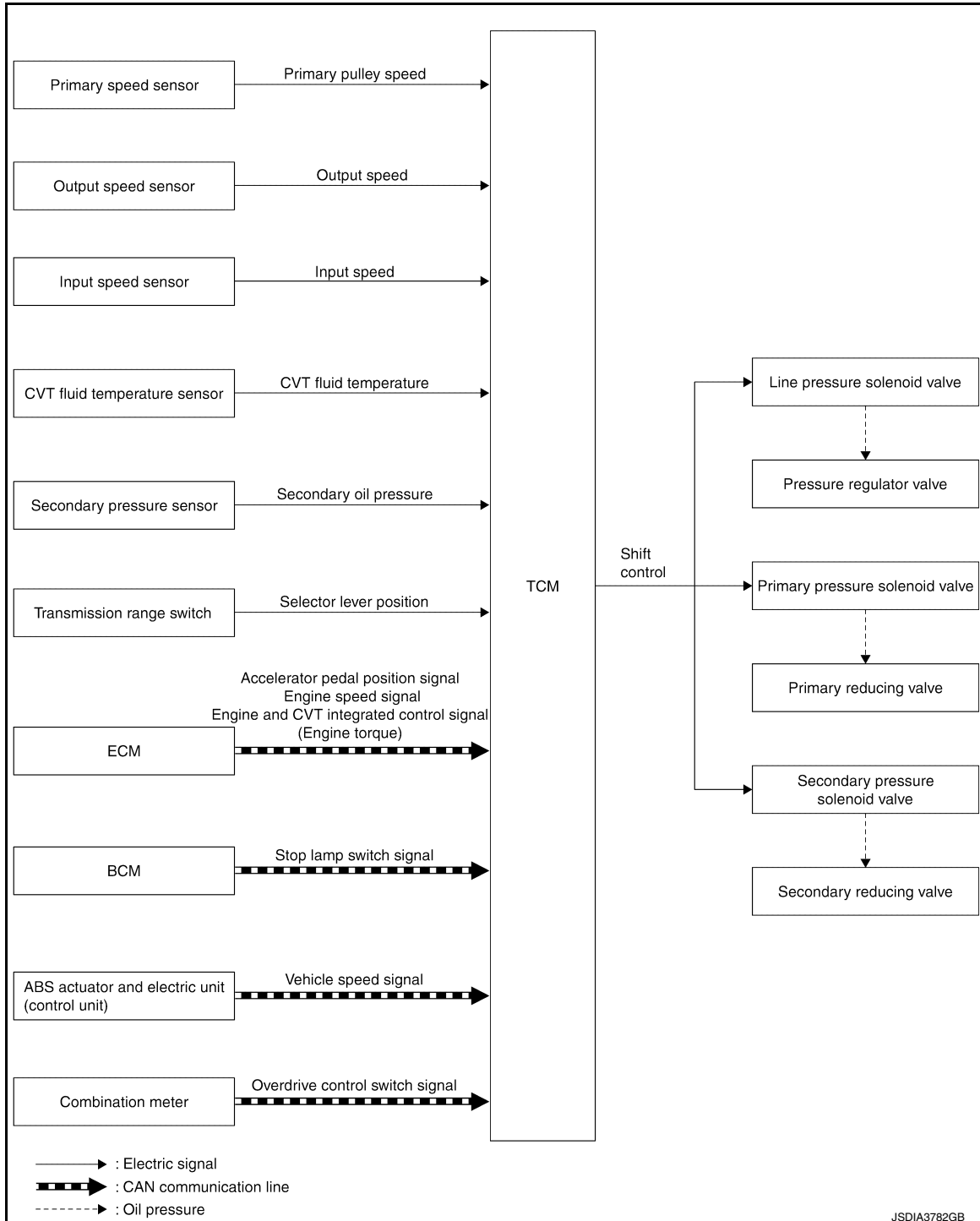
In normal oil pressure control and oil pressure control in shifting, highly accurate secondary pressure is determined by detecting the secondary pressure using an oil pressure sensor and by feedback control.

## SHIFT CONTROL

### SHIFT CONTROL : System Description

INFOID:000000012428062

#### SYSTEM DIAGRAM



#### 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 out-

# SYSTEM

## < SYSTEM DESCRIPTION >

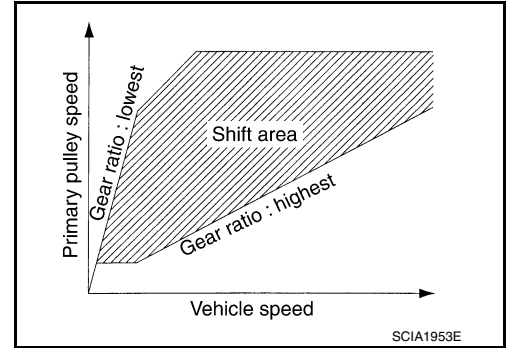
[CVT: RE0F10D]

put 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

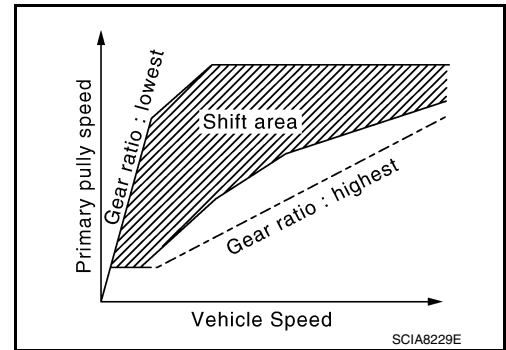
- D Position (Normal)

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



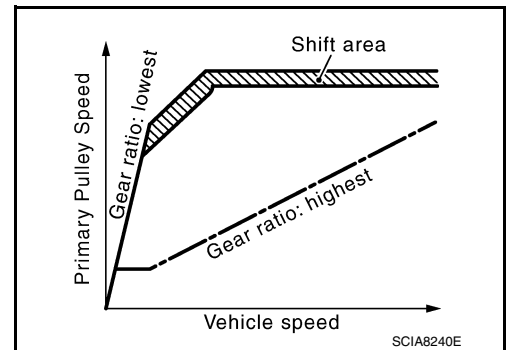
- D Position (O/D OFF)

The gear ratio is generally high by limiting the shifting range on the high side, and this always generates a large driving power.



- L Position

By limiting the shifting range only to the lowest of the gear ratio, a large driving force and engine brake are obtained.

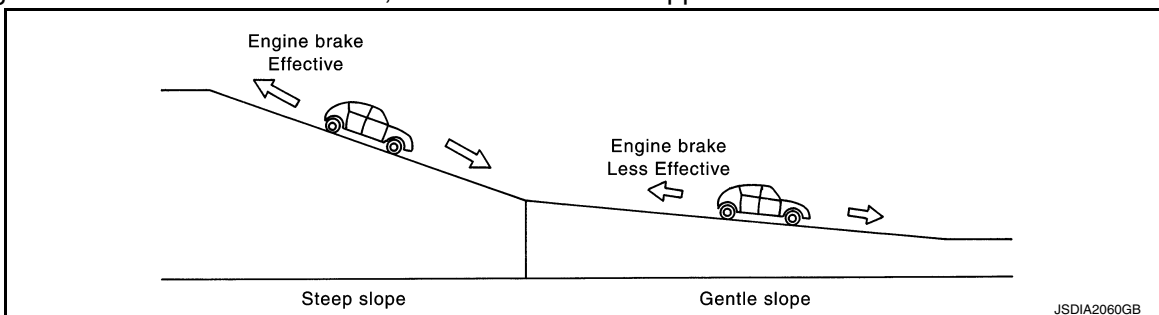


### Hill Climbing And Descending Control

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.



# SYSTEM

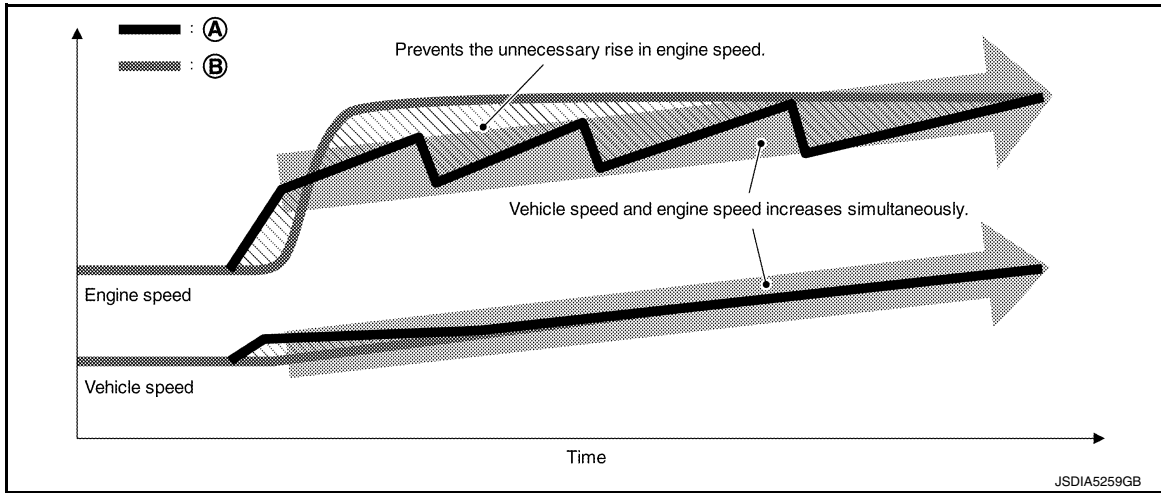
## < SYSTEM DESCRIPTION >

[CVT: RE0F10D]

### 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.

- When the accelerator pedal is depressed 4/8 or more in D position, CVT performs step shifting to allow the vehicle speed and engine speed to increase simultaneously. This improves the feel of acceleration and enables the fuel economy by preventing unnecessary rise in engine speed, compared to the conventional shifting.



Ⓐ Step shift

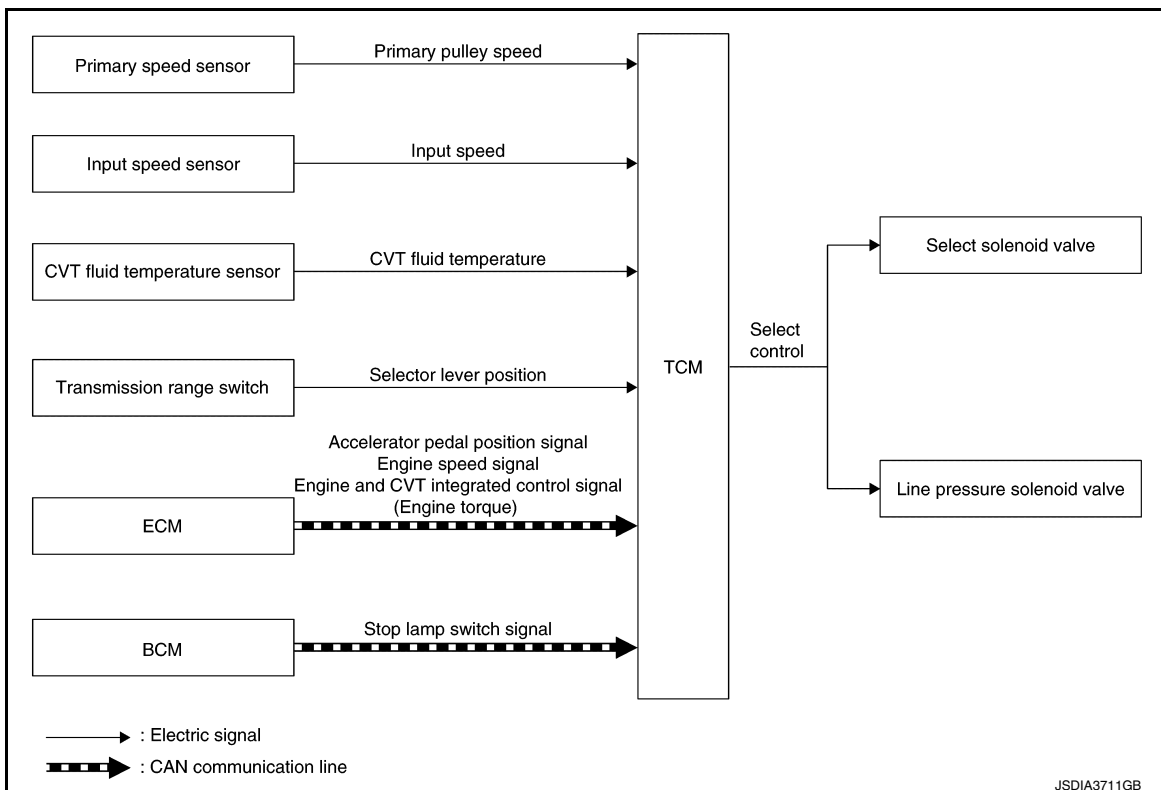
Ⓑ Conventional shift

## SELECT CONTROL

### SELECT CONTROL : System Description

INFOID:000000012428063

### SYSTEM DIAGRAM



# SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## DESCRIPTION

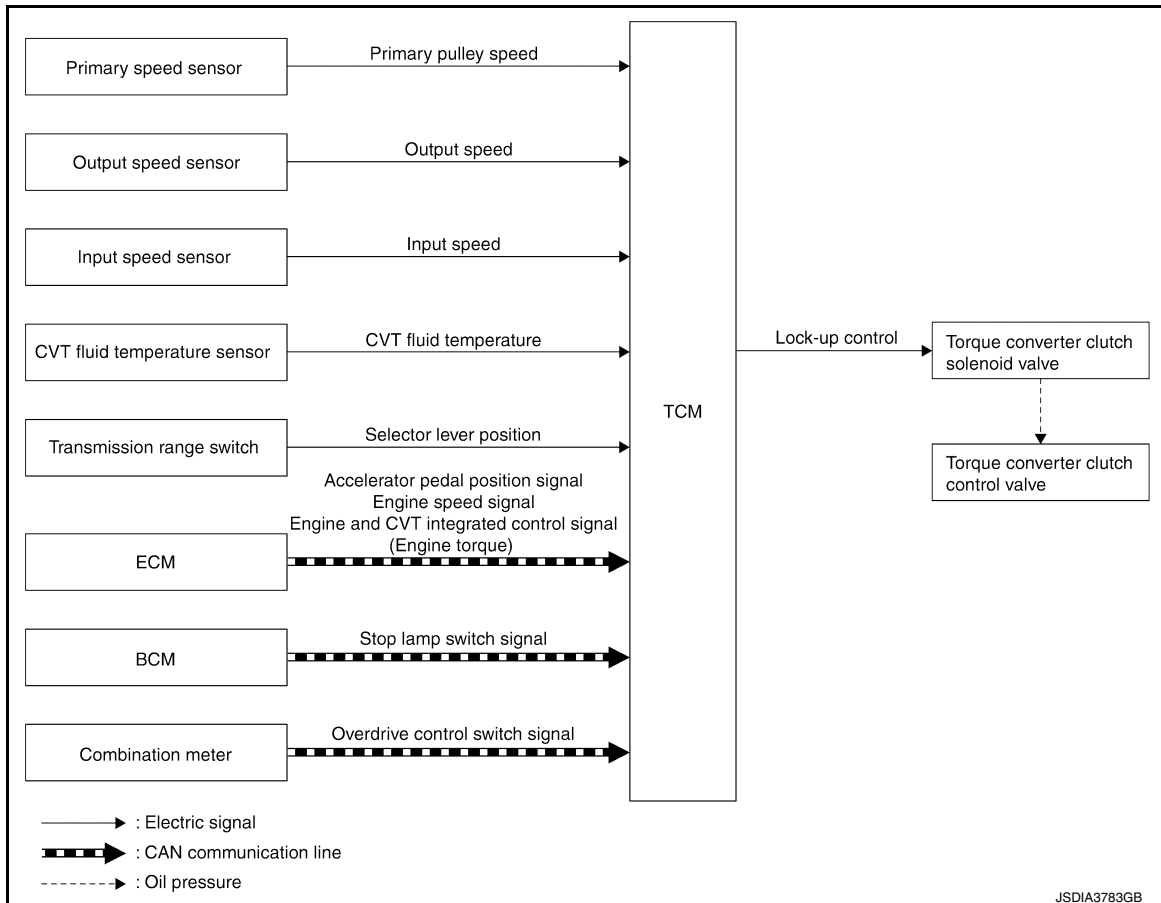
Based on accelerator pedal angle, engine speed, primary pulley speed, and the input speed, the optimum operating pressure is set to reduce impact of a selector lever operation while shifting from “N” (“P”) to “D” (“R”) position.

## LOCK-UP CONTROL

### LOCK-UP CONTROL : System Description

INFOID:000000012428064

## 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.

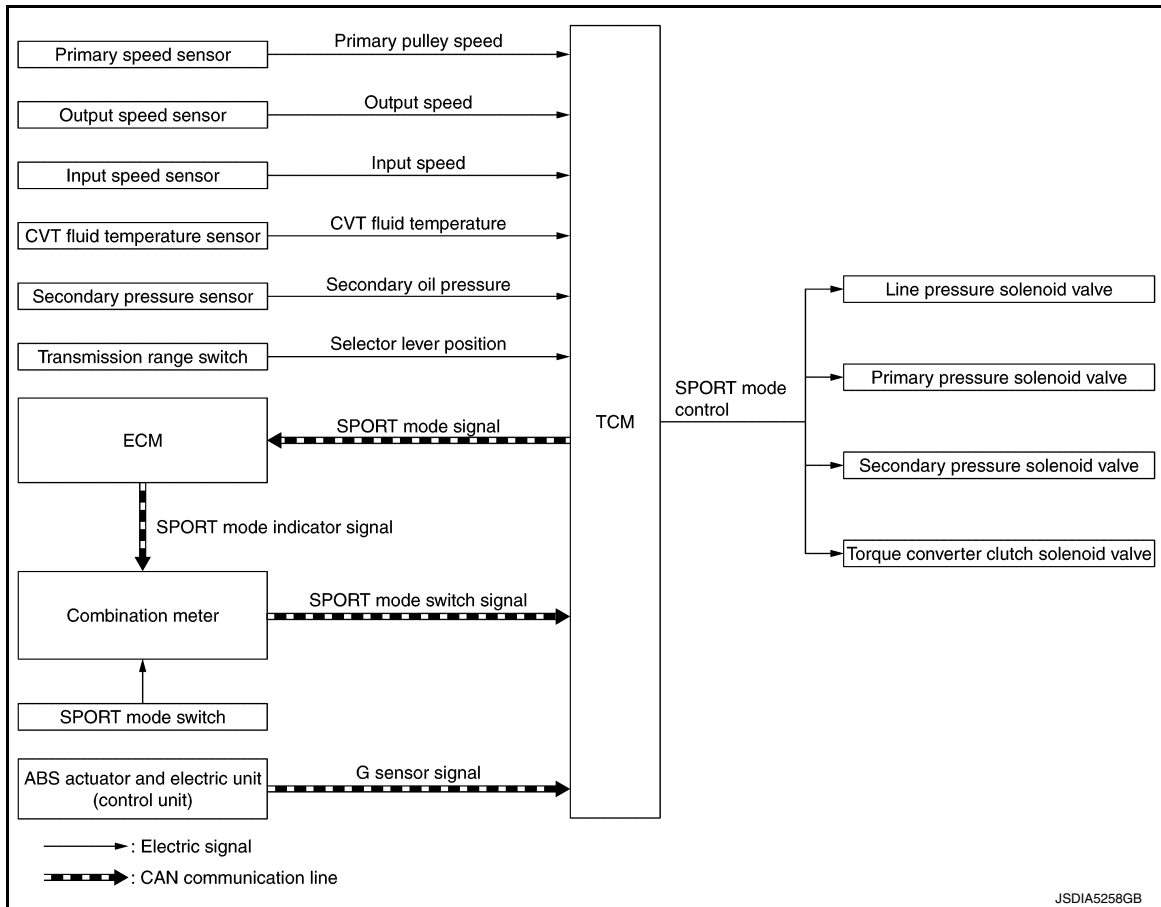
## SPORT MODE CONTROL



## SPORT MODE CONTROL : System Description

INFOID:000000012428065

### SYSTEM DIAGRAM



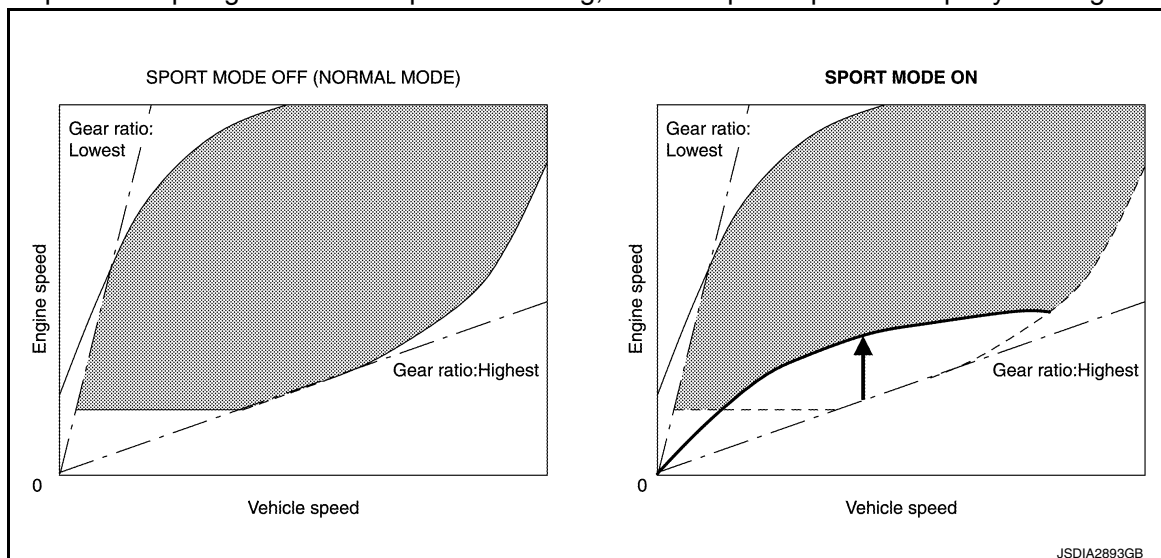
### DESCRIPTION

- For a sporty driving on winding roads, establishing sport mode allows the driver to perform a sporty driving different from normal driving performed in D position.
- If overdrive control switch is operated during SPORT mode ON condition, overdrive control operation will take priority.

### Sport Mode Function

#### High Gear Ratio Limit

- Engine speed is kept higher than at D position driving, which helps to operate a “sporty” driving.



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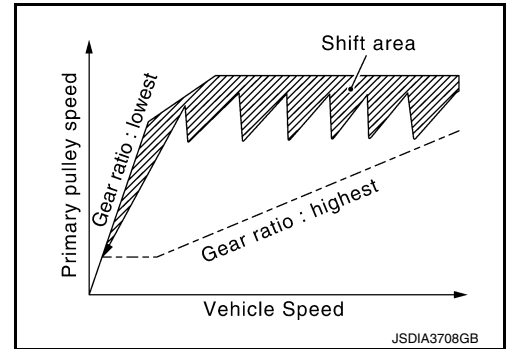
# SYSTEM

## < SYSTEM DESCRIPTION >

[CVT: RE0F10D]

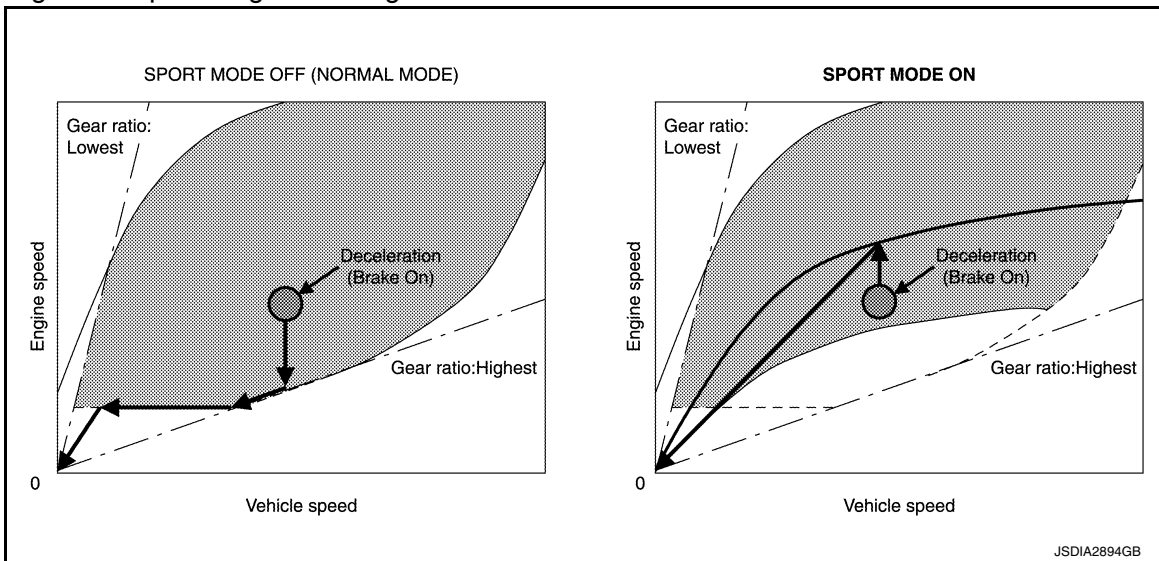
### Step Shift

- Pressing down the accelerator pedal allows to drive the vehicle with a feeling of A/T-like gear shifting.



### Braking Down Shift

- At a moderate braking operation before corner etc., the engine speed increases according to the deceleration and the transmission shifts down automatically, in order to optimize the response at reacceleration while providing an adequate engine braking.

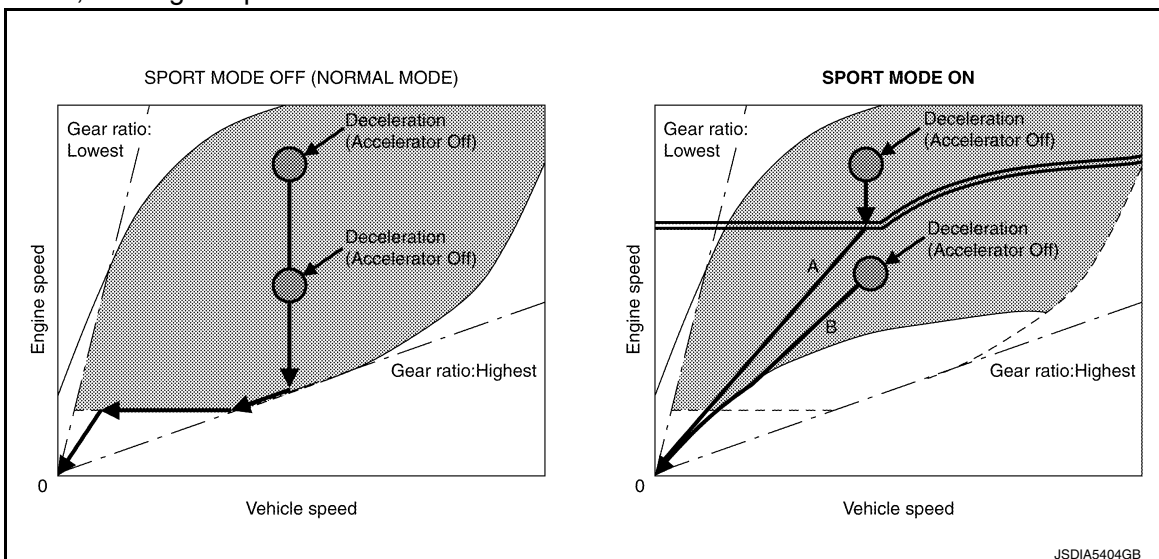


### Acceleration Off Ratio Hold

- When the vehicle is decelerated by quickly releasing the foot from accelerator pedal, transmission does not shift up automatically to keep a constant gear ratio, holding the high engine speed.

When the vehicle is decelerated (by accelerator pedal OFF) in upper area of double line in below chart, the engine speed shows a characteristic like "A".

On the other hand, when the vehicle is decelerated (by accelerator pedal OFF) in lower area of double line in below chart, the engine speed shows a characteristic like "B".



# SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

## Fail-Safe

If a malfunction occurs in CVT system during SPORT mode ON, SPORT mode indicator extinguishes and the vehicle returns to standard D position driving.

## ECO MODE SYSTEM

### ECO MODE SYSTEM : System Description

INFOID:000000012428066

- Driving mode that selects the shift schedule with priority on fuel economy which gives low engine revolution.
- For details on ECO mode control, refer to [DMS-24, "ECO MODE CONTROL : System Description"](#).



## FAIL-SAFE

If a malfunction occurs in the system of CVT during ECO mode, the ECO mode indicator lamp turns OFF and the control switches to the normal mode control.

## WARNING/INDICATOR/CHIME LIST

### WARNING/INDICATOR/CHIME LIST : Warning Lamp/Indicator Lamp

INFOID:000000012428067

Name	Design	Arrangement/Function
O/D OFF indicator lamp		Regarding the arrangement. Refer to <a href="#">MWI-7, "METER SYSTEM : Design"</a> .
		Regarding the function. Refer to <a href="#">TM-19, "CVT CONTROL SYSTEM : O/D OFF Indicator Lamp"</a> .
Malfunction indicator lamp (MIL)		Regarding the arrangement. Refer to <a href="#">MWI-7, "METER SYSTEM : Design"</a> .
		Regarding the function. Refer to <a href="#">EC-51, "WARNING/INDICATOR/CHIME LIST : Malfunction Indicator Lamp (MIL)"</a> .
Sport mode indicator lamp	SPORT	Regarding the arrangement. Refer to <a href="#">MWI-7, "METER SYSTEM : Design"</a> .
		Regarding the function. Refer to <a href="#">DMS-6, "SPORT Mode Indicator Lamp"</a> .

# ON BOARD DIAGNOSTIC (OBD) SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

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## ON BOARD DIAGNOSTIC (OBD) SYSTEM

### Diagnosis Description

INFOID:000000012428068

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

### GST (Generic Scan Tool)

INFOID:000000012428069

When GST is connected with a data link connector equipped on the vehicle side, it will communicate with the control module equipped in the vehicle and then enable various kinds of diagnostic tests. Refer to [GI-53, "Description"](#).

**NOTE:**

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

## DIAGNOSIS SYSTEM (TCM)

### DIAGNOSIS DESCRIPTION

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

INFOID:000000012428070

**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-63, "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 <a href="#">TM-63, "DTC Index"</a> )	—	—	×	—	×	—
2 trip detection diagnosis (Refer to <a href="#">TM-63, "DTC Index"</a> )	×	—	—	×	—	×

### DIAGNOSIS DESCRIPTION : DTC and DTC of 1st Trip

INFOID:000000012428071

#### 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-47, "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-78, "Work Flow"](#).

### DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp (MIL)

INFOID:000000012428072

- 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-51, "WARNING/INDICATOR/CHIME LIST : Malfunction Indicator Lamp \(MIL\)"](#).

### DIAGNOSIS DESCRIPTION : Counter System

INFOID:000000012428073

#### 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)

[CVT: RE0F10D]

## < SYSTEM DESCRIPTION >

- 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:

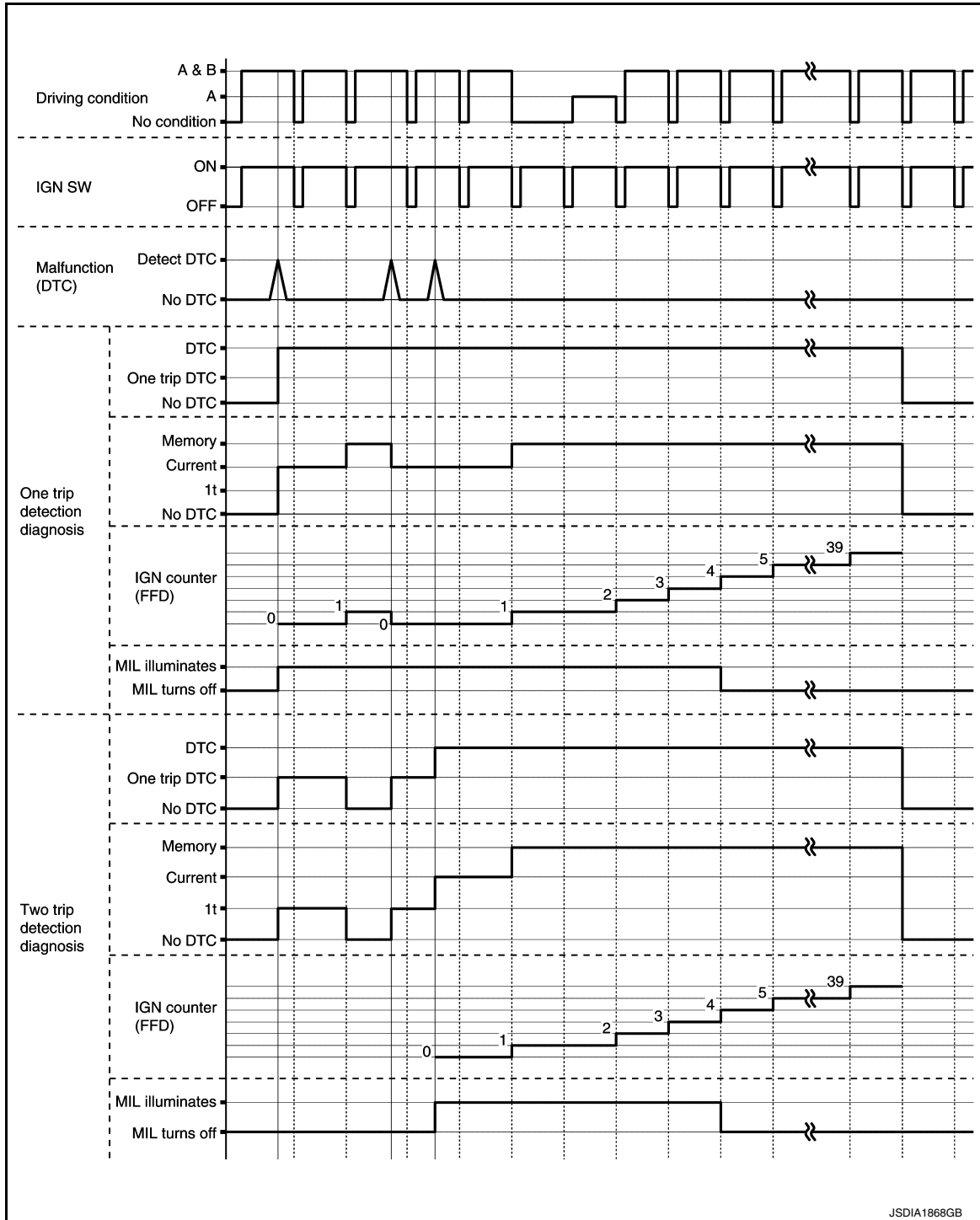
- If the same malfunction is detected regardless of the driving condition, reset the B counter.
- When the above is satisfied without detecting the same malfunction, count up the B counter.
- When the B counter reaches 3 without malfunction, MIL goes off.
- When the B counter is counted once without 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: RE0F10D]

## TIME CHART



JSDIA1868GB

## CONSULT Function

INFOID:0000000012428074

## 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.

# DIAGNOSIS SYSTEM (TCM)

[CVT: RE0F10D]

## < SYSTEM DESCRIPTION >

Conditions	Function
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-63. "DTC Index"](#).

DTC at 1st trip and method to read DTC

- DTC (P0705, P0712, 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-45. "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.
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.
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.



# DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

Monitored item	(Unit)	Remarks
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.
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).

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# DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

Monitored item	(Unit)	Remarks
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.
STRDWN*SW*	(On/Off)	Displays the operation status of the paddle shifter (down switch).
STRUP*SW*	(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 OD 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".
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.

# DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10D]

Monitored item	(Unit)	Remarks
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		<ul style="list-style-type: none"> <li>Displays CVT fluid temperature count.</li> <li>This monitor item does not use.</li> </ul>
CVT-A		<ul style="list-style-type: none"> <li>Displays CVT fluid temperature count.</li> <li>This monitor item does not use.</li> </ul>

\*: 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:0000000012428075

#### 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	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	1.23 – 1.25 V
PRI PRESSURE SEN	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	0.75 – 0.82 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	Vehicle is level	0 V
VIGN SEN	Ignition switch: ON	10 – 16 V
PVIGN VOLT	Ignition switch: ON	10 – 16 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)	2.70 – 0.38
	In driving (reverse)	2.70

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

Monitor item	Condition	Value/Status (Approx.)	
G SPEED	Vehicle stopped	0.00 G	A
	During acceleration	The value changes to the positive side along with acceleration.	B
	During deceleration	The value changes to the positive side along with deceleration.	
ACCEL POSI SEN 1	Accelerator pedal released	0.00 deg	C
	Accelerator pedal fully depressed	80.00 deg	
VENG TRQ	While driving	The value changes along with acceleration/ deceleration.	TM
PRI TRQ	While driving	The value changes along with acceleration/ deceleration.	
TRQ RTO	While driving	The value changes along with acceleration/ deceleration.	E
SEC PRESSURE	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	1.1 MPa	F
PRI PRESSURE	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	0.4 – 0.45 MPa	G
FLUID TEMP	Ignition switch ON.	Displays the CVT fluid temperature.	
DSR REV	While driving	It varies along with the driving condition.	H
TGT PLY GR RATIO	In driving (forward)	2.70 – 0.38	
	In driving (reverse)	2.70	
LU PRS	<ul style="list-style-type: none"> <li>• Engine started</li> <li>• Vehicle is stopped.</li> </ul>	-0.50 MPa	I
	<ul style="list-style-type: none"> <li>• Selector lever: "D" position</li> <li>• Accelerator pedal position: 1/8 or less</li> <li>• Vehicle speed: 20 km/h (12 MPH) or more</li> </ul>	0.65 MPa	J
LINE PRS	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	1.1 MPa	K
TRGT PRI PRESSURE	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	0.4 – 0.45 MPa	L
TARGET SELECT PRESSURE	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	0 MPa	M
	<ul style="list-style-type: none"> <li>• Selector lever: "D" position</li> <li>• At idle</li> </ul>	0.3 – 0.5 MPa	N
TARGET SEC PRESSURE	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	1.1 MPa	
ISOLT1*	—	—	O
ISOLT2 *	—	—	
PRI SOLENOID*	—	—	P
SEC SOLENOID CURRENT*	—	—	
SELECT SOLENOID CURRENT*	—	—	
SOLMON1*	—	—	
SOLMON2*	—	—	
PRI SOL MON*	—	—	

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

Monitor item	Condition	Value/Status (Approx.)
SEC SOL MON CURRENT*	—	—
SELECT SOL MON CURRENT*	—	—
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	Selector lever: "L" position	On
	Other than the above	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	Press the overdrive control switch	On
	Release the overdrive control switch	Off
ECO MODE SW	Press the ECO mode switch	On
	Other than the above	Off
STRDWNSW	Always	Off
STRUPSW	Always	Off
DOWNLVR	Always	Off
UPLVR	Always	Off
NONMMODE	Always	On
MMODE	Always	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
	Selector lever: "L" position	L
CVT LAMP	Approx. 2 seconds after ignition switch ON	On
	Other than the above	Off
SPORT MODE IND	In O/D OFF	On
	Other than the above	Off
MANU MODE SIGNAL	Always	Off
DS RANGE SIGNAL	Always	Off
ECO MODE SIGNAL	Always	Off
VDC ON	When VDC malfunction signal is received	On
	Other than the above	Off

# TCM

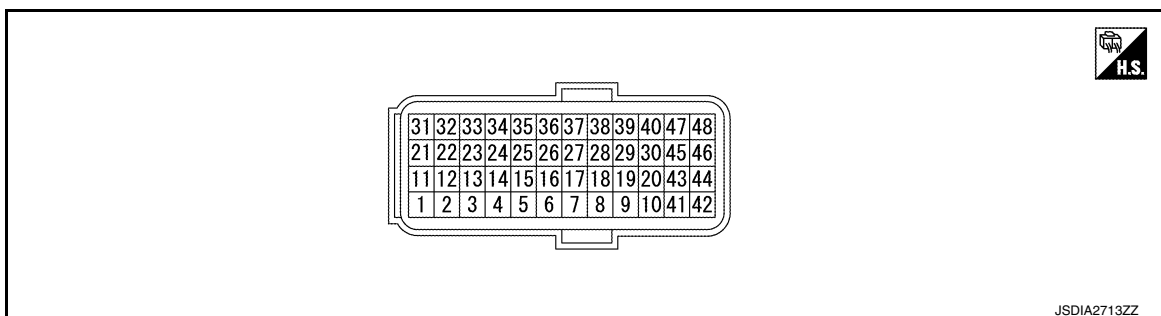
< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

Monitor item	Condition	Value/Status (Approx.)
TCS ON	When TCS malfunction signal is received	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 (Normal)	D
	Selector lever: "D" position (O/D OFF)	S
	Selector lever: "L" position	L
M GEAR POS	Always	1
G SEN SLOPE	Always	0%
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 driving in SPORT mode	SPORT
	Other than the above	NORMAL
SNOW MODE	Always	Off
ECO MODE	Always	Off
NORMAL MODE	Always	Off
SPORT MODE	Always	Off
AIR BLDING STATE	Always	INCOMP
ELECTRIC OP DUTY	Always	0%
E-OP DUTY MON	Always	0%
ELECTRIC OP RELAY	Always	Off
E-OP RELAY MON	Always	Off
CVT-B*	—	—
CVT-A*	—	—

\*: These monitor items do not use.

## TERMINAL LAYOUT



## INPUT/OUTPUT SIGNAL STANDARD

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

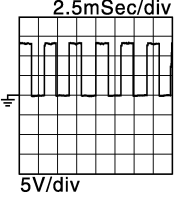
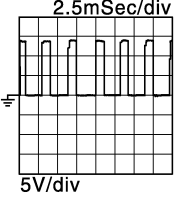
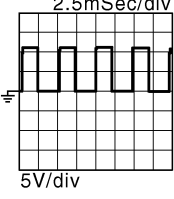
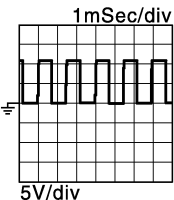
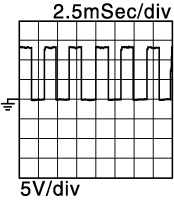
Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal	Input/ Output		
2 (GR)	Ground	L range switch	Input	Ignition switch ON	Selector lever: "L" position 10 – 16 V
				Other than the above	0 V
4 (Y)	Ground	D range switch	Input	Ignition switch ON	Selector lever: "D" position 10 – 16 V
				Other than the above	0 V
5 (BR)	Ground	N range switch	Input	Ignition switch ON	Selector lever: "N" position 10 – 16 V
				Other than the above	0 V
6 (G)	Ground	R range switch	Input	Ignition switch ON	Selector lever: "R" position 10 – 16 V
				Other than the above	0 V
7 (V)	Ground	P range switch	Input	Ignition switch ON	Selector lever: "P" position 10 – 16 V
				Other than the above	0 V
11 (LG)	Ground	Sensor ground	Input	Always	0 V
12 (BR)	Ground	CVT fluid temperature sensor	Output	Ignition switch ON	CVT fluid: Approx. 20°C (68°F) 2.01 – 2.05 V
				Ignition switch ON	CVT fluid: Approx. 50°C (122°F) 1.45 – 1.50 V
				Ignition switch ON	CVT fluid: Approx. 80°C (176°F) 0.90 – 0.94 V
16 (SB)	Ground	Secondary pressure sensor	Input	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	1.23 – 1.25 V
17 (R)	Ground	Primary pressure sensor	Input	<ul style="list-style-type: none"> <li>• After engine warm up</li> <li>• Selector lever: "N" position</li> <li>• At idle</li> </ul>	0.75 – 0.82 V
23 (P)	—	CAN-L	Input/ Output	—	—
24 (LG)	Ground	Input speed sensor	Input	<ul style="list-style-type: none"> <li>• Shift position: "L" position</li> <li>• Vehicle speed: 20 km/h (12 MPH)</li> </ul>	<div style="text-align: center;"> <p>880 Hz 1mSec/div</p> <p>5V/div JSDIA3769GB</p> </div>
26 (BG)	Ground	Sensor power supply	Output	Ignition switch: ON	5.0 V
				Ignition switch: OFF	0 V



# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

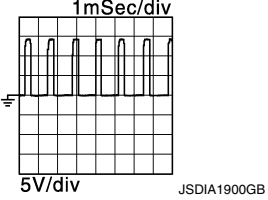
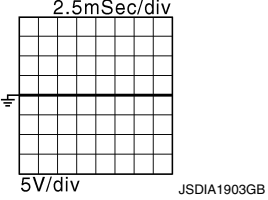
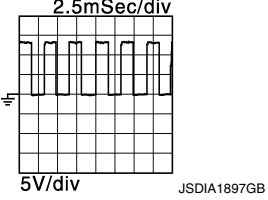
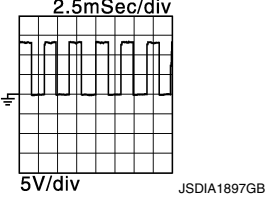
Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal	Input/ Output		
30 (GR)	Ground	Line pressure solenoid valve	Output	<ul style="list-style-type: none"> <li>After engine warming up</li> <li>Selector lever: "N" position</li> <li>At idle</li> </ul>	 <p style="text-align: right; font-size: small;">JSDIA1897GB</p>
				<ul style="list-style-type: none"> <li>After engine warming up</li> <li>Selector lever: "N" position</li> <li>Depress the accelerator pedal fully</li> </ul>	 <p style="text-align: right; font-size: small;">JSDIA1898GB</p>
33 (L)	—	CAN-H	Input/ Output	—	—
34 (W)	Ground	Output speed sensor	Input	<ul style="list-style-type: none"> <li>Shift position: "L" position</li> <li>Vehicle speed: 20 km/h (12 MPH)</li> </ul>	<p style="text-align: center;">200 Hz</p>  <p style="text-align: right; font-size: small;">JSDIA1904GB</p>
35 (GR)	Ground	Primary speed sensor	Input	<ul style="list-style-type: none"> <li>Shift position: "L" position</li> <li>Vehicle speed: 20 km/h (12 MPH)</li> </ul>	<p style="text-align: center;">700 Hz</p>  <p style="text-align: right; font-size: small;">JSDIA1905GB</p>
37 (Y)	Ground	Select solenoid valve	Output	<ul style="list-style-type: none"> <li>Engine started</li> <li>Vehicle is stopped</li> <li>Selector lever: "N" position</li> </ul>	 <p style="text-align: right; font-size: small;">JSDIA1897GB</p>

A  
B  
C  
TM  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	-	Signal	Input/ Output		
38 (G)	Ground	Torque converter clutch solenoid valve	Output	<ul style="list-style-type: none"> <li>• Selector lever: "D" position</li> <li>• Accelerator pedal position: 1/8 or less</li> <li>• Vehicle speed: 20 km/h (12 MPH) or more</li> </ul>	
				<ul style="list-style-type: none"> <li>• Engine started</li> <li>• Vehicle is stopped</li> </ul>	
39 (W)	Ground	Secondary pressure solenoid valve	Output	<ul style="list-style-type: none"> <li>• Shift position: "L" position</li> <li>• Vehicle speed: 20 km/h (12 MPH)</li> </ul>	
40 (V)	Ground	Primary pressure solenoid valve	Output	<ul style="list-style-type: none"> <li>• Shift position: "L" position</li> <li>• Vehicle speed: 20 km/h (12 MPH)</li> </ul>	
41 (B)	Ground	Ground	Output	Always	0 V
42 (B)	Ground	Ground	Output	Always	0 V
45 (V)	Ground	Battery power supply (Memory back-up)	Input	Always	10 – 16 V
46 (V)	Ground	Battery power supply (Memory back-up)	Input	Always	10 – 16 V
47 (BG)	Ground	Ignition power supply	Input	Ignition switch: ON	10 – 16 V
				Ignition switch: OFF	0 V
48 (BG)	Ground	Ignition power supply	Input	Ignition switch: ON	10 – 16 V
				Ignition switch: OFF	0 V

## Fail-safe

INFOID:000000012428076

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	—	A
P0705	<ul style="list-style-type: none"> <li>• Shift position indicator on combination meter is not displayed</li> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	B C
P0706	<ul style="list-style-type: none"> <li>• Shift position indicator on combination meter is not displayed</li> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	TM
P0711	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	E
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: $-35^{\circ}\text{C}$ (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	F
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine star: Temp. $< -35^{\circ}\text{C}$ (-31°F)	G
P0712	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	H
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: $-35^{\circ}\text{C}$ (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	I
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine star: Temp. $< -35^{\circ}\text{C}$ (-31°F)	J
P0713	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: Temp. $\geq 10^{\circ}\text{C}$ (50°F)	K
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine start: $-35^{\circ}\text{C}$ (-31°F) $\leq$ Temp. $< 10^{\circ}\text{C}$ (50°F)	L
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> </ul>	Engine coolant temperature when engine star: Temp. $< -35^{\circ}\text{C}$ (-31°F)	
P0715	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	M
P0717	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	N
P0740	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	O
P0743	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	P
P0744	<ul style="list-style-type: none"> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—	

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

DTC	Vehicle behavior	Conditions of vehicle
P0746	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0776	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> <li>• Vehicle speed is not increased</li> </ul>	When a malfunction occurs on the low oil pressure side
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	When a malfunction occurs on the high oil pressure side
P0778	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0779	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
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	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0890	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> <li>• Vehicle speed is not increased</li> </ul>	—
P0962	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0963	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0965	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	When a malfunction occurs on the low oil pressure side
	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Lock-up is not performed</li> </ul>	When a malfunction occurs on the high oil pressure side
P0966	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—
P0967	<ul style="list-style-type: none"> <li>• Selector shock is large</li> <li>• Start is slow</li> <li>• Acceleration is slow</li> <li>• Lock-up is not performed</li> </ul>	—

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

DTC	Vehicle behavior	Conditions of vehicle
P2765	<ul style="list-style-type: none"> <li>Start is slow</li> <li>Acceleration is slow</li> <li>Lock-up is not performed</li> </ul>	—
P2813	<ul style="list-style-type: none"> <li>Selector shock is large</li> <li>Start is slow</li> <li>Acceleration is slow</li> <li>Vehicle speed is not increased</li> </ul>	When a malfunction occurs on the low oil pressure side
	<ul style="list-style-type: none"> <li>Selector shock is large</li> </ul>	When a malfunction occurs on the high oil pressure side
P2814	Selector shock is large	—
P2815	Selector shock is large	—
U0073	<ul style="list-style-type: none"> <li>Selector shock is large</li> <li>Start is slow</li> <li>Acceleration is slow</li> <li>Lock-up is not performed</li> </ul>	—
U0100	<ul style="list-style-type: none"> <li>Selector shock is large</li> <li>Start is slow</li> <li>Acceleration is slow</li> <li>Lock-up is not performed</li> </ul>	—
U0102	Not changed from normal driving	—
U0140	Not changed from normal driving	—
U0141	Not changed from normal driving	—
U0155	Not changed from normal driving	—
U0300	<ul style="list-style-type: none"> <li>Selector shock is large</li> <li>Start is slow</li> <li>Acceleration is slow</li> <li>Lock-up is not performed</li> </ul>	—
U1000	Not changed from normal driving	—
U110F	Not changed from normal driving	—
U1111	Not changed from normal driving	—
U1117	Not changed from normal driving	—

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## Protection Control

INFOID:000000012428077

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

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

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:0000000012428078

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)	<a href="#">TM-153, "DTC Description"</a>
	U0073	COMM BUS A OFF	<a href="#">TM-94, "DTC Description"</a>
	U0100	LOST COMM (ECM A)	<a href="#">TM-95, "DTC Description"</a>
	U0102	LOST COMM (TRANSFER)	<a href="#">TM-96, "DTC Description"</a>
	U0140	LOST COMM (BCM)	<a href="#">TM-97, "DTC Description"</a>
	U0141	LOST COMM (BCM A)	<a href="#">TM-98, "DTC Description"</a>
	U0155	LOST COMM (IPC)	<a href="#">TM-99, "DTC Description"</a>
	U0300	CAN COMM DATA	<a href="#">TM-100, "DTC Description"</a>
	U1000	CAN COMM CIRC	<a href="#">TM-101, "DTC Description"</a>
	U110F	LOST COMM (ECM)	<a href="#">TM-102, "DTC Description"</a>
	U1111	LOST COMM (CHASSIS CONT MDUL)	<a href="#">TM-103, "DTC Description"</a>
	U1117	LOST COMM (ABS)	<a href="#">TM-104, "DTC Description"</a>
2	P0740	TORQUE CONVERTER	<a href="#">TM-130, "DTC Description"</a>
	P0743	TORQUE CONVERTER	<a href="#">TM-132, "DTC Description"</a>
	P0778	PC SOLENOID B	<a href="#">TM-140, "DTC Description"</a>
	P0779	PC SOLENOID B	<a href="#">TM-142, "DTC Description"</a>
	P0962	PC SOLENOID A	<a href="#">TM-156, "DTC Description"</a>
	P0963	PC SOLENOID A	<a href="#">TM-158, "DTC Description"</a>
	P0966	PC SOLENOID B	<a href="#">TM-162, "DTC Description"</a>
	P0967	PC SOLENOID B	<a href="#">TM-164, "DTC Description"</a>
	P2814	SELECT SOLENOID	<a href="#">TM-171, "DTC Description"</a>
P2815	SELECT SOLENOID	<a href="#">TM-173, "DTC Description"</a>	

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

Priority	DTC	Items (CONSULT screen terms)	Reference
3	P062F	EEPROM	<a href="#">TM-105, "DTC Description"</a>
	P0705	T/M RANGE SENSOR A	<a href="#">TM-106, "DTC Description"</a>
	P0706	T/M RANGE SENSOR A	<a href="#">TM-112, "DTC Description"</a>
	P0711	FLUID TEMP SENSOR A	<a href="#">TM-115, "DTC Description"</a>
	P0712	FLUID TEMP SENSOR A	<a href="#">TM-120, "DTC Description"</a>
	P0713	FLUID TEMP SENSOR A	<a href="#">TM-122, "DTC Description"</a>
	P0715	INPUT SPEED SENSOR A	<a href="#">TM-124, "DTC Description"</a>
	P0717	INPUT SPEED SENSOR A	<a href="#">TM-127, "DTC Description"</a>
	P0841	FLUID PRESS SEN/SW A	<a href="#">TM-144, "DTC Description"</a>
	P0847	FLUID PRESS SEN/SW B	<a href="#">TM-145, "DTC Description"</a>
	P0848	FLUID PRESS SEN/SW B	<a href="#">TM-147, "DTC Description"</a>
	P084C	FLUID PRESS SEN/SW H	<a href="#">TM-149, "DTC Description"</a>
	P084D	FLUID PRESS SEN/SW H	<a href="#">TM-151, "DTC Description"</a>
	P0890	TCM	<a href="#">TM-154, "DTC Description"</a>
	P2765	INPUT SPEED SENSOR B	<a href="#">TM-166, "DTC Description"</a>
4	P0744	TORQUE CONVERTER	<a href="#">TM-134, "DTC Description"</a>
	P0746	PC SOLENOID A	<a href="#">TM-136, "DTC Description"</a>
	P0776	PC SOLENOID B	<a href="#">TM-138, "DTC Description"</a>
	P0965	PC SOLENOID B	<a href="#">TM-160, "DTC Description"</a>
	P2813	SELECT SOLENOID	<a href="#">TM-169, "DTC Description"</a>

## DTC Index

INFOID:0000000012428079

### NOTE:

- If multiple malfunction codes are detected at the same time, check each code according to the “DTC check priority list”. Refer to [TM-62, "DTC Inspection Priority Chart"](#).
- The ignition counter is displayed in “FFD”. Refer to [TM-47, "CONSULT Function"](#).

DTC*1, *2		Items (CONSULT screen terms)	Trip	MIL *3	Perma- nent DTC group *4	Reference
GST	CONSULT (TRANSMISSION)					
P062F	P062F	EEPROM	1	ON	B	<a href="#">TM-105</a>
P0705	P0705	T/M RANGE SENSOR A	2	ON	B	<a href="#">TM-106</a>
P0706	P0706	T/M RANGE SENSOR A	2	ON	B	<a href="#">TM-112</a>
P0711	P0711	FLUID TEMP SENSOR A	2	ON	A	<a href="#">TM-115</a>
P0712	P0712	FLUID TEMP SENSOR A	2	ON	B	<a href="#">TM-120</a>
P0713	P0713	FLUID TEMP SENSOR A	2	ON	B	<a href="#">TM-122</a>
P0715	P0715	INPUT SPEED SENSOR A	2	ON	B	<a href="#">TM-124</a>
P0717	P0717	INPUT SPEED SENSOR A	2	ON	B	<a href="#">TM-127</a>
P0740	P0740	TORQUE CONVERTER	2	ON	B	<a href="#">TM-130</a>
P0743	P0743	TORQUE CONVERTER	2	ON	B	<a href="#">TM-132</a>
P0744	P0744	TORQUE CONVERTER	2	ON	B	<a href="#">TM-134</a>
P0746	P0746	PC SOLENOID A	2	ON	B	<a href="#">TM-136</a>
P0776	P0776	PC SOLENOID B	2	ON	B	<a href="#">TM-138</a>
P0778	P0778	PC SOLENOID B	2	ON	B	<a href="#">TM-140</a>
P0779	P0779	PC SOLENOID B	2	ON	B	<a href="#">TM-142</a>

# TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10D]

DTC*1, *2		Items (CONSULT screen terms)	Trip	MIL*3	Perma- nent DTC group*4	Reference
GST	CONSULT (TRANSMISSION)					
P0841	P0841	FLUID PRESS SEN/SW A	2	ON	B	<a href="#">TM-144</a>
P0847	P0847	FLUID PRESS SEN/SW B	2	ON	B	<a href="#">TM-145</a>
P0848	P0848	FLUID PRESS SEN/SW B	2	ON	B	<a href="#">TM-147</a>
P084C	P084C	FLUID PRESS SEN/SW H	2	ON	B	<a href="#">TM-149</a>
P084D	P084D	FLUID PRESS SEN/SW H	2	ON	B	<a href="#">TM-151</a>
P0863	P0863	CONTROL UNIT (CAN)	1	ON	B	<a href="#">TM-153</a>
P0890	P0890	TCM	1	ON	B	<a href="#">TM-154</a>
P0962	P0962	PC SOLENOID A	2	ON	B	<a href="#">TM-156</a>
P0963	P0963	PC SOLENOID A	2	ON	B	<a href="#">TM-158</a>
P0965	P0965	PC SOLENOID B	2	ON	B	<a href="#">TM-160</a>
P0966	P0966	PC SOLENOID B	2	ON	B	<a href="#">TM-162</a>
P0967	P0967	PC SOLENOID B	2	ON	B	<a href="#">TM-164</a>
P2765	P2765	INPUT SPEED SENSOR B	2	ON	B	<a href="#">TM-166</a>
P2813	P2813	SELECT SOLENOID	2	ON	B	<a href="#">TM-169</a>
P2814	P2814	SELECT SOLENOID	2	ON	B	<a href="#">TM-171</a>
P2815	P2815	SELECT SOLENOID	2	ON	B	<a href="#">TM-173</a>
U0073	U0073	COMM BUS A OFF	1	ON	B	<a href="#">TM-94</a>
U0100	U0100	LOST COMM (ECM A)	1	ON	B	<a href="#">TM-95</a>
—	U0102	LOST COMM (TRANSFER)	1	—	—	<a href="#">TM-96</a>
—	U0140	LOST COMM (BCM)	1	—	—	<a href="#">TM-97</a>
—	U0141	LOST COMM (BCM A)	1	—	—	<a href="#">TM-98</a>
—	U0155	LOST COMM (IPC)	1	—	—	<a href="#">TM-99</a>
—	U0300	CAN COMM DATA	1	—	—	<a href="#">TM-100</a>
—	U1000	CAN COMM CIRC	1	—	—	<a href="#">TM-101</a>
—	U110F	LOST COMM (ECM)	1	—	—	<a href="#">TM-102</a>
—	U1111	LOST COMM (CHASSIS CONT MDUL)	1	—	—	<a href="#">TM-103</a>
—	U1117	LOST COMM (ABS)	1	—	—	<a href="#">TM-104</a>

\*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-45. "DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp \(MIL\)"](#).

\*4: Refer to [TM-93. "Description"](#).



# CVT CONTROL SYSTEM

< WIRING DIAGRAM >

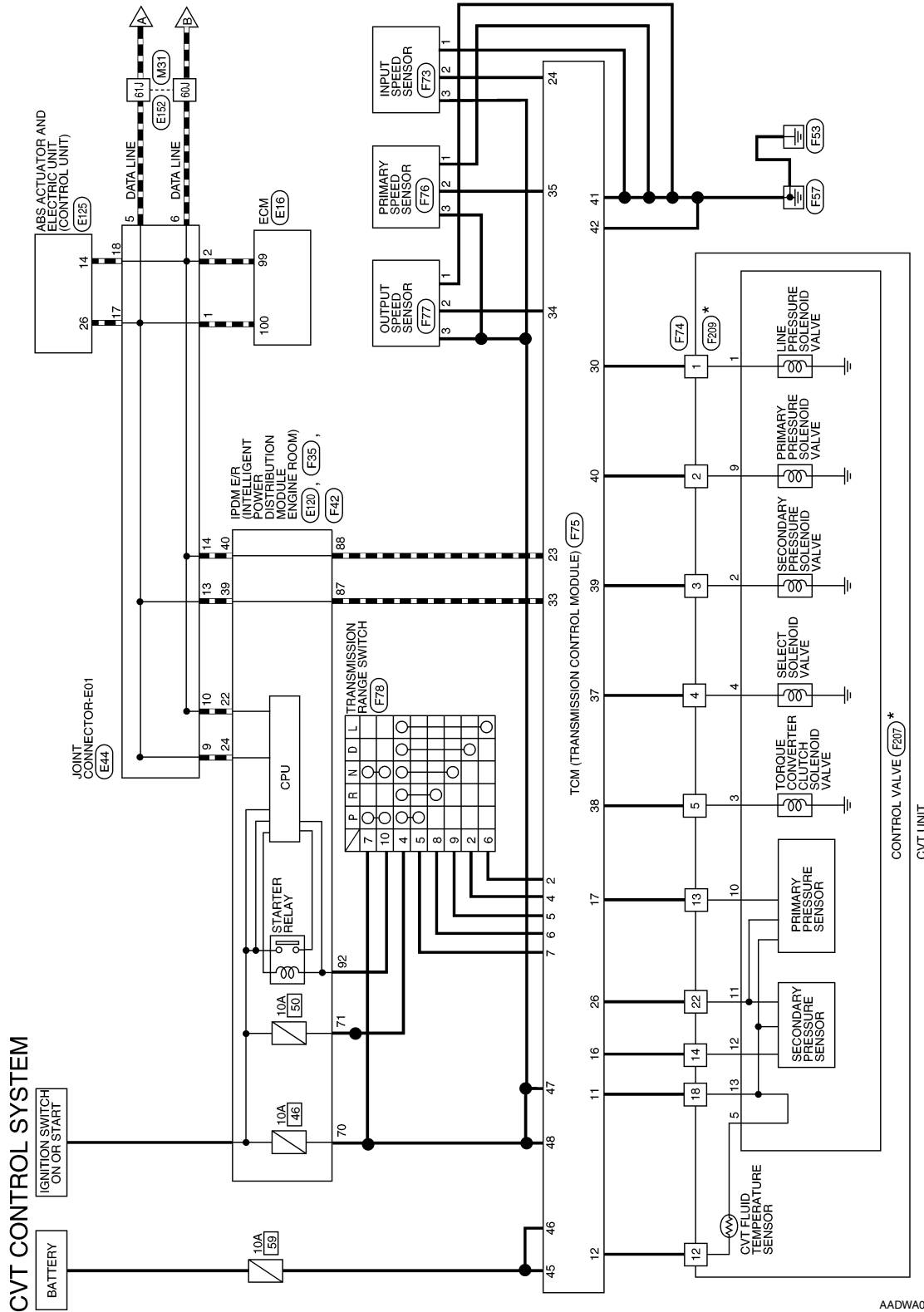
[CVT: RE0F10D]

## WIRING DIAGRAM

### CVT CONTROL SYSTEM

#### Wiring Diagram

INFOID:000000012428080



\*: THIS CONNECTOR IS NOT SHOWN IN "HARNES LAYOUT" OF PG SECTION.

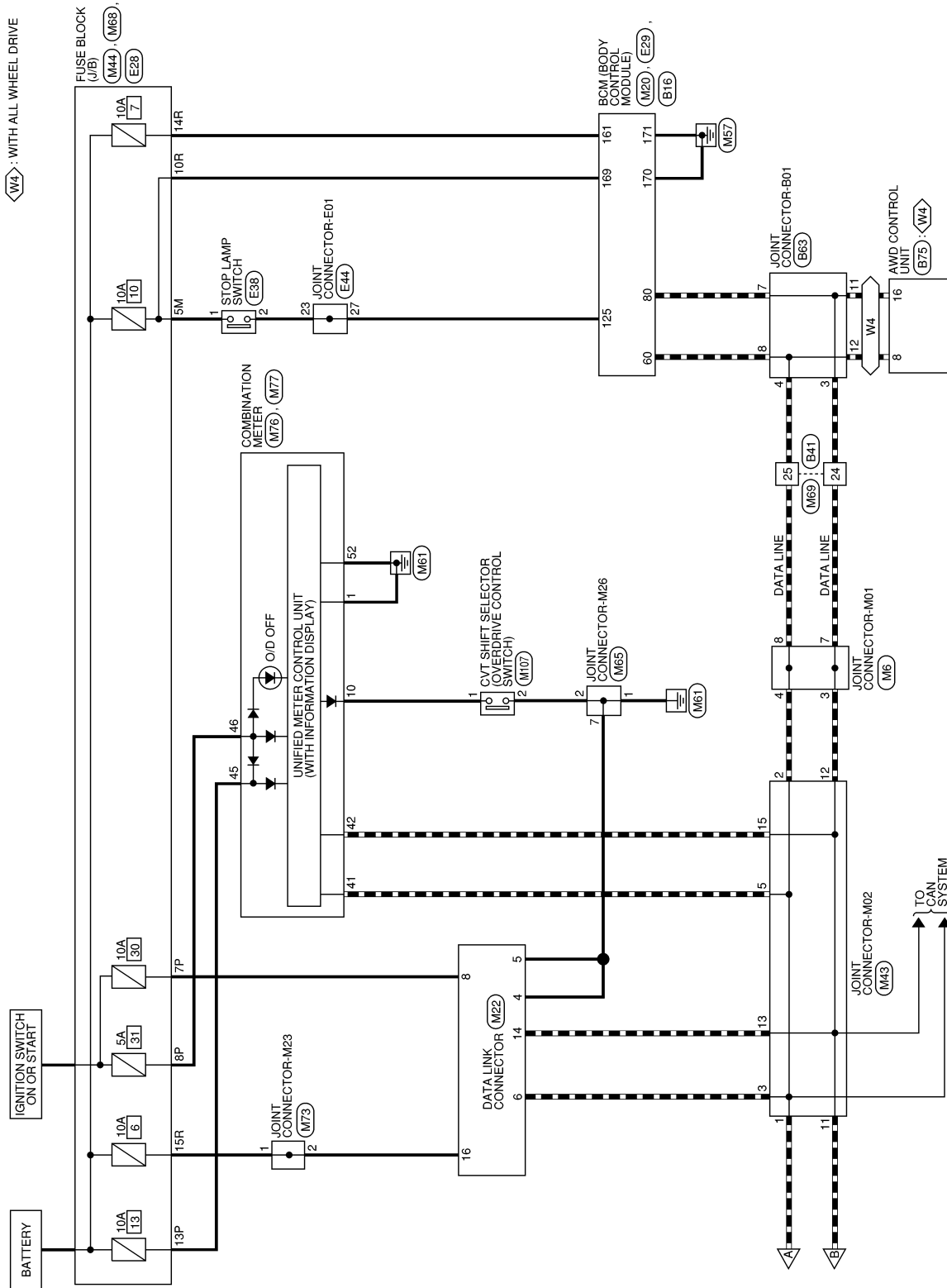
AADWA0346GB

A  
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C  
TM  
E  
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G  
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J  
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M  
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# CVT CONTROL SYSTEM

< WIRING DIAGRAM >

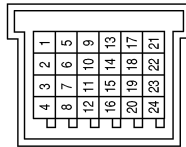
[CVT: RE0F10D]



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CVT CONTROL SYSTEM CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Color	GRAY



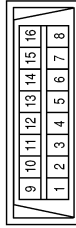
Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BROWN



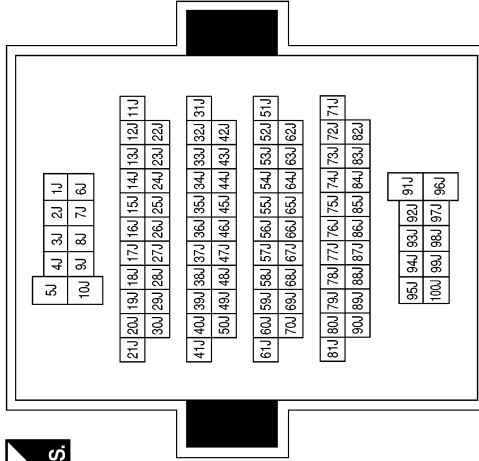
Terminal No.	Color of Wire	Signal Name
161	W	I PWR ECU
169	GR	I PWR STOP LAMP
170	B	I GND1
171	B	I GND2

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



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

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



Terminal No.	Color of Wire	Signal Name
60J	P	-
61J	L	-

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# CVT CONTROL SYSTEM

< WIRING DIAGRAM >

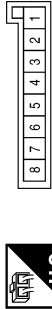
[CVT: RE0F10D]

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
7P	Y	-
8P	LA/BR	-
13P	LA/G	-

Connector No.	M65
Connector Name	JOINT CONNECTOR-M26
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	B	-
2	B	-
7	B	-

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



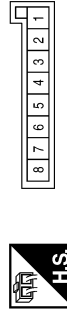
Terminal No.	Color of Wire	Signal Name
10R	GR	-
14R	W	-
15R	W	-

Connector No.	M69
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

Connector No.	M73
Connector Name	JOINT CONNECTOR-M23
Connector Color	WHITE



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

Connector No.	M76
Connector Name	COMBINATION METER
Connector Color	WHITE



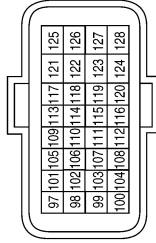
Terminal No.	Color of Wire	Signal Name
1	B	GND
10	P	O/D OFF SW

# CVT CONTROL SYSTEM

< WIRING DIAGRAM >

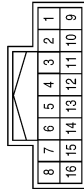
[CVT: RE0F10D]

Connector No.	E16
Connector Name	ECM
Connector Color	BLACK



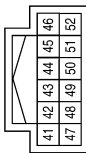
Terminal No.	Color of Wire	Signal Name
99	P	CAN-L
100	L	CAN-H

Connector No.	M107
Connector Name	CVT SHIFT SELECTOR (OVERDRIVE CONTROL SWITCH)
Connector Color	WHITE



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

Connector No.	M77
Connector Name	COMBINATION METER
Connector Color	WHITE



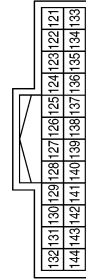
Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
45	LA/G	BAT
46	LA/BR	IGN
52	B	G1

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



Terminal No.	Color of Wire	Signal Name
1	V	-
2	LG	-

Connector No.	E29
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
125	LG	I BRAKE SW2

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



Terminal No.	Color of Wire	Signal Name
5M	V	-

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L  
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O  
P

# CVT CONTROL SYSTEM

< WIRING DIAGRAM >

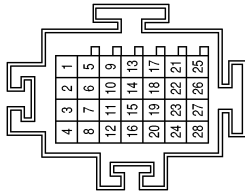
[CVT: RE0F10D]

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



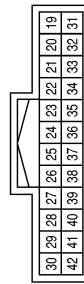
Terminal No.	Color of Wire	Signal Name
1	V	-
2	LG	-

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



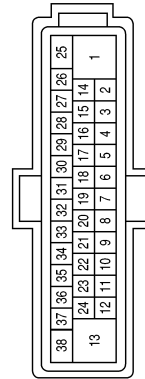
Terminal No.	Color of Wire	Signal Name
1	L	-
2	P	-
5	L	-
6	P	-
9	L	-
10	P	-
13	L	-
14	P	-
17	L	-
18	P	-
23	LG	-
27	LG	-

Connector No.	E120
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	GRAY



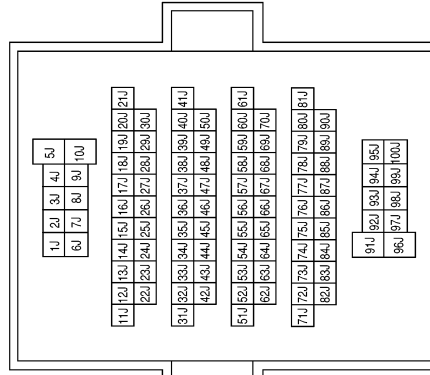
Terminal No.	Color of Wire	Signal Name
22	P	CAN-L
24	L	CAN-H
39	L	CAN-H
40	P	CAN-L

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
14	P	CAN-L
26	L	CAN-H

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



Terminal No.	Color of Wire	Signal Name
60J	P	-
61J	L	-

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# CVT CONTROL SYSTEM

< WIRING DIAGRAM >

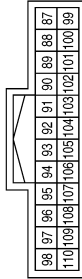
[CVT: RE0F10D]

Connector No.	F73
Connector Name	INPUT SPEED SENSOR
Connector Color	BLACK



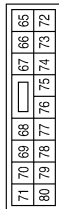
Terminal No.	Color of Wire	Signal Name
1	GR	-
2	LG	-
3	BR	-

Connector No.	F42
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



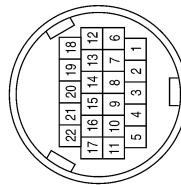
Terminal No.	Color of Wire	Signal Name
87	L	CAN-H
88	P	CAN-L
92	GR	LI NP SW

Connector No.	F35
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
70	BG	OIGN AT LPG
71	SB	OIGN REVERSE SW AC VALVE

Connector No.	F74
Connector Name	CVT UNIT
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
1	GR	-
2	V	-
3	W	-
4	Y	-
5	G	-
6	-	-
7	-	-

Terminal No.	Color of Wire	Signal Name
8	-	-
9	-	-
10	-	-
11	-	-
12	BR	-
13	R	-
14	SB	-
15	-	-
16	-	-
17	-	-
18	LG	-
19	-	-
20	-	-
21	-	-
22	BG	-

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K  
L  
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P

# CVT CONTROL SYSTEM

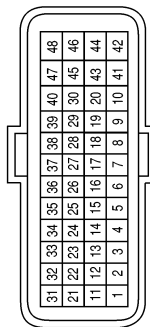
< WIRING DIAGRAM >

[CVT: RE0F10D]

Terminal No.	Color of Wire	Signal Name
35	GR	PRI SPEED SENS
36	-	-
37	Y	SELECT SOL VALVE
38	G	TCC SOL VALVE
39	W	SEC PRESS SOL VALVE
40	V	PRI PRESS SOL VALVE
41	B	GND
42	B	GND
43	-	-
44	-	-
45	V	BATT
46	V	BATT
47	BG	VIGN
48	BG	VIGN

Terminal No.	Color of Wire	Signal Name
13	-	-
14	-	-
15	-	-
16	SB	SEC PRESS SENS
17	R	PRI PRESS SENS
18	-	-
19	-	-
20	-	-
21	-	-
22	-	-
23	P	CAN-L
24	LG	INPUT SPEED SENS
25	-	-
26	BG	SENS PWR SUPPLY
27	-	-
28	-	-
29	-	-
30	GR	LINE PRESS SOL VALVE
31	-	-
32	-	-
33	L	CAN-H
34	W	OUTPUT SPEED SENS

Connector No.	F75
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	-	-
2	GR	L RANGE SW
3	-	-
4	Y	D RANGE SW
5	BR	N RANGE SW
6	G	R RANGE SW
7	V	P RANGE SW
8	-	-
9	-	-
10	-	-
11	LG	SENSOR GND
12	BR	CVT FLUID TEMP SENS

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# CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10D]

Connector No.	F76
Connector Name	PRIMARY SPEED SENSOR
Connector Color	BLACK



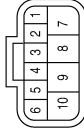
Terminal No.	Color of Wire	Signal Name
1	B	-
2	GR	-
3	BR	-

Connector No.	F77
Connector Name	OUTPUT SPEED SENSOR
Connector Color	BLACK



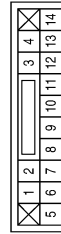
Terminal No.	Color of Wire	Signal Name
1	GR	-
2	W	-
3	BG	-

Connector No.	F78
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	-	-
2	Y	-
3	-	-
4	W	-
5	V	-
6	GR	-
7	BG	-
8	G	-
9	BR	-
10	GR	-

Connector No.	F207
Connector Name	CONTROL VALVE
Connector Color	-



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

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

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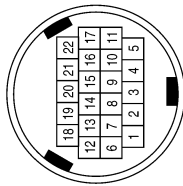
A  
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**TM**  
E  
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G  
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J  
K  
L  
M  
N  
O  
P

# CVT CONTROL SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10D]

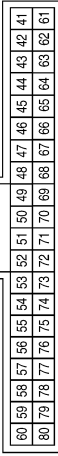
Connector No.	F209
Connector Name	CVT UNIT
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	GR	-
2	O	-
3	BR	-
4	P	-
5	Y	-
6	-	-

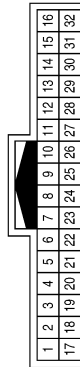
Terminal No.	Color of Wire	Signal Name
7	-	-
8	-	-
9	-	-
10	-	-
11	-	-
12	B	-
13	L	-
14	R	-
15	-	-
16	-	-
17	-	-
18	B/Y	-
19	-	-
20	-	-
21	-	-
22	W	-

Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	GREEN



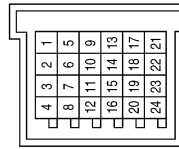
Terminal No.	Color of Wire	Signal Name
60	L	CAN-H
80	P	CAN-L

Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Color	WHITE



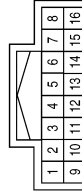
Terminal No.	Color of Wire	Signal Name
24	P	-
25	L	-

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Color	GRAY



Terminal No.	Color of Wire	Signal Name
3	P	-
4	L	-
7	P	-
8	L	-
11	P	-
12	L	-

Connector No.	B75
Connector Name	AWD CONTROL UNIT
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
8	L	CAN-H
16	P	CAN-L

# CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10D]

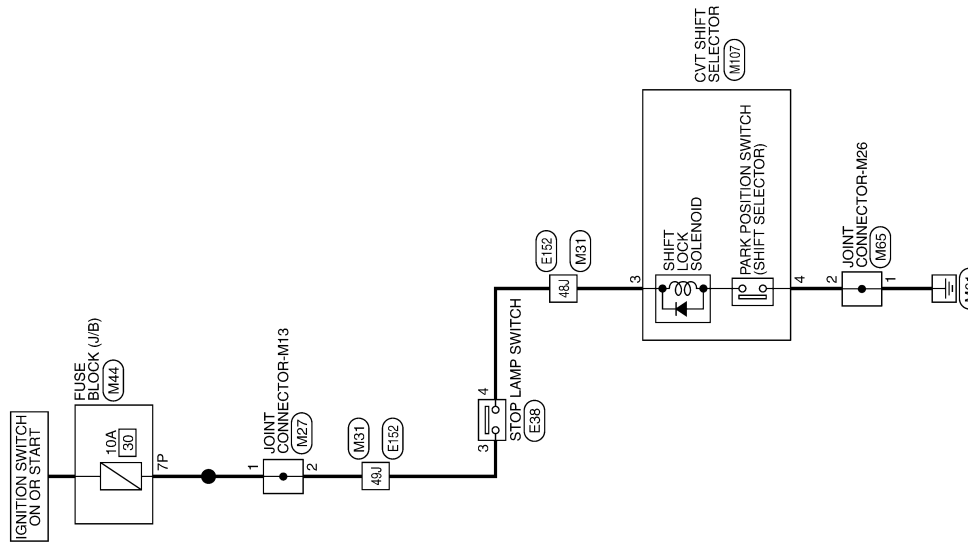
## CVT SHIFT LOCK SYSTEM

Wiring Diagram

INFOID:000000012428081

A  
B  
C  
TM  
E  
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G  
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I  
J  
K  
L  
M  
N  
O  
P

CVT SHIFT LOCK SYSTEM



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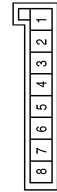
# CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10D]

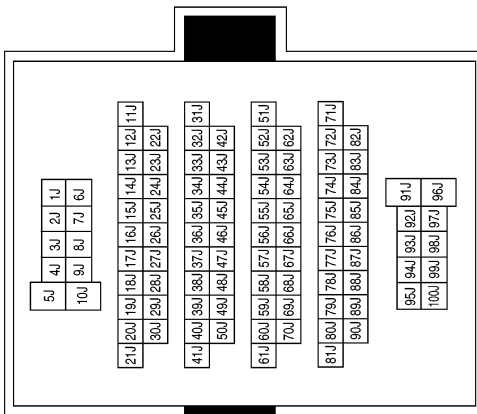
## CVT SHIFT LOCK SYSTEM CONNECTORS

Connector No.	M27
Connector Name	JOINT CONNECTOR-M13
Connector Color	WHITE



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

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



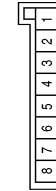
Terminal No.	Color of Wire	Signal Name
48J	R	-
49J	SB	-

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



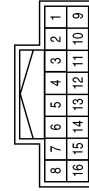
Terminal No.	Color of Wire	Signal Name
7P	Y	-

Connector No.	M65
Connector Name	JOINT CONNECTOR-M26
Connector Color	WHITE



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

Connector No.	M107
Connector Name	CVT SHIFT SELECTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	R	-
4	B	-

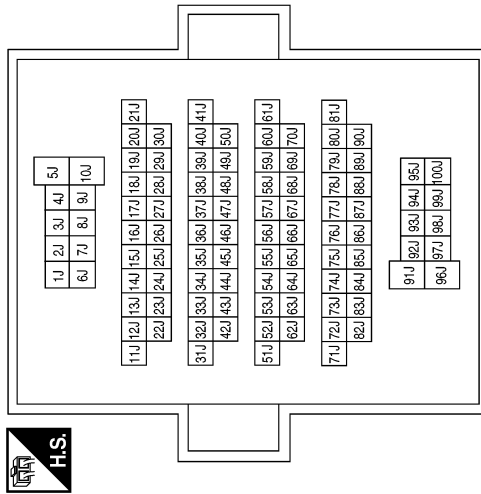
# CVT SHIFT LOCK SYSTEM

< WIRING DIAGRAM >

[CVT: RE0F10D]

Terminal No.	Color of Wire	Signal Name
48J	W	-
49J	L	-

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



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



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

A  
B  
C  
TM  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

## BASIC INSPECTION

### DIAGNOSIS AND REPAIR WORK FLOW

#### Work Flow

INFOID:000000012428082

**NOTE:**

"DTC" includes DTC at the 1st trip.

#### 1.OBTAIN INFORMATION ABOUT SYMPTOM

Refer to [TM-79, "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-185, "Symptom Table"](#) can be used effectively.
3. Check the relevant information including STI, etc.

Do malfunction information and DTC exists?

Malfunction information and DTC exists.>>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-58, "Fail-safe"](#).

Interview sheet can be used effectively when reproduce malfunction conditions. Refer to [TM-79, "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-58, "Fail-safe"](#).

Interview sheet can be used effectively when reproduce malfunction conditions. Refer to [TM-79, "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-62, "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-45, "Intermittent Incident"](#) to check.

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

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[CVT: RE0F10D]

Use [TM-185, "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:0000000012428083

### 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		<input type="checkbox"/> Vehicle does not start. ( <input type="checkbox"/> R position <input type="checkbox"/> D position <input type="checkbox"/> L position) <input type="checkbox"/> Upshifting does not occur. <input type="checkbox"/> Downshifting does not occur. <input type="checkbox"/> Lock-up malfunction <input type="checkbox"/> Shift point is too high. <input type="checkbox"/> Shift point is too low. <input type="checkbox"/> Shift shock ( <input type="checkbox"/> N⇒D <input type="checkbox"/> Lock-up <input type="checkbox"/> R, D, and L) <input type="checkbox"/> Slip ( <input type="checkbox"/> N⇒D <input type="checkbox"/> Lock-up <input type="checkbox"/> R, D, and L) <input type="checkbox"/> Noise <input type="checkbox"/> Vibration When selector lever position is shifted, shift pattern does not change. <input type="checkbox"/> Other ( )				
First occurrence	<input type="checkbox"/> Recently (as from month of year )					
Frequency of occurrence	<input type="checkbox"/> Always <input type="checkbox"/> Under certain conditions <input type="checkbox"/> Sometimes ( time(s)/day)					

# DIAGNOSIS AND REPAIR WORK FLOW

< BASIC INSPECTION >

[CVT: RE0F10D]

## 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		<input type="checkbox"/> Clear <input type="checkbox"/> Cloud <input type="checkbox"/> Rain <input type="checkbox"/> Snow <input type="checkbox"/> Others    )			
Temperature		<input type="checkbox"/> Hot <input type="checkbox"/> Warm <input type="checkbox"/> Cool <input type="checkbox"/> Cold <input type="checkbox"/> Temperature (Approx. °C/°F)			
Relative humidity		<input type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low			
Transaxle condition		<input type="checkbox"/> In cold-start <input type="checkbox"/> During warm-up (approx. °C/°F) <input type="checkbox"/> After warm-up <input type="checkbox"/> Engine speed:                  rpm			
Road conditions		<input type="checkbox"/> Urban area <input type="checkbox"/> Suburb area <input type="checkbox"/> Highway <input type="checkbox"/> Mountainous road (uphill or downhill)			
Operating condition, etc.		Irrelevant <input type="checkbox"/> When engine starts <input type="checkbox"/> During idling <input type="checkbox"/> During driving <input type="checkbox"/> During acceleration <input type="checkbox"/> At constant speed driving <input type="checkbox"/> During deceleration <input type="checkbox"/> During cornering (RH curve or LH curve)			
Other conditions					



# ADDITIONAL SERVICE WHEN REPLACING TCM

< BASIC INSPECTION >

[CVT: RE0F10D]

## ADDITIONAL SERVICE WHEN REPLACING TCM

### Description

INFOID:0000000012428084

Always perform the following items when the TCM is replaced. For work procedure, refer to [TM-81. "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.**

#### 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:0000000012428085

#### 1. SAVE TCM DATA (IP CHARACTERISTICS VALUE)

##### **NOTE:**

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

##### **With CONSULT**

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. SAVE TCM DATA (VEHICLE SPECIFICATIONS)

##### **With CONSULT**

1. Turn ignition switch OFF.
2. Turn ignition switch ON.
3. Select "Re/programming, Configuration".
4. Select "AT/CVT".

##### **NOTE:**

If "AT/CVT" is not displayed and TCM data cannot be saved on CONSULT, GO TO 3.

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

>> GO TO 3.

#### 3. REPLACE TCM

1. Turn ignition switch OFF and wait for 10 seconds.
2. Replace TCM. Refer to [TM-202. "Removal and Installation"](#).

>> GO TO 4.

#### 4. WRITE TCM DATA (VEHICLE SPECIFICATIONS)

##### **With CONSULT**

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

>> GO TO 5.

#### 5. WRITE TCM DATA (IP CHARACTERISTICS VALUE)

##### **NOTE:**

## ADDITIONAL SERVICE WHEN REPLACING TCM

< BASIC INSPECTION >

[CVT: RE0F10D]

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

Ⓜ **With CONSULT**

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: RE0F10D]

## ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

### Description

INFOID:000000012428086

Perform the following work after the transaxle assembly is replaced. For work procedure, refer to [TM-83](#), "[Work Procedure](#)".

#### 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 write new data in TCM.

#### ERASING OF CVT FLUID DEGRADATION LEVEL DATA

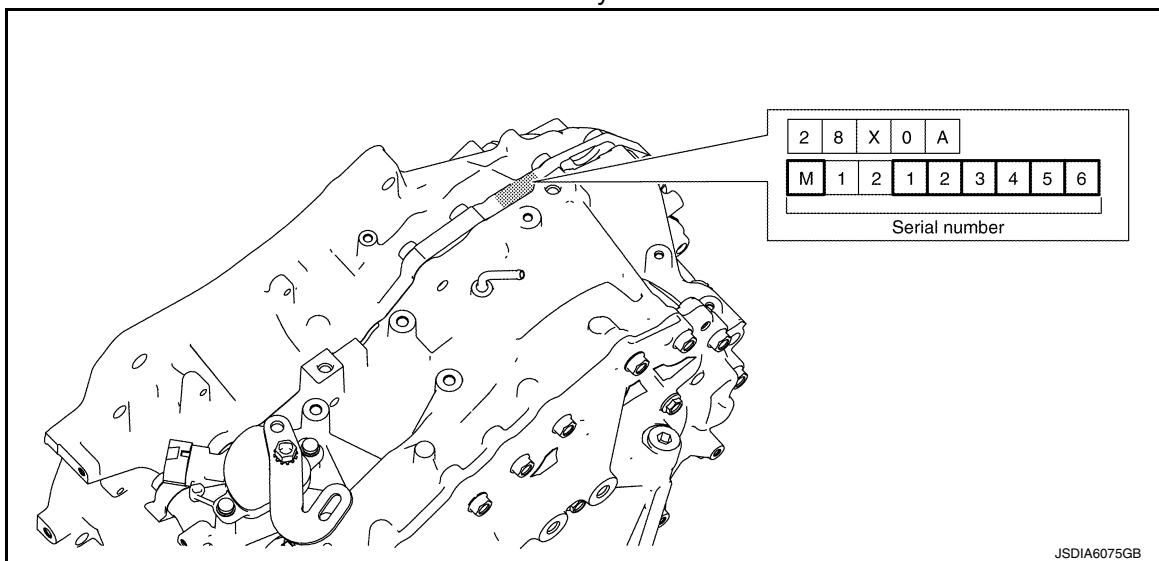
- TCM records the degradation level of the CVT fluid calculated from the vehicle driving status. Therefore, if the transaxle assembly is replaced, it is necessary to erase the CVT fluid degradation level data recorded by TCM.

### Work Procedure

INFOID:000000012428087

#### 1. CHECK THE SERIAL NUMBER

Write down the serial number of new transaxle assembly.



>> GO TO 2.

#### 2. 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.

>> GO TO 3.

## ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F10D]

---

### 3. ERASE CVT FLUID DEGRADATION LEVEL DATA

---

#### With CONSULT

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

>> WORK END

# ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F10D]

## ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY

### Description

INFOID:000000012428088

When replacing TCM and transaxle assembly simultaneously, perform the following work. For work procedure, refer to [TM-85. "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:000000012428089

#### 1. SAVE TCM DATA (VEHICLE SPECIFICATIONS)

##### With CONSULT

1. Turn ignition switch OFF.
2. Turn ignition switch ON.
3. Select "Re/programming, Configuration".
4. Select "AT/CVT".

##### **NOTE:**

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

5. Select "Programming".
6. 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-202. "Removal and Installation"](#) (TCM), [TM-222. "Removal and Installation"](#) (Transaxle assembly).

>> GO TO 3.

#### 3. WRITE TCM DATA (VEHICLE SPECIFICATIONS)

##### With CONSULT

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

>> GO TO 4.

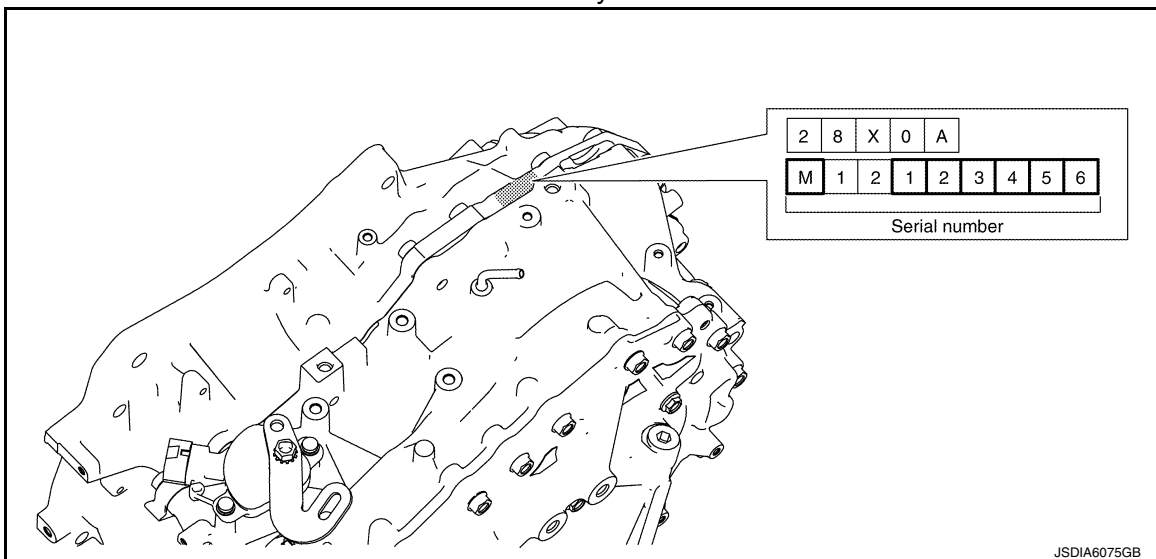
#### 4. CHECK THE SERIAL NUMBER

# ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY

< BASIC INSPECTION >

[CVT: RE0F10D]

Write down the serial number of new transaxle assembly.



>> GO TO 5.

## 5. WRITE TCM DATA (IP CHARACTERISTICS VALUE)

### NOTE:

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

④ 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

## CVT FLUID COOLER SYSTEM

### Cleaning

INFOID:000000012428090

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.

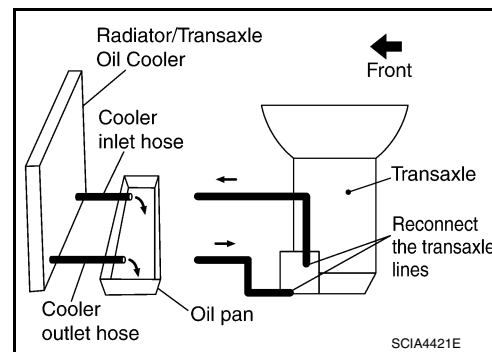
### CVT FLUID COOLER CLEANING PROCEDURE

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.

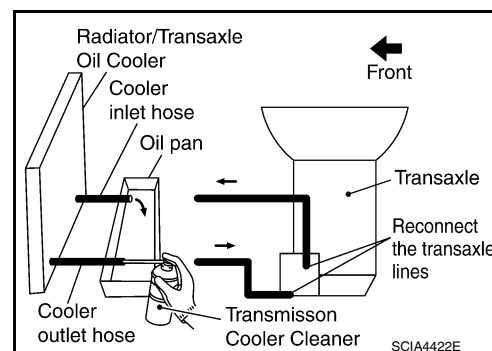


5. Insert the extension adapter hose of a can of Transmission Cooler Cleaner into the cooler outlet hose.

**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/cm<sup>2</sup> (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.

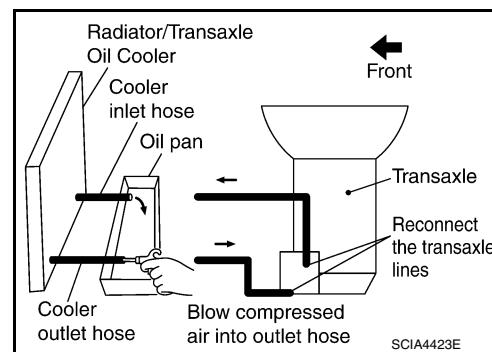
12. Remove the banjo bolts.

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/cm<sup>2</sup> (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: RE0F10D]

17. Perform "CVT FLUID COOLER DIAGNOSIS PROCEDURE".

## CVT FLUID COOLER DIAGNOSIS PROCEDURE

### NOTE:

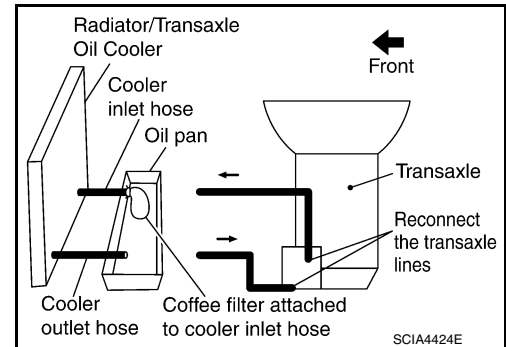
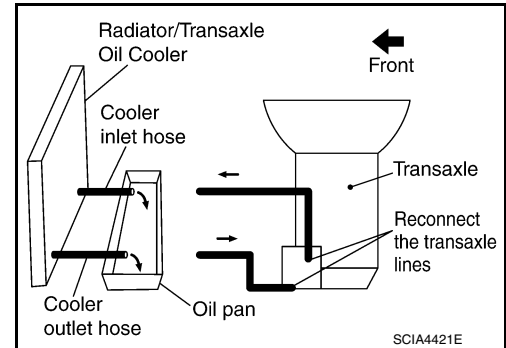
Insufficient cleaning of the cooler inlet hose exterior may lead to inaccurate debris identification.

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 into the cooler outlet hose.

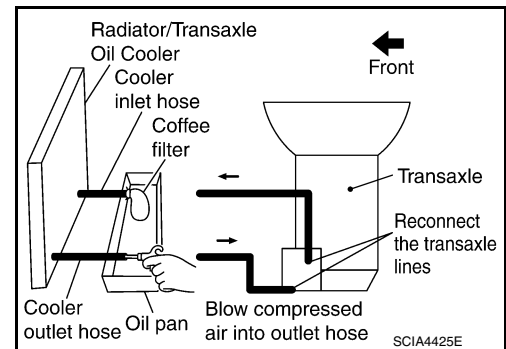
### CAUTION:

- 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.

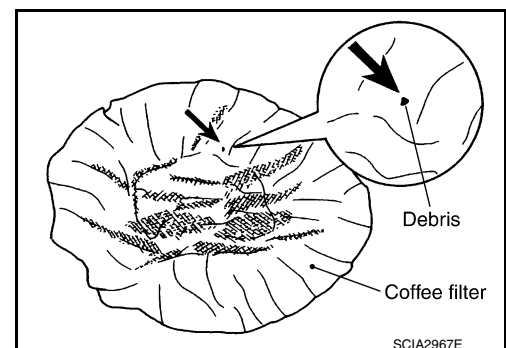


6. Insert the tip of an air gun into the end of the cooler outlet hose.
7. Wrap a shop rag around the air gun tip and end of cooler outlet hose.
8. Blow compressed air regulated to 5 to 9 kg/cm<sup>2</sup> (70 to 130 psi) through the cooler outlet hose to force any remaining CVT fluid into the coffee 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.



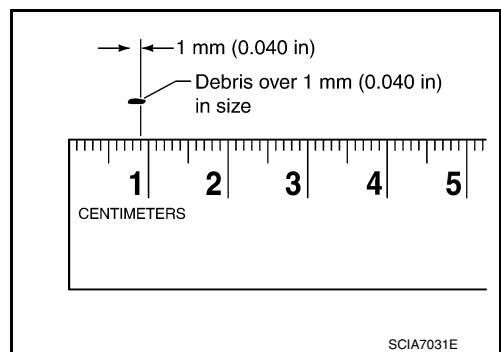


# CVT FLUID COOLER SYSTEM

< BASIC INSPECTION >

[CVT: RE0F10D]

- 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.



A  
B  
C

TM

## CVT FLUID COOLER FINAL INSPECTION

After performing all procedures, ensure that all remaining oil is cleaned from all components.

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# STALL TEST

< BASIC INSPECTION >

[CVT: RE0F10D]

## STALL TEST

### Work Procedure

INFOID:000000012428091

### INSPECTION

1. Check the engine oil level. Replenish if necessary. Refer to [LU-7, "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-228, "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 • Steel 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

< BASIC INSPECTION >

[CVT: RE0F10D]

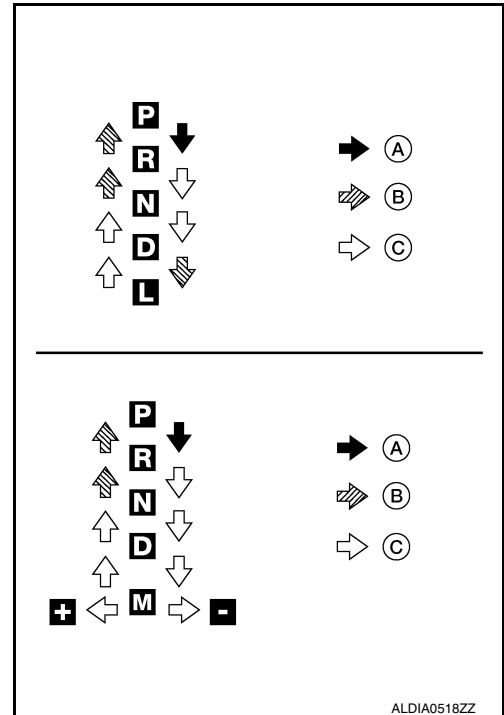
## CVT POSITION

### Inspection

INFOID:000000012428092

- Turn ON the ignition switch with the shift selector at the "P" position.
- 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 position without depressing the brake pedal.
- Move the shift selector and check for "excessive effort", "sticking", "noise" or "rattle".
- Confirm that 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.
- Make sure that the shift selector is moved to all the shift positions in the manner shown.
  - (A): Press shift selector button to operate shift selector, while depressing the brake pedal.
  - (B): Press shift selector button to operate shift selector.
  - (C): Shift selector can be operated without pressing the shift selector button.
- When the shift selector button is pressed without applying forward/backward force to the shift selector at "P", "R", "N", "D", "L" or "M" positions, there should be no "sticking" on the shift selector button operation.
- Check that the back-up lamps do not illuminate when the shift selector is in the "P" position.
 

**CAUTION:**  
Check the lighting without pressing shift button.
- Check that the engine can be started with the shift selector in the "P" and "N" positions only.
- Check that the transaxle is locked completely when the shift selector is in the "P" position.
- The relationship between shift selector, engine starting ability, and shift position indicator lighting should satisfy the conditions of the following table.



Shift selector position	Load direction to the shift selector	Applied load to the shift selector	Engine starting ability	Shift position indicator lighting
P	P (over stroke) ← P → R	29.4 N (3.00 kg, 6.61 lb)	Start	P indicator shall be illuminated
R	P ← R		Not start	R indicator shall be illuminated
N	R ← N		—	Start
D	—	—	Not start	D indicator shall be illuminated
L	—	—	Not start	L indicator shall be illuminated
M	—	—	Not start	M indicator shall be illuminated

### Adjustment

INFOID:000000012428093

- 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.

## CVT POSITION

< BASIC INSPECTION >

[CVT: RE0F10D]

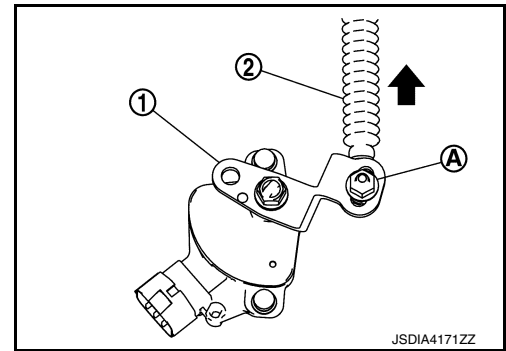
- Loosen nut (A) and set manual lever (1) to the "P" position.  
**CAUTION:**  
**Do not apply force to the manual lever.**
- Hold the control cable (2) and push it to direction of the arrow with a specified force.

**Specified force : 9.8 N (1.0 kg, 2.2 lb)**

- Temporarily tighten the nut with the control cable loose.
- Tighten the nut to the specified torque. Refer to [TM-197](#).  
**"Exploded View".**

**CAUTION:**

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



# HOW TO ERASE PERMANENT DTC

< BASIC INSPECTION >

[CVT: RE0F10D]

## HOW TO ERASE PERMANENT DTC

### Description

INFOID:000000012428094

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-154, "Description"](#).

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# U0073 COMMUNICATION BUS A OFF

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## DTC/CIRCUIT DIAGNOSIS

### U0073 COMMUNICATION BUS A OFF

#### DTC Description

INFOID:000000012428095

#### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U0073	COMM BUS A OFF (Control Module Communication Bus A Off)	TCM communication blockage lasts for 2 seconds or more when turning ON the ignition switch. (Communication not established.)

#### 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-94, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

#### Diagnosis Procedure

INFOID:000000012428096

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

# U0100 LOST COMMUNICATION (ECM A)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U0100 LOST COMMUNICATION (ECM A)

### DTC Description

INFOID:000000012428097

### DTC DETECTION LOGIC

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

### 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-95. "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45. "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428098

For the diagnosis procedure, refer to [LAN-20. "Trouble Diagnosis Flow Chart"](#).

# U0102 LOST COMMUNICATION (TRANSFER)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U0102 LOST COMMUNICATION (TRANSFER)

### DTC Description

INFOID:000000012428099

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U0102	LOST COMM (TRANSFER) (Lost Communication With Transfer Case Control Module)	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.

### 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-103, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428100

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).



# U0140 LOST COMMUNICATION (BCM)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U0140 LOST COMMUNICATION (BCM)

### DTC Description

INFOID:000000012428101

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U0140	LOST COMM (BCM) (Lost Communication With Body Control Module)	When the ignition switch is ON, TCM is unable to receive the CAN communications signal from BCM 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-97, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428102

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

# U0141 LOST COMMUNICATION (BCM A)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U0141 LOST COMMUNICATION (BCM A)

### DTC Description

INFOID:000000012428103

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U0141	LOST COMM (BCM A) (Lost Communication With Body Control Module A)	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.

### 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-98, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428104

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

# U0155 LOST COMMUNICATION (IPC)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U0155 LOST COMMUNICATION (IPC)

### DTC Description

INFOID:000000012428105

### DTC DETECTION LOGIC

DTC	CONSULT screen terms [Trouble diagnosis content]	DTC detection condition
U0155	LOST COMM (IPC) [Lost Communication With Instrument Panel Cluster (IPC) Control Module]	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.

### 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-99, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428106

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

# U0300 CAN COMMUNICATION DATA

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U0300 CAN COMMUNICATION DATA

### DTC Description

INFOID:000000012428107

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U0300	CAN COMM DATA (Internal Control Module Software Incompatibility)	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.

### 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-100, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428108

#### 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".

##### 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.

## U1000 CAN COMM CIRCUIT

### Description

INFOID:000000012428109

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 Description

INFOID:000000012428110

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

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U1000	CAN COMM CIRCUIT (CAN Communication Line)	When the ignition switch is ON, TCM cannot send the CAN communication signal 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-101, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428111

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

# U110F LOST COMMUNICATION (ECM)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U110F LOST COMMUNICATION (ECM)

### DTC Description

INFOID:000000012428112

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U110F	LOST COMM (ECM) (Lost Communication With ECM)	When the ignition switch is ON, TCM is unable to receive the CAN communications signal from ECM continuously for 2 seconds or more.

### POSSIBLE CAUSE

- ECM
- 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 "U110F" detected?

- YES >> Go to [TM-103, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428113

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

# U1111 LOST COMMUNICATION (CHASSIS CONTROL MODULE)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U1111 LOST COMMUNICATION (CHASSIS CONTROL MODULE)

### DTC Description

INFOID:0000000012428114

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U1111	LOST COMM (CHASSIS CONT MDUL) (Lost Communication With Chassis Control Module)	When the ignition switch is ON, TCM is unable to receive the CAN communications signal from chassis control module continuously for 2 seconds or more.

### POSSIBLE CAUSE

- Chassis control module
- 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 "U1111" detected?

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

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:0000000012428115

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).

# U1117 LOST COMMUNICATION (ABS)

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## U1117 LOST COMMUNICATION (ABS)

### DTC Description

INFOID:000000012428116

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
U1117	LOST COMM (ABS) (Lost Communication With ABS)	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.

### 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-104, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428117

For the diagnosis procedure, refer to [LAN-20, "Trouble Diagnosis Flow Chart"](#).



P062F EEPROM

Description

INFOID:0000000012428118

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 Description

INFOID:0000000012428119

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

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P062F	EEPROM (Internal Control Module EEPROM Error)	Flash ROM error is detected when turning ON the ignition switch.

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-105, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000012428120

1. REPLACE TCM

Replace the TCM. Refer to [TM-202, "Removal and Installation"](#).

>> WORK END

# P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0705 TRANSMISSION RANGE SENSOR A

### DTC Description

INFOID:000000012428121

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0705	T/M RANGE SENSOR A [Transmission Range Sensor A Circuit (PRNDL Input)]	When all of the following conditions are satisfied and this state is maintained for 2 seconds: <ul style="list-style-type: none"><li>• Two or more range signals simultaneously stay ON continuously</li><li>• TCM power supply voltage: More than 11 V</li></ul>

### 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 "L". (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-106. "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428122

#### 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", "P POSITION SW" and "L RANGE SW".
4. Shift the selector lever through entire positions from "P" to "L" and check ON/OFF of each monitor item.

Monitor item	Condition	Condition
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

# P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

Monitor item	Condition	Condition
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 RANGE SW	Selector lever: "L" 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 "L" and check voltage between TCM harness connector terminals and ground.

+		-	Condition	Voltage
TCM				
Connector	Terminal			
F75	2	Ground	Selector lever: "L" position	10 – 16 V
			Other than the above	Approx. 0 V
	4		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 >> INSPECTION END

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.

NO-5 ["L POSITION SW" is "ON" when selector is not in "L" position. (Or connector terminal 2 is at power voltage.)]>>GO TO 10.

## 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	
F75	4	2
		5
		6
		7
		Not existed

A  
B  
C  
TM  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

# P0705 TRANSMISSION RANGE SENSOR A

[CVT: RE0F10D]

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

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

## 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		
F75	4	Ground	0 V

Is the inspection result normal?

- YES >> GO TO 12.
- 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		
F75	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		
F75	5	Ground	0 V

Is the inspection result normal?

- YES >> GO TO 12.
- 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: RE0F10D]

TCM		Continuity	
Connector	Terminal		
F75	7	2	Not existed
		4	
		5	
		6	

A  
B  
C

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace malfunctioning parts.

## 7. CHECK P POSITION SW CIRCUIT (PART 2)

TM

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

E  
F

+		-	Voltage (Approx.)
TCM			
Connector	Terminal		
F75	7	Ground	0 V

G

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace malfunctioning parts.

## 8. CHECK R POSITION SW CIRCUIT (PART1)

H  
I

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

J

TCM		Continuity	
Connector	Terminal		
F75	6	2	Not existed
		4	
		5	
		7	

K  
L

Is the inspection result normal?

YES >> GO TO 9.

NO >> Repair or replace malfunctioning parts.

## 9. CHECK R POSITION SW CIRCUIT (PART 2)

M  
N

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

O

+		-	Voltage (Approx.)
TCM			
Connector	Terminal		
F75	6	Ground	0 V

P

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace malfunctioning parts.

# P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## 10. CHECK L POSITION SWITCH CIRCUIT (PART 1)

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

TCM		Continuity	
Connector	Terminal		
F75	2	4	Not existed
		5	
		6	
		7	

Is the inspection result normal?

YES >> GO TO 11.

NO >> Repair or replace malfunctioning parts.

## 11. CHECK L POSITION SWITCH 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		
F75	2	Ground	0 V

Is the inspection result normal?

YES >> GO TO 12.

NO >> Repair or replace malfunctioning parts.

## 12. CHECK TRANSMISSION RANGE SWITCH

Check transmission range switch. Refer to [TM-110, "Component Inspection"](#).

Is the check result normal?

YES >> INSPECTION END

NO >> Repair or replace malfunctioning parts.

## Component Inspection

INFOID:0000000012428123

### 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

# P0705 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

Transmission range switch Terminal	Condition	Continuity
4 - 2	Manual lever: "D" position	Existed
	Other than the above	Not existed
4 - 6	Manual lever: "L" 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-205, "Removal and Installation"](#).

A  
B  
C  
TM  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

# P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0706 TRANSMISSION RANGE SENSOR A

### DTC Description

INFOID:000000012428124

### 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)	When all of the following conditions are satisfied and this state is maintained for 30 seconds: <ul style="list-style-type: none"><li>• All range signals stay OFF</li><li>• TCM power supply voltage: More than 11 V</li></ul>

### 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 "L". (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-112, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428125

#### 1. ADJUSTMENT OF CONTROL CABLE

Adjust control cable. Refer to [TM-196, "Inspection"](#).

>> 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-112, "DTC Description"](#).

Is "P0706" detected?



# P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

- 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	Ground	10 – 16 V
F78	4		

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	
F78	2	F75	4	Existed
	5		7	
	6		2	
	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		
F78	2	Ground	Not existed
	5		
	6		
	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-114, "Component Inspection"](#).

Is the inspection result normal?

- YES >> INSPECTION END

# P0706 TRANSMISSION RANGE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

NO >> Repair or replace malfunctioning parts.

## 7. CHECK CIRCUIT BETWEEN IPDM E/R AND TRANSMISSION RANGE SWITCH

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

IPDM E/R		Transmission range switch		Continuity
Connector	Terminal	Connector	Terminal	
F35	71	F78	4	Existed

Is the check result normal?

YES >> GO TO 8.

NO >> Repair or replace malfunctioning parts.

## 8. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Open circuit or short circuit in harness between ignition switch and IPDM E/R. Refer to [PG-25, "Wiring Diagram — Ignition Power Supply —"](#).
- Short circuit in harness between IPDM E/R harness connector terminal 71 and transmission range switch harness connector terminal 4.
- 10A fuse (No. 50, located in the IPDM E/R). Refer to [PG-70, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

YES >> INSPECTION END

NO >> Repair or replace malfunctioning parts.

## Component Inspection

INFOID:000000012428126

## 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
4 – 6	Manual lever: "L" 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-222, "Removal and Installation"](#).

# P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

### DTC Description

INFOID:000000012428127

### 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)	When any of 1 or 2 is satisfied: 1. Under the following diagnosis conditions, 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). - 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 2. When the condition of the final judgment is satisfied after satisfying that of the provisional judgment: - Provisional judgment: 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. - Final judgment: When all of the following conditions are satisfied and this state is maintained for 300 seconds: • ECM is normal. • Provisional judgment is satisfied.

### POSSIBLE CAUSE

CVT fluid temperature sensor

### FAIL-SAFE

- Engine coolant temperature when engine start: Temp. ≥ 10°C (50°F)
  - Start is slow
  - Acceleration is slow
- Engine coolant temperature when engine start: -35°C (-31°F) ≤ Temp. < 10°C (50°F)
  - Selector shock is large
  - Start is slow
  - Acceleration is slow
- Engine coolant temperature when engine start: Temp. < -35°C (-31°F)
  - Selector shock is large
  - Start is slow
  - Acceleration is slow

### 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. INSPECTION START

# P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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-96. "DTC Index"](#) (ECM), [EC-96. "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-118. "Diagnosis Procedure"](#).
- 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.

# P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## 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-118, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "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.

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

# P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

CVT fluid temperature before engine start	Driving time
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-118, "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-45, "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-222, "Removal and Installation"](#).

## Diagnosis Procedure

INFOID:000000012428128

### 1.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.)
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 >> GO TO 4.

# P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## 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	
F75	11	F74	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		
F75	11	Ground	Not existed
	12		

Is the inspection result normal?

- YES >> INSPECTION END  
NO >> Repair or replace damaged parts.

## 4. CHECK DTC (TCM)

### With CONSULT

1. Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-115, "DTC Description"](#).
2. Select "Self Diagnostic Results" in "TRANSMISSION".

Is "P0711" detected?

- YES >> There is a malfunction of the CVT fluid temperature sensor. Replace the transaxle assembly.  
Refer to [TM-222, "Removal and Installation"](#).  
NO >> INSPECTION END

# P0712 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0712 TRANSMISSION FLUID TEMPERATURE SENSOR A

### DTC Description

INFOID:000000012428129

### 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)	When all of the following conditions are satisfied and this state is maintained for 5 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• Fluid temperature sensor detection voltage: 0.15 V or less</li></ul>

### 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.  $\geq 10^{\circ}\text{C}$  ( $50^{\circ}\text{F}$ )
  - Start is slow
  - Acceleration is slow
- Engine coolant temperature when engine start:  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ )  $\leq$  Temp.  $< 10^{\circ}\text{C}$  ( $50^{\circ}\text{F}$ )
  - Selector shock is large
  - Start is slow
  - Acceleration is slow
- Engine coolant temperature when engine start: Temp.  $< -35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ )
  - 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-120, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428130

#### 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		
F75	12	Ground	Not existed

Is the inspection result normal?

- YES >> GO TO 2.



# P0712 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

NO >> Repair or replace malfunctioning part.

## 2.CHECK CVT UNIT TERMINAL CODE ASSEMBLY

Check continuity between CVT unit connector terminal and ground.

CVT unit		—	Continuity
Connector	Terminal		
F74	12	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> There is a malfunction of the CVT unit terminal code assembly. Replace the transaxle assembly.

Refer to [TM-222, "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 >> INSPECTION END

NO >> There is a malfunction of the CVT fluid temperature sensor. Replace the transaxle assembly.

Refer to [TM-222, "Removal and Installation"](#).

A  
B  
C  
TM  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

# P0713 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0713 TRANSMISSION FLUID TEMPERATURE SENSOR A

### DTC Description

INFOID:000000012428131

### 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)	When all of the following conditions are satisfied and this state is maintained for 5 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• Vehicle speed: More than 10 km/h (7 MPH)</li><li>• Fluid temperature sensor detection voltage: 2.48 V or more</li></ul>

### 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.  $\geq 10^{\circ}\text{C}$  ( $50^{\circ}\text{F}$ )
  - Start is slow
  - Acceleration is slow
- Engine coolant temperature when engine start:  $-35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ )  $\leq$  Temp.  $< 10^{\circ}\text{C}$  ( $50^{\circ}\text{F}$ )
  - Selector shock is large
  - Start is slow
  - Acceleration is slow
- Engine coolant temperature when engine start: Temp.  $< -35^{\circ}\text{C}$  ( $-31^{\circ}\text{F}$ )
  - 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-122, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428132

#### 1. 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.

# P0713 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
F75	11	F74	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		
F75	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 >> INSPECTION END

NO >> There is a malfunction of the CVT fluid temperature sensor. Replace the transaxle assembly.  
Refer to [TM-222. "Removal and Installation"](#).

# P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0715 INPUT SPEED SENSOR A

### DTC Description

INFOID:000000012428133

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0715	INPUT SPEED SENSOR A (Input/Turbine Speed Sensor A Circuit)	When 1 is satisfied and any of 2, 3 or 4 is satisfied: 1. When the following conditions are satisfied: - TCM power supply voltage: More than 11 V - After range change completion, it spends 2 seconds or more. 2. 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 3. 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 4. 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.

### 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

### 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 : 40 km/h (25 MPH) or more

# P0715 INPUT SPEED SENSOR A

[CVT: RE0F10D]

## < DTC/CIRCUIT DIAGNOSIS >

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

Is "P0715" detected?

- YES >> Go to [TM-125, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000012428134

### 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
Connector	Terminal		
F76	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		
F76	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.

Primary speed sensor		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F76	2	F75	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		
F76	2	Ground	Not existed

Is the inspection result normal?

# P0715 INPUT SPEED SENSOR A

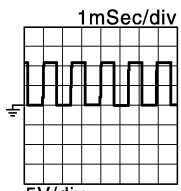
[CVT: RE0F10D]

## < DTC/CIRCUIT DIAGNOSIS >

- 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			
F75	35	Ground	<ul style="list-style-type: none"> <li>• Shift position: "L" position</li> <li>• Vehicle speed: 20 km/h (12 MPH)</li> </ul>	700 Hz  5V/div JSDIA1905GB

#### Is the inspection result normal?

- YES >> INSPECTION END  
 NO >> Replace primary speed sensor. Refer to [TM-208, "Removal and Installation"](#).

### 6. CHECK CIRCUIT BETWEEN IPDM E/R AND PRIMARY SPEED SENSOR

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

IPDM E/R		Primary speed sensor		Continuity
Connector	Terminal	Connector	Terminal	
F35	70	F76	3	Existed

#### Is the check result normal?

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

### 7. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Open circuit or short circuit in harness between ignition switch and IPDM E/R. Refer to [PG-25, "Wiring Diagram — Ignition Power Supply —"](#).
- Short circuit in harness between IPDM E/R harness connector terminal 70 and primary speed sensor harness connector terminal 3.
- 10A fuse (No.46, located in the IPDM E/R). Refer to [PG-70, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

#### Is the check result normal?

- YES >> INSPECTION END  
 NO >> Repair or replace malfunctioning parts.

# P0717 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0717 INPUT SPEED SENSOR A

### DTC Description

INFOID:000000012428135

### 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)	When 1 is satisfied and any of 2, 3 or 4 is satisfied: <ol style="list-style-type: none"> <li>When the following conditions are satisfied:                             <ul style="list-style-type: none"> <li>- TCM power supply voltage: More than 11 V</li> <li>- After range change completion, it spends 2 seconds or more.</li> </ul> </li> <li>When all of the following conditions are satisfied and this state is maintained for 5 seconds:                             <ul style="list-style-type: none"> <li>- Primary pulley speed: 500 rpm or more</li> <li>- Input speed: Less than 150 rpm</li> <li>- Range: Other than P, N</li> <li>- P0715 is not detected</li> </ul> </li> <li>When all of the following conditions are satisfied and this state is maintained for 0.5 seconds:                             <ul style="list-style-type: none"> <li>- 10-msec-ago input speed: 1,000 rpm or more</li> <li>- Now input speed: 0 rpm</li> </ul> </li> <li>When all of the following conditions are satisfied and this state is maintained for 5 seconds:                             <ul style="list-style-type: none"> <li>- Range: D or L</li> <li>- Engine speed: 450 rpm or more</li> <li>- Input speed: 300 rpm or more</li> <li>- Primary pulley speed: 300 rpm or more</li> <li>- Secondary pulley speed: 300 rpm or more</li> <li>- Differences between engine speed and primary pulley speed: 1,000 rpm or less</li> <li>- Differences between primary pulley speed and input speed: More than 1,000 rpm</li> <li>- Differences between engine speed and input speed: More than 1,000 rpm</li> <li>- Lock-up command is being given (except for slip lock-up)</li> <li>- DTC other than the applicable DTC is not detected.</li> </ul> </li> </ol>

### 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

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.

# P0717 INPUT SPEED SENSOR A

[CVT: RE0F10D]

< DTC/CIRCUIT DIAGNOSIS >

- 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-128, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000012428136

### 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		
F73	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		
F73	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.

Input speed sensor		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F73	2	F75	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.



# P0717 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

Input speed sensor		—	Continuity
Connector	Terminal		
F73	2	Ground	Not existed

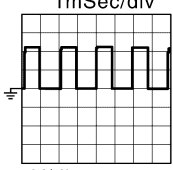
Is the inspection result normal?

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			
F75	24	Ground	<ul style="list-style-type: none"> <li>• Shift position: "L" position</li> <li>• Vehicle speed: 20 km/h (12 MPH)</li> </ul>	<p>880 Hz 1mSec/div</p>  <p>5V/div JSDIA3769GB</p>

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace input speed sensor. Refer to [TM-207, "Removal and Installation"](#).

## 6. CHECK CIRCUIT BETWEEN IPDM E/R AND INPUT SPEED SENSOR

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

IPDM E/R harness connector		Input speed sensor		Continuity
Connector	Terminal	Connector	Terminal	
F35	70	F73	3	Existed

Is the check result normal?

YES >> GO TO 7.

NO >> Repair or replace malfunctioning parts.

## 7. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Open circuit or short circuit in harness between ignition switch and IPDM E/R. Refer to [PG-25, "Wiring Diagram — Ignition Power Supply —"](#).
- Short circuit in harness between IPDM E/R harness connector terminal 70 and input speed sensor harness connector terminal 3.
- 10A fuse (No.46, located in the IPDM E/R). Refer to [PG-70, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

YES >> INSPECTION END

NO >> Repair or replace malfunctioning parts.

# P0740 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0740 TORQUE CONVERTER

### DTC Description

INFOID:000000012428137

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0740	TORQUE CONVERTER (Torque Converter Clutch Circuit/Open)	When all of the following conditions are satisfied and this state is maintained for 5 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• P0743 is not detected.</li><li>• TCM judges that solenoid valve circuit is open.</li></ul>

### 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.

Selector lever : "D" position

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

3. Stop the vehicle.

# P0740 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

4. Check the first trip DTC.

Is "P0740" detected?

YES >> Go to [TM-131. "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000012428138

### 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	
F75	38	F74	5	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace malfunctioning parts.

### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

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 >> INSPECTION END

NO >> There is malfunction of torque converter clutch solenoid valve. Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

# P0743 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0743 TORQUE CONVERTER

### DTC Description

INFOID:000000012428139

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0743	TORQUE CONVERTER (Torque Converter Clutch Circuit Electrical)	When all of the following conditions are satisfied and this state is maintained for 0.48 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• TCM judges that solenoid valve circuit is shorted to ground.</li></ul>

### 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

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

# P0743 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

Is "P0743" detected?

- YES >> Go to [TM-133, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000012428140

### 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		
F75	38	Ground	Not existed

Is the inspection result normal?

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

### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

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 >> INSPECTION END
- NO >> There is malfunction of torque converter clutch solenoid valve. Replace transaxle assembly. Refer to [TM-222, "Removal and Installation"](#).

# P0744 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0744 TORQUE CONVERTER

### DTC Description

INFOID:000000012428141

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0744	TORQUE CONVERTER (Torque converter clutch circuit intermittent)	When all of the following conditions are satisfied and this state is maintained for 30 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• P0717 is not detected.</li><li>• CAN communication is normal</li><li>• Torque converter slip speed: (40+vehicle speed/2) rpm</li><li>• LU pressure: More than 0.2 MPa</li></ul>

### 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

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

# P0744 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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-135, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:0000000012428142

TM

### 1. REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to [TM-222, "Removal and Installation"](#).

>> WORK END

# P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0746 PRESSURE CONTROL SOLENOID A

### DTC Description

INFOID:000000012428143

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0746	PC SOLENOID A (Pressure Control Solenoid A Performance/ Stuck Off)	The detecting condition A or detection condition B is detected twice or more (1 second or more later after detection of the first) in the same DC under the following diagnosis conditions: <ul style="list-style-type: none"><li>• Diagnosis conditions<ul style="list-style-type: none"><li>- Engine speed: More than 600 rpm</li><li>- Primary pulley speed: More than 450 rpm</li><li>- Idle is not being detected.</li></ul></li><li>- Acceleration/deceleration speed: <math>-0.49 \text{ m/s}^2</math> (<math>-0.05 \text{ G}</math>) or more</li><li>- The primary pulley speed experienced 300 rpm or more and the secondary pulley speed experienced 250 rpm or more at least once.</li><li>- Secondary pulley speed: More than 150 rpm</li><li>- TCM power supply voltage: More than 11 V</li><li>• Detection condition A<ul style="list-style-type: none"><li>- Status with the shifting ratio of the primary pulley speed/secondary pulley ratio exceeding 2.981 is 0.2 sec. or more continuously.</li></ul></li><li>• Detection condition B<ul style="list-style-type: none"><li>- Status with the shifting ratio of the primary pulley speed/secondary pulley ratio exceeding 3.781 is 0.1 sec. or more continuously.</li></ul></li></ul>

#### 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

##### 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.



# P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

Is "P0746" detected?

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

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000012428144

### 1. REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to [TM-222, "Removal and Installation"](#).

>> WORK END

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# P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0776 PRESSURE CONTROL SOLENOID B

### DTC Description

INFOID:000000012428145

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0776	PC SOLENOID B (Pressure Control Solenoid "B" Performance/ Stuck Off)	<p>When any of 1 or 2 is satisfied and this state is maintained for 10 seconds:</p> <ol style="list-style-type: none"> <li>When all of the following conditions are satisfied: <ul style="list-style-type: none"> <li>- DTC other than the applicable DTC is not detected.</li> <li>- Engine speed: More than 625 rpm</li> <li>- Selector lever: Other than P/N position</li> <li>- CVT fluid temperature: More than -20°C (-4°F)</li> <li>- TCM power supply: More than 11 V</li> <li>- The difference between instruction pressure of secondary pressure and 10-msec-ago instruction secondary pressure is 0 MPa or more</li> <li>- Instruction pressure of secondary pressure: 0 MPa or more</li> <li>- Instruction pressure of secondary pressure - secondary pressure: More than 1.2 MPa</li> </ul> </li> <li>When all of the following conditions are satisfied and this state is maintained for 5.5 seconds: <ul style="list-style-type: none"> <li>• DTC other than the applicable DTC is not detected.</li> <li>• CVT fluid temperature: More than -20°C (-4°F)</li> <li>• Selector lever: Other than P/N position</li> <li>• Secondary pressure - instruction pressure of secondary pressure: 1.2 MPa or more</li> </ul> </li> </ol> <ol style="list-style-type: none"> <li>When all of the following conditions are satisfied: <ul style="list-style-type: none"> <li>- DTC other than the applicable DTC is not detected.</li> <li>- CVT fluid temperature: More than -20°C (-4°F)</li> <li>- Selector lever: Other than P/N position</li> <li>- TCM power supply: More than 11 V</li> </ul> </li> <li>When all of the following conditions are satisfied and this state is maintained for 5.5 seconds: <ul style="list-style-type: none"> <li>• DTC other than the applicable DTC is not detected.</li> <li>• CVT fluid temperature: More than -20°C (-4°F)</li> <li>• Selector lever: Other than P/N position</li> <li>• Secondary pressure - instruction pressure of secondary pressure: 1.2 MPa or more</li> <li>- The difference between instruction pressure of secondary pressure and 10-msec-ago instruction secondary pressure is 0 MPa or more</li> <li>- Secondary pressure - instruction pressure of secondary pressure: More than 1.2 MPa</li> </ul> </li> </ol>

### 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
  - 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.**

# P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## 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-139, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:0000000012428146

## 1. REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to [TM-222, "Removal and Installation"](#).

>> WORK END

# P0778 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0778 PRESSURE CONTROL SOLENOID B

### DTC Description

INFOID:000000012428147

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0778	PC SOLENOID B (Pressure Control Solenoid "B" Electrical)	When all of the following conditions are satisfied and this state is maintained for 0.48 seconds: <ul style="list-style-type: none"> <li>• TCM power supply voltage: More than 11 V</li> <li>• TCM judges that solenoid valve circuit is shorted to ground.</li> </ul>

### 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-140, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428148

#### 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		
F75	39	Ground	Not existed

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

#### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

Check continuity between CVT unit harness connector terminal and ground.

# P0778 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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 >> INSPECTION END

NO >> There is malfunction of secondary pressure solenoid valve. Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

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TM

# P0779 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0779 PRESSURE CONTROL SOLENOID B

### DTC Description

INFOID:000000012428149

### DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC detection condition
P0779	Pressure control solenoid B Intermittent	When all of the following conditions are satisfied and this state is maintained for 0.2 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• P0778 is not detected</li><li>• TCM judges that solenoid valve circuit is open or shorted to power supply.</li></ul>

### 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-142, "Diagnosis Procedure"](#).  
NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).  
NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428150

#### 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	
F75	39	F74	3	Existed

#### Is the inspection result normal?

# P0779 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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

## 2.CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

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 >> INSPECTION END
- NO >> There is malfunction of secondary pressure solenoid valve. Replace transaxle assembly. Refer to [TM-222, "Removal and Installation"](#).

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# P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

### DTC Description

INFOID:000000012428151

### 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)	When all of the following conditions are satisfied and this state is maintained for 5 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• DTC other than the applicable DTC is not detected.</li><li>• Primary pulley speed: 300 rpm or more</li><li>• Secondary pulley speed: 250 rpm or more</li><li>• Target speed for shifting: Less than 0.1 seconds</li><li>• Primary pulley pressure is outside the specified value.</li></ul>

### 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-144, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428152

#### 1. REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to [TM-222, "Removal and Installation"](#).

>> WORK END



# P0847 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0847 TRANSMISSION FLUID PRESSURE SEN/SW B

### DTC Description

INFOID:000000012428153

### 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)	When all of the following conditions are satisfied and this state is maintained for 5 seconds: <ul style="list-style-type: none"><li>• CVT fluid temperature: More than <math>-20^{\circ}\text{C}</math> (<math>-4^{\circ}\text{F}</math>)</li><li>• TCM power supply voltage: 11 V or more</li><li>• Secondary pressure sensor voltage: 0.09 V or less</li></ul>

### 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 :  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ )

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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) 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-145, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428154

#### 1. CHECK TCM INPUT SIGNALS

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

# P0847 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

+		-	Condition	Voltage
TCM				
Connector	Terminal			
F75	16	Ground	<ul style="list-style-type: none"><li>• After engine warm up</li><li>• Selector lever: "N" position</li><li>• At idle</li></ul>	1.23 – 1.25 V

Is the inspection result normal?

YES >> INSPECTION END

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	
F75	11	F74	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		
F75	16	Ground	Not existed
	26		

Is the inspection result normal?

YES >> There is malfunction of secondary pressure sensor. Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

# P0848 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0848 TRANSMISSION FLUID PRESSURE SEN/SW B

### DTC Description

INFOID:000000012428155

### 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)	When all of the following conditions are satisfied and this state is maintained for 5 seconds: <ul style="list-style-type: none"><li>• CVT fluid temperature: More than <math>-20^{\circ}\text{C}</math> (<math>-4^{\circ}\text{F}</math>)</li><li>• TCM power supply voltage: More than 11 V</li><li>• Instruction secondary pressure: 5.7 MPa or less</li><li>• Secondary pressure sensor voltage: 4.7 V or more</li></ul>

### 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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ )

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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) 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-147, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428156

#### 1. CHECK TCM INPUT SIGNALS

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

# P0848 TRANSMISSION FLUID PRESSURE SEN/SW B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

+		-	Condition	Voltage
TCM				
Connector	Terminal			
F75	16	Ground	<ul style="list-style-type: none"><li>• After engine warm up</li><li>• Selector lever: "N" position</li><li>• At idle</li></ul>	1.23 – 1.25 V

Is the inspection result normal?

YES >> INSPECTION END

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		
F74	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		
F74	14	Ground	0 V

Is the inspection result normal?

YES >> There is malfunction of secondary pressure sensor. Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

NO >> Repair or replace malfunctioning parts.

# P084C TRANSMISSION FLUID PRESSURE SEN/SW H

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P084C TRANSMISSION FLUID PRESSURE SEN/SW H

### DTC Description

INFOID:000000012428157

### 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)	When all of the following conditions are satisfied and this state is maintained for 5 seconds: <ul style="list-style-type: none"><li>• CVT fluid temperature: More than <math>-20^{\circ}\text{C}</math> (<math>-4^{\circ}\text{F}</math>)</li><li>• TCM power supply voltage: More than 11 V</li><li>• Primary pressure sensor voltage: 0.09 V or less</li></ul>

### 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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ )

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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) 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-149, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428158

#### 1. CHECK TCM INPUT SIGNALS

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

# P084C TRANSMISSION FLUID PRESSURE SEN/SW H

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

+		-	Condition	Voltage
TCM				
Connector	Terminal			
F75	17	Ground	<ul style="list-style-type: none"><li>• After engine warm up</li><li>• Selector lever: "N" position</li><li>• At idle</li></ul>	0.75 – 0.82 V

Is the inspection result normal?

YES >> INSPECTION END

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	
F75	11	F74	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		
F75	17	Ground	Not existed
	26		

Is the inspection result normal?

YES >> There is malfunction of primary pressure sensor. Replace transaxle assembly. Refer to [TM-222](#), "[Removal and Installation](#)".

NO >> Repair or replace malfunctioning parts.

# P084D TRANSMISSION FLUID PRESSURE SEN/SW H

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P084D TRANSMISSION FLUID PRESSURE SEN/SW H

### DTC Description

INFOID:000000012428159

### 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)	When all of the following conditions are satisfied and this state is maintained for 5 seconds: <ul style="list-style-type: none"><li>• CVT fluid temperature: More than <math>-20^{\circ}\text{C}</math> (<math>-4^{\circ}\text{F}</math>)</li><li>• TCM power supply voltage: More than 11 V</li><li>• Primary pressure sensor voltage: 4.7 V or more</li></ul>

### 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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ )

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  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) 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-151, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428160

#### 1. CHECK TCM INPUT SIGNALS

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

# P084D TRANSMISSION FLUID PRESSURE SEN/SW H

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

+		-	Condition	Voltage
TCM				
Connector	Terminal			
F75	17	Ground	<ul style="list-style-type: none"><li>• After engine warm up</li><li>• Selector lever: "N" position</li><li>• At idle</li></ul>	0.75 – 0.82 V

Is the inspection result normal?

YES >> INSPECTION END

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. Turn ignition switch ON.
5. Check voltage between CVT unit harness connector terminal and ground.

+		-	Voltage (Approx.)
CVT unit			
Connector	Terminal		
F74	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		
F74	13	Ground	0 V

Is the inspection result normal?

YES >> There is malfunction of primary pressure sensor. Replace transaxle assembly. Refer to [TM-222](#), "[Removal and Installation](#)".

NO >> Repair or replace malfunctioning parts.



# P0863 TCM COMMUNICATION

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0863 TCM COMMUNICATION

### DTC Description

INFOID:000000012428161

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0863	CONTROL UNIT (CAN) (TCM Communication Circuit)	An error is detected at the initial CAN diagnosis of TCM.

### 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-153, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428162

#### 1. REPLACE TCM

Replace TCM. Refer to [TM-202, "Removal and Installation"](#).

>> WORK END

P0890 TCM

DTC Description

INFOID:000000012428163

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0890	TCM (Transmission Control Module Power Relay Sense Circuit Low)	When all of the following conditions are satisfied and this state is maintained for 0.2 seconds: • TCM power supply voltage: More than 11 V • Battery voltage: Less than 8.4 V

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-154, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:000000012428164

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

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

+		-	Voltage
TCM			
Connector	Terminal		
F75	45	Ground	10 – 16 V
	46		

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-202, "Removal and Installation"](#).
- NO >> GO TO 2.

2. DETECT MALFUNCTIONING ITEMS

# P0890 TCM

[CVT: RE0F10D]

## < DTC/CIRCUIT DIAGNOSIS >

Check the following items:

- Open circuit or short circuit in harness between battery positive terminal and TCM connector terminals 45, and 46.
- 10A fuse (No.59, located in the fuse and fusible link block). Refer to [PG-67, "Terminal Arrangement"](#).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Repair or replace malfunctioning parts.

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# P0962 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0962 PRESSURE CONTROL SOLENOID A

### DTC Description

INFOID:000000012428165

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0962	PC SOLENOID A (Pressure Control Solenoid A Control Circuit Low)	When all of the following conditions are satisfied and this state is maintained for 0.2 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• TCM judges that solenoid valve circuit is shorted to ground.</li></ul>

### 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-156. "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428166

#### 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		
F75	30	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

#### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

Check continuity between CVT unit harness connector terminal and ground.

# P0962 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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 >> INSPECTION END

NO >> There is malfunction of line pressure solenoid valve. Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

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# P0963 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0963 PRESSURE CONTROL SOLENOID A

### DTC Description

INFOID:000000012428167

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0963	PC SOLENOID A (Pressure Control Solenoid A Control Circuit High)	When all of the following conditions are satisfied and this state is maintained for 0.2 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• P0962 is not detected</li><li>• TCM judges that solenoid valve circuit is open.</li></ul>

### 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-158, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428168

#### 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	
F75	30	F74	1	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

#### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

Check continuity between CVT unit harness connector terminal and ground.

# P0963 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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 >> INSPECTION END

NO >> There is malfunction of line pressure solenoid valve. Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

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TM

# P0965 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0965 PRESSURE CONTROL SOLENOID B

### DTC Description

INFOID:000000012428169

### 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)	<p>When any of 1 or 2 is satisfied and this state is maintained for 10 seconds:</p> <ol style="list-style-type: none"><li>When all of the following conditions are satisfied:<ul style="list-style-type: none"><li>- DTC other than the applicable DTC is not detected.</li><li>- Engine speed: More than 625 rpm</li><li>- Selector lever: Other than P/N position</li><li>- CVT fluid temperature: More than -20°C (-4°F)</li><li>- TCM power supply: More than 11 V</li><li>- The difference between instruction pressure of primary pressure and 10-msec-ago instruction primary pressure is 0 MPa or more</li><li>- Instruction pressure of primary pressure: 0.86 MPa or more</li><li>- Instruction pressure of primary pressure - primary pressure: More than 1.2 MPa</li></ul></li><li>When all of the following conditions are satisfied and this state is maintained for 1 second:<ul style="list-style-type: none"><li>• DTC other than the applicable DTC is not detected.</li><li>• CVT fluid temperature: More than -20°C (-4°F)</li><li>• Selector lever: Other than P/N position</li><li>• Engine speed: More than 625 rpm</li><li>• Instruction pressure of primary pressure: More than 2 MPa</li><li>• Primary pressure: 0.4 MPa or less</li></ul></li></ol> <ol style="list-style-type: none"><li>When all of the following conditions are satisfied:<ul style="list-style-type: none"><li>- DTC other than the applicable DTC is not detected.</li><li>- CVT fluid temperature: More than -20°C (-4°F)</li><li>- Selector lever: Other than P/N position</li><li>- TCM power supply: More than 11 V</li></ul></li><li>When all of the following conditions are satisfied and this state is maintained for 5.5 seconds:<ul style="list-style-type: none"><li>• DTC other than the applicable DTC is not detected.</li><li>• CVT fluid temperature: More than -20°C (-4°F)</li><li>• Selector lever: Other than P/N position</li><li>• Primary pressure - instruction pressure of primary pressure: 1.2 MPa or more</li></ul></li><li>The difference between instruction pressure of primary pressure and 10-msec-ago instruction primary pressure is 0 MPa or more</li><li>Primary pressure - instruction pressure of primary pressure: More than 1.2 MPa</li></ol>

### 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
  - 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



# P0965 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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-161, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000012428170

## 1. REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to [TM-222, "Removal and Installation"](#).

>> WORK END

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# P0966 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0966 PRESSURE CONTROL SOLENOID B

### DTC Description

INFOID:000000012428171

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0966	PC SOLENOID B (Pressure Control Solenoid B Control Circuit Low)	When all of the following conditions are satisfied and this state is maintained for 0.48 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• TCM judges that solenoid valve circuit is shorted to ground.</li></ul>

### 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-162. "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428172

#### 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		
F75	40	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

#### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

Check continuity between CVT unit harness connector terminal and ground.

# P0966 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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 >> INSPECTION END

NO >> There is malfunction of primary pressure solenoid valve. Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

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TM

# P0967 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P0967 PRESSURE CONTROL SOLENOID B

### DTC Description

INFOID:000000012428173

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P0967	PC SOLENOID B (Pressure Control Solenoid B Control Circuit High)	When all of the following conditions are satisfied and this state is maintained for 0.2 seconds: <ul style="list-style-type: none"><li>• TCM power supply voltage: More than 11 V</li><li>• P0966 is not detected</li><li>• TCM judges that solenoid valve circuit is open.</li></ul>

### 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-164, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428174

#### 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	
F75	40	F74	2	Existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

#### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

Check continuity between CVT unit harness connector terminal and ground.

# P0967 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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 >> INSPECTION END

NO >> There is malfunction of primary pressure solenoid valve. Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

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TM

# P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P2765 INPUT SPEED SENSOR B

### DTC Description

INFOID:000000012428175

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P2765	INPUT SPEED SENSOR B (Input/Turbine Speed Sensor B Circuit)	<p>When 1 is satisfied and any of 2, 3 or 4 is satisfied and this state is maintained for 5 seconds:</p> <ol style="list-style-type: none"><li>When all of the following conditions are satisfied:<ul style="list-style-type: none"><li>- TCM power supply voltage: More than 11 V</li><li>- After range change completion, it spends 2 seconds or more.</li></ul></li><li>When all of the following conditions are satisfied and this state is maintained for 5 seconds:<ul style="list-style-type: none"><li>- Secondary pulley speed: Less than 149 rpm</li><li>- Primary pulley speed: 1,000 rpm or more</li></ul></li><li>When all of the following conditions are satisfied and this state is maintained for 0.5 seconds:<ul style="list-style-type: none"><li>- 10-msec-ago secondary pulley speed: 1000 rpm or more</li><li>- Now secondary pulley speed: 0 rpm</li></ul></li><li>When all of the following conditions are satisfied and this state is maintained for 5 seconds:<ul style="list-style-type: none"><li>- Range: D or L</li><li>- Engine speed: 450 rpm or more</li><li>- Primary pulley speed: 300 rpm or more</li><li>- Secondary pulley speed: 300 rpm or more</li><li>- Input speed: 300 rpm or more</li><li>- The difference between engine speed and primary pulley speed is 1,000 rpm or less</li><li>- The difference between engine speed and input speed is 1,000 rpm or less</li><li>- The difference between primary pulley speed and input speed is 1,000 rpm or less</li><li>- Lock-up command is being given (except for slip lock-up)</li><li>- DTC other than the applicable DTC is not detected.</li><li>- When any of following items are satisfied:<ul style="list-style-type: none"><li>• Primary pulley speed/secondary pulley speed: More than 2.9</li><li>• Primary pulley speed/secondary pulley speed: Less than 0.3</li></ul></li></ul></li></ol>

### POSSIBLE CAUSE

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

### 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. CHECK DTC DETECTION

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

# P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

- 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-167, "Diagnosis Procedure"](#).
- NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).
- NO-2 >> Confirmation after repair: INSPECTION END

## Diagnosis Procedure

INFOID:000000012428176

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### 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
Connector	Terminal		
F77	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		
F77	1	Ground	Existed

#### Is the inspection result normal?

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

### 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	
F77	2	F75	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.

# P2765 INPUT SPEED SENSOR B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

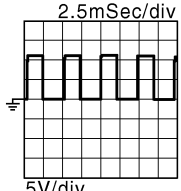
Output speed sensor		—	Continuity
Connector	Terminal		
F77	2	Ground	Not existed

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			
F75	34	Ground	<ul style="list-style-type: none"> <li>• Shift position: "L" position</li> <li>• Vehicle speed: 20 km/h (12 MPH)</li> </ul>	<p>200 Hz</p>  <p>2.5mSec/div</p> <p>5V/div</p> <p>JSDIA1904GB</p>

Is the inspection result normal?

- YES >> INSPECTION END  
 NO >> Replace output speed sensor. Refer to [TM-209, "Removal and Installation"](#).

## 6. CHECK CIRCUIT BETWEEN IPDM E/R AND OUTPUT SPEED SENSOR

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

IPDM E/R harness connector		Output speed sensor		Continuity
Connector	Terminal	Connector	Terminal	
F35	70	F77	3	Existed

Is the check result normal?

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

## 7. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Open circuit or short circuit in harness between ignition switch and IPDM E/R. Refer to [PG-25, "Wiring Diagram — Ignition Power Supply —"](#).
- Short circuit in harness between IPDM E/R harness connector terminal 70 and output speed sensor harness connector terminal 3.
- 10A fuse (No.46, located in the IPDM E/R). Refer to [PG-70, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

- YES >> INSPECTION END  
 NO >> Repair or replace malfunctioning parts.



# P2813 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P2813 SELECT SOLENOID

### DTC Description

INFOID:000000012428177

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P2813	SELECT SOLENOID (Select solenoid)	When any of 1, or 2 is satisfied: 1. When all the following conditions are established three times in 1DC - Precondition • 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 2. When all of the following conditions are satisfied and this state is maintained for 30 seconds: - 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.) • 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

**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

**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.

## P2813 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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>> GO TO 2.

### 2. CHECK DTC DETECTION 1

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1. Start the engine.
2. Maintain the following conditions. (Keep 30seconds 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-170. "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45. "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:0000000012428178

### 1. REPLACE TRANSAXLE ASSEMBLY

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Replace transaxle assembly. Refer to [TM-222. "Removal and Installation"](#).

>> WORK END

# P2814 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P2814 SELECT SOLENOID

### DTC Description

INFOID:000000012428179

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P2814	SELECT SOLENOID (Select solenoid)	When all of the following conditions are satisfied and this state is maintained for 0.48 seconds: <ul style="list-style-type: none"> <li>• TCM power supply voltage: 11 V or more</li> <li>• TCM judges that solenoid valve circuit is shorted to ground.</li> </ul>

### 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-171, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428180

#### 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		
F75	37	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

#### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

Check continuity between CVT unit harness connector terminal and ground.

## P2814 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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 >> INSPECTION END

NO >> There is malfunction of select solenoid valve. Replace transaxle assembly. Refer to [TM-222](#), "[Removal and Installation](#)".

# P2815 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## P2815 SELECT SOLENOID

### DTC Description

INFOID:000000012428181

### DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition
P2815	SELECT SOLENOID (Select solenoid)	When all of the following conditions are satisfied and this state is maintained for 0.2 seconds: <ul style="list-style-type: none"> <li>• TCM power supply voltage: More than 11 V</li> <li>• TCM judges that solenoid valve circuit is open.</li> <li>• P2814 is not detected.</li> </ul>

### 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-173, "Diagnosis Procedure"](#).

NO-1 >> To check malfunction symptom before repair: Refer to [GI-45, "Intermittent Incident"](#).

NO-2 >> Confirmation after repair: INSPECTION END

### Diagnosis Procedure

INFOID:000000012428182

#### 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	
F75	37	F74	4	Existed

#### Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

#### 2. CHECK CIRCUIT BETWEEN CVT UNIT AND GROUND

Check continuity between CVT unit harness connector terminal and ground.

## P2815 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

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 >> INSPECTION END

NO >> There is malfunction of select solenoid valve. Replace transaxle assembly. Refer to [TM-222](#), "[Removal and Installation](#)".

# MAIN POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## MAIN POWER SUPPLY AND GROUND CIRCUIT

### Diagnosis Procedure

INFOID:000000012428183

#### 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	Ground	10 – 16 V
F75	45		
	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	Ground	Ignition switch ON	10 – 16 V			
F75	47				Ground	Ignition switch OFF	Approx. 0 V
						48	Ignition switch ON
	48						Ignition switch OFF

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		
F75	41	Ground	Existed
	42		

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-45. "Intermittent Incident"](#).  
NO >> Repair or replace malfunctioning parts.

#### 4. DETECT MALFUNCTION ITEMS (PART 1)

Check the following items:

- Open circuit or short circuit in harness between battery positive terminal and TCM connector terminal 45, and 46.
- 10A fuse (No.59, located in the fuse and fusible link block). Refer to [PG-67. "Terminal Arrangement"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-45. "Intermittent Incident"](#).  
NO >> Repair or replace malfunctioning parts.

# MAIN POWER SUPPLY AND GROUND CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## 5. CHECK CIRCUIT BETWEEN IPDM E/R AND TCM

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

IPDM E/R		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F35	70	F75	47	Existed
			48	

Is the check result normal?

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

## 6. DETECT MALFUNCTIONING ITEMS (PART 2)

Check the following items:

- Open circuit or short circuit in harness between ignition switch and IPDM E/R. Refer to [PG-25, "Wiring Diagram — Ignition Power Supply —"](#).
- Short circuit in harness between IPDM E/R harness connector terminal 70 and TCM harness connector terminals 47, and 48.
- 10A fuse (No.46, located in the IPDM E/R). Refer to [PG-70, "IPDM E/R Terminal Arrangement"](#).
- IPDM E/R

Is the check result normal?

- YES >> Check intermittent incident. Refer to [GI-45, "Intermittent Incident"](#).  
NO >> Repair or replace malfunctioning parts.



# OVERDRIVE CONTROL SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## OVERDRIVE CONTROL SWITCH

### Component Function Check

INFOID:000000012428184

#### 1. CHECK O/D OFF INDICATOR LAMP FUNCTION

Check O/D OFF indicator lamp turns ON for approx. 2 seconds when ignition switch turns ON.

Is the inspection results normal?

YES >> GO TO 2.

NO >> Go to [TM-180, "Diagnosis Procedure"](#).

#### 2. CHECK OVERDRIVE CONTROL SWITCH FUNCTION

- Shift the selector lever to "D" position.
- Check that O/D OFF indicator lamp turns ON/OFF when overdrive control switch is operated.

Is the inspection results normal?

YES >> INSPECTION END

NO >> Go to [TM-177, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000012428185

#### 1. CHECK OVERDRIVE CONTROL SWITCH CIRCUIT

- Turn ignition switch OFF.
- Disconnect CVT shift selector connector.
- Turn ignition switch ON.
- Check voltage between CVT shift selector harness connector terminals.

Connector	CVT shift selector		Voltage (Approx.)
	+	-	
M107	1	2	5.0 V

Is the inspection result normal?

YES >> GO TO 2.

NO >> GO TO 4.

#### 2. CHECK CVT SHIFT SELECTOR CIRCUIT

Check continuity between CVT shift selector harness connector terminals.

CVT shift selector Terminal	Condition	Continuity
1 - 2	Overdrive control switch is depressed.	Existed
	Overdrive control switch is released.	Not existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> GO TO 3.

#### 3. CHECK OVERDRIVE CONTROL SWITCH

Check overdrive control switch. Refer to [TM-178, "Component Inspection"](#).

Is the inspection result normal?

YES >> Repair CVT shift selector assembly. Refer to [TM-193, "Removal and Installation"](#).

NO >> Replace selector lever knob. Refer to [TM-193, "Removal and Installation"](#).

#### 4. CHECK GROUND CIRCUIT

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

# OVERDRIVE CONTROL SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

CVT shift selector		—	Continuity
Connector	Terminal		
M107	2	Ground	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace malfunctioning parts.

## 5. CHECK CIRCUIT BETWEEN CVT SHIFT SELECTOR AND COMBINATION METER (PART 1)

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

CVT shift selector		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M107	1	M76	10	Existed

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace malfunctioning parts.

## 6. CHECK CIRCUIT BETWEEN CVT SHIFT SELECTOR AND COMBINATION METER (PART 2)

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

CVT shift selector		—	Continuity
Connector	Terminal		
M107	1	Ground	Not existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace malfunctioning parts.

## 7. CHECK COMBINATION METER INPUT/OUTPUT SIGNAL

1. Connect all of disconnected connectors.
2. Turn ignition switch ON.
3. Select "Data Monitor" in "METER/M&A".
4. Select "O/D OFF SW".
5. Check that "O/D OFF SW" turns ON/OFF when overdrive control switch is operated. Refer to [MWI-25](#), "[Reference Value](#)".

Is the inspection result normal?

YES >> Check intermittent incident. Refer to [GI-45](#), "[Intermittent Incident](#)".

NO >> Replace combination meter. Refer to [MWI-84](#), "[Removal and Installation](#)".

## Component Inspection

INFOID:0000000012428186

## 1. CHECK OVERDRIVE CONTROL SWITCH

# OVERDRIVE CONTROL SWITCH

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

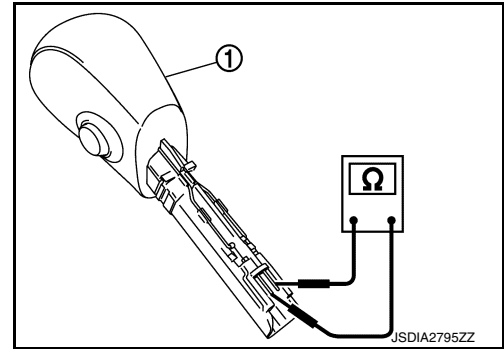
Check continuity between wires of shift selector knob ①.

Condition	Continuity
Overdrive control switch is depressed.	Existed
Overdrive control switch is released.	Not existed

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace shift selector knob. Refer to [TM-193. "Removal and Installation"](#).



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# O/D OFF INDICATOR LAMP

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## O/D OFF INDICATOR LAMP

### Component Function Check

INFOID:000000012428187

#### 1. CHECK O/D OFF INDICATOR LAMP FUNCTION

Check O/D OFF indicator lamp turns ON for approx. 2 seconds when ignition switch turns ON.

Is the inspection results normal?

- YES >> INSPECTION END
- NO >> Go to [TM-180, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000012428188

#### 1. CHECK DTC (TCM)

##### With CONSULT

1. Turn ignition switch ON.
2. Check "Self Diagnostic Results" in "TRANSMISSION".

Is any DTC detected?

- YES >> Check DTC detected item. Refer to [TM-63, "DTC Index"](#).
- NO >> GO TO 2.

#### 2. CHECK DTC (COMBINATION METER)

##### With CONSULT

Check "Self Diagnostic Results" in "METER/M&A".

Is any DTC detected?

- YES >> Check DTC detected item. Refer to [MWI-31, "DTC Index"](#).
- NO >> GO TO 3.

#### 3. CHECK COMBINATION METER INPUT/OUTPUT SIGNAL

##### With CONSULT

1. Shift the selector lever to "D" position.
2. Select "Data Monitor" in "METER/M&A".
3. Select "O/D OFF IND".
4. Check that "O/D OFF IND" turns ON/OFF when overdrive control switch is operated. Refer to [MWI-25, "Reference Value"](#).

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-84, "Removal and Installation"](#).
- NO >> GO TO 4.

#### 4. CHECK TCM INPUT/OUTPUT SIGNAL

##### With CONSULT

1. Select "Data Monitor" in "TRANSMISSION".
2. Select "SPORT MODE SW".
3. Check that "SPORT MODE SW" turns ON/OFF when overdrive control switch is operated. Refer to [TM-52, "Reference Value"](#).

Is the inspection result normal?

- YES >> Replace combination meter. Refer to [MWI-84, "Removal and Installation"](#).
- NO >> Check overdrive control switch circuit. Refer to [TM-177, "Diagnosis Procedure"](#).

# SHIFT POSITION INDICATOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

## SHIFT POSITION INDICATOR CIRCUIT

### Component Parts Function Inspection

INFOID:000000012428189

#### 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-181, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000012428190

#### 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: RE0F10D]

## SHIFT LOCK SYSTEM

### Component Function Check

INFOID:000000012428191

#### 1.CHECK SHIFT LOCK OPERATION (PART 1)

1. Turn ignition ON.
2. Shift the selector lever to "P" position.
3. Attempt to shift the selector lever to any other than position with the brake pedal released.

Can the selector lever be shifted to any other position?

- YES >> Go to [TM-182, "Diagnosis Procedure"](#).  
NO >> GO TO 2.

#### 2.CHECK SHIFT LOCK OPERATION (PART 2)

Attempt to shift the selector lever to any other than position with the brake pedal depressed.

Can the selector lever be shifted to any other position?

- YES >> Inspection End.  
NO >> Go to [TM-182, "Diagnosis Procedure"](#).

### Diagnosis Procedure

INFOID:000000012428192

Regarding Wiring Diagram information, refer to [TM-75, "Wiring Diagram"](#).

#### 1.CHECK STOP LAMP SWITCH

1. Ignition switch ON.
2. Check voltage between stop lamp switch connector E38 terminal 4 and ground.

Stop lamp switch		Ground	Brake pedal	Voltage
Connector	Terminal			
E38	4	Ground	Applied	Battery voltage
			Released	0V

Is the inspection result normal?

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

#### 2.CHECK GROUND CIRCUIT

1. Ignition switch OFF.
2. Disconnect CVT shift selector connector.
3. Check continuity between CVT shift selector connector M107 terminal 4 and ground.

CVT shift selector		Ground	Continuity
Connector	Terminal		
M107	4	Ground	Yes

Is the inspection result normal?

- YES >> GO TO 4.  
NO >> Repair or replace harness.

#### 3.CHECK STOP LAMP SWITCH POWER CIRCUIT

Check voltage between stop lamp switch connector E38 terminal 3 and ground.

# SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

Stop lamp switch		Ground	Voltage
Connector	Terminal		
E38	3	Ground	Battery voltage

Is the inspection result normal?

- YES >> Replace stop lamp switch. Refer to [BR-19, "Exploded View"](#).
- NO >> Repair or replace harness.

## 4.CHECK CVT SHIFT SELECTOR POWER CIRCUIT

Check voltage between CVT shift selector connector M107 terminal 3 and ground.

CVT shift selector		Ground	Brake pedal	Voltage
Connector	Terminal			
M107	3	Ground	Applied	Battery voltage

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 (CVT Shift Selector Assembly)

INFOID:0000000012428193

### 1.CHECK CVT SHIFT SELECTOR ASSEMBLY (PART 1)

Check continuity between CVT shift selector connector terminals.

CVT shift selector Terminal	Condition	Continuity
3 - 4	Shift the selector lever to "P" position.	Yes
	Other than the above.	No

Is the inspection result normal?

- YES >> GO TO 2.
- NO >> Replace CVT shift selector assembly. Refer to [TM-193, "Removal and Installation"](#).

### 2.CHECK CVT SHIFT SELECTOR ASSEMBLY (PART 2)

Apply voltage to terminals of CVT shift selector 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	<ul style="list-style-type: none"> <li>• Selector lever: "P" position</li> <li>• Apply 12 V between terminals 3 and 4.</li> </ul>	Shift lock solenoid operates

Is the inspection result normal?

- YES >> Inspection End
- NO >> Replace CVT shift selector assembly. Refer to [TM-193, "Removal and Installation"](#).

## Component Inspection (Stop Lamp Switch)

INFOID:0000000012428194

### 1.CHECK STOP LAMP SWITCH

Check continuity between the stop lamp switch connector terminals.

# SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10D]

Stop lamp switch Terminal	Condition	Continuity
3 – 4	Depressed brake pedal	Yes
	Released brake pedal	No

Is the inspection result normal?

YES >> Inspection End.

NO >> Replace stop lamp switch. Refer to [BR-19. "Exploded View"](#).



# CVT CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10D]

## SYMPTOM DIAGNOSIS

### CVT CONTROL SYSTEM

#### Symptom Table

INFOID:0000000012428195

- 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											Stall test	CVT position	Power supply	Control valve	CVT fluid level and state	Ignition switch and starter		
	EC-130	CAN communication line	Transmission range switch (P0705, P0706)	Input speed sensor (P0717)	Primary speed sensor (P0715)	Output speed sensor (P2765)	CVT fluid temperature sensor (P0712, P0713)	Primary pressure sensor (P084C, P084D)	Secondary pressure sensor (P0841, P0847, P0848)	Torque converter clutch solenoid valve (P0740, P0743, P0744)	TM-90							TM-196	TM-175
Shift Shock	Large shock (N→D position)	1	4	7					3				6		2		8	5	
	Large shock (N→R position)	1	4	7					3				6		2		8	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				

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# CVT CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10D]

		Engine system	CAN communication line	Transmission range switch (P0705, P0706)	Input speed sensor (P0717)	Primary speed sensor (P0715)	Output speed sensor (P2765)	CVT fluid temperature sensor (P0712, P0713)	Primary pressure sensor (P084C, P084D)	Secondary pressure sensor (P0841, P0847, P0848)	Torque converter clutch solenoid valve (P0740, P0743, P0744)	Stall test	CVT position	Power supply	Control valve	CVT fluid level and state	Ignition switch and starter		
Symptom		<u>EC-130</u>										<u>TM-90</u>	<u>TM-196</u>	<u>TM-175</u>	<u>TM-205</u>	<u>TM-191</u>	<u>PG-25, STR-7</u>		
Other	No creep at all.	2	4	3	7	8	9	10	11	12		5	6	13	14	1			
	Vehicle cannot run in any position.	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		
	Engine does not start in N or P position.			3										2				1	
	Engine starts in positions other than N or P.			3										2				1	

# CVT CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10D]

Symptom Table 2

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-225	TM-222							TM-183	TM-182	TM-193
Shift Shock	Large shock (N→D position)		2		1							
	Large shock (N→R position)		2			1						
	Shock is too large for lock-up.	1										
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								

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# CVT CONTROL SYSTEM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10D]

	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-225	TM-222							TM-183	TM-182	TM-193	
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											
	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

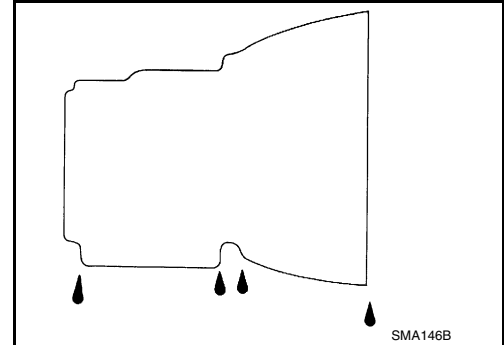
## CVT FLUID

### Inspection

INFOID:0000000012428196

#### 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:0000000012428197

**Recommended fluid and fluid capacity** : Refer to [TM-228, "General Specification"](#).

#### 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.

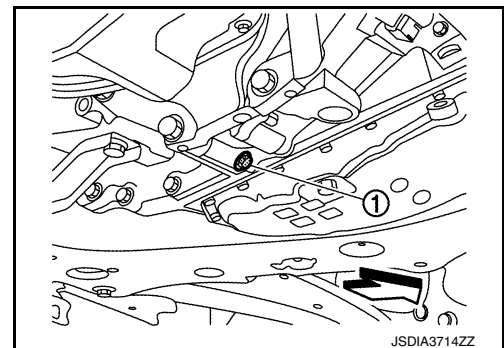
1. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
2. Select "FLUID TEMP" and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the "P" position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to [TM-205, "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: RE0F10D]

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-205, "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:**

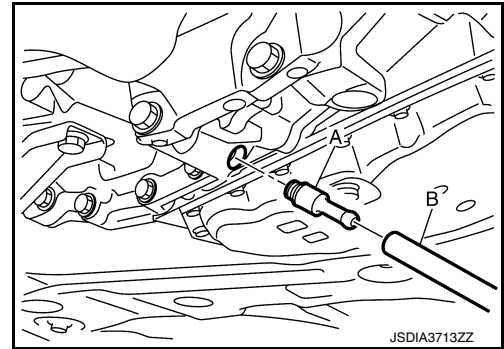
If the CVT fluid is not drained, refer to “Adjustment” and refill with the CVT fluid.

32. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to [TM-205, "Exploded View"](#).

**CAUTION:**

**Never reuse O-ring.**

33. Lift down the vehicle.



# CVT FLUID

< PERIODIC MAINTENANCE >

[CVT: RE0F10D]

34. Select "Data Monitor" in "TRANSMISSION" using CONSULT.
35. Select "CONFORM CVTF DETERIORATION".
36. Select "Erase".
37. Stop the engine.

## Adjustment

INFOID:000000012428198

**Recommended fluid and fluid capacity** : Refer to [TM-228, "General Specification"](#).

### 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).
- Maintain specified engine idle speed during CVT fluid level adjustment. Refer to [EC-504, "Idle Speed"](#).
- 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.

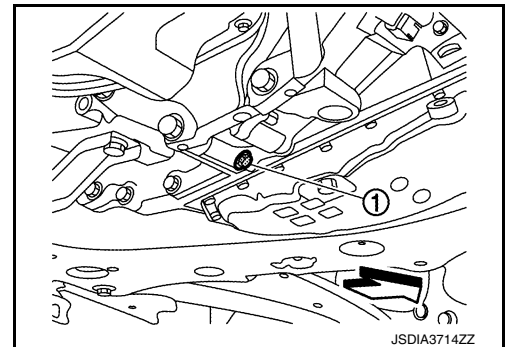
4. While depressing the brake pedal, shift the selector lever to the entire position from "P" to "L", and shift it to the "P" position.

### 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.

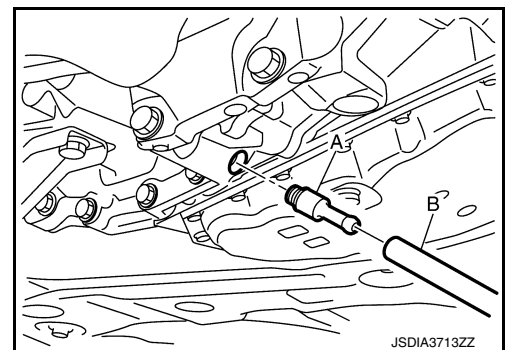
11. Remove the ATF changer hose from the charging pipe, and check that the CVT fluid drains out from the charging pipe. If it does not drain out, perform charging again.

### 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-205, "Exploded View"](#).

### CAUTION:



## CVT FLUID

< PERIODIC MAINTENANCE >

[CVT: RE0F10D]

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**Never reuse O-ring.**

14. Lift down the vehicle.
15. Stop the engine.



# CVT SHIFT SELECTOR

< REMOVAL AND INSTALLATION >

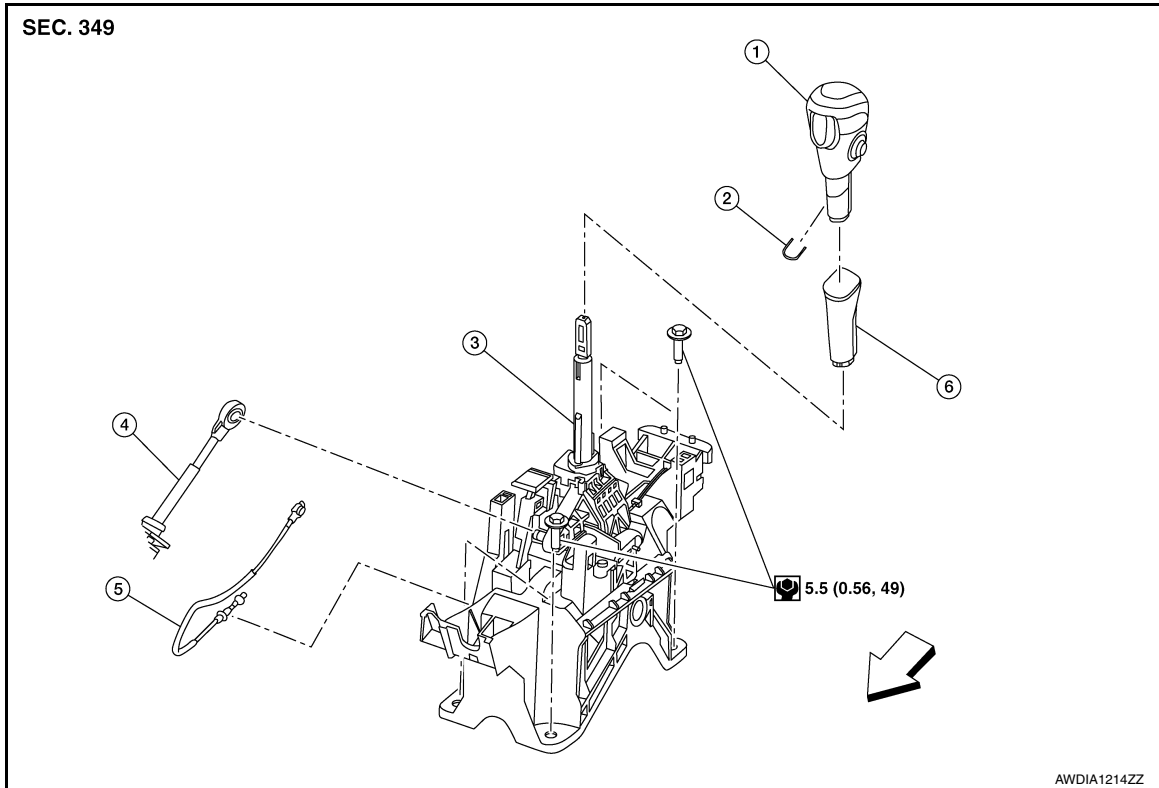
[CVT: RE0F10D]

## REMOVAL AND INSTALLATION

### CVT SHIFT SELECTOR

Exploded View

INFOID:0000000012428199



- |                          |                        |                                |
|--------------------------|------------------------|--------------------------------|
| 1. Shift selector handle | 2. Lock pin            | 3. Shift selector assembly     |
| 4. Control cable         | 5. Key interlock cable | 6. Shift selector handle cover |

⇐ Front

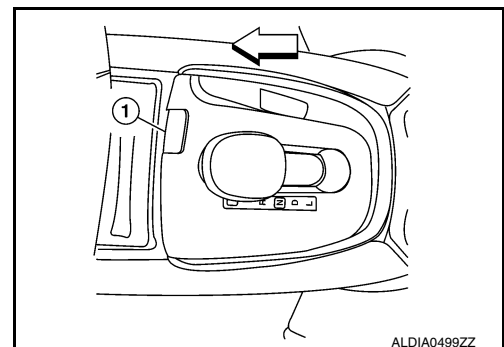
## Removal and Installation

INFOID:0000000012428200

### REMOVAL

1. Apply the parking brake.  
**CAUTION:**  
**Make sure the vehicle cannot move with the parking brake applied.**
2. Move the shift selector with the following procedure.
  - Remove shift lock override button cover (1) using suitable tool.

⇐ : Front



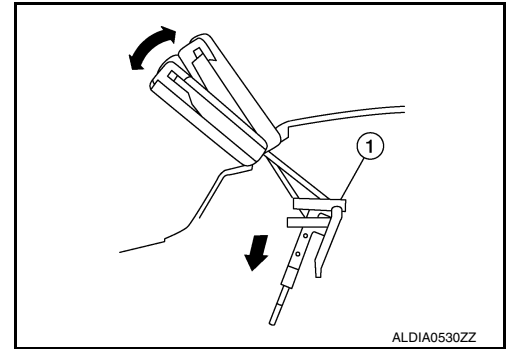
# CVT SHIFT SELECTOR

## < REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

- Insert suitable tool into opening to depress the shift lock override button (1) in the direction (←) shown. Move shift selector to "N" position while depressing shift lock override button.

← : Front



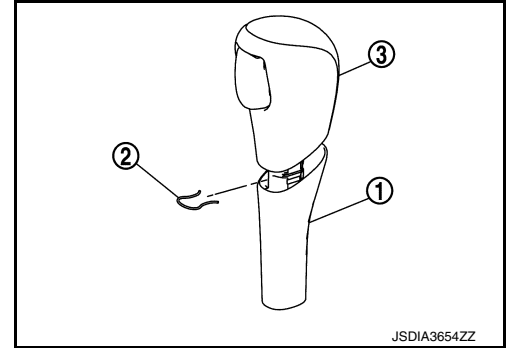
3. Remove the shift selector handle with the following procedure.

- a. Slide the selector lever handle cover (1) down.

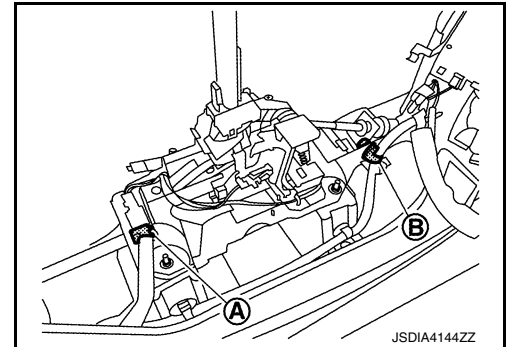
**CAUTION:**

**Do not damage the knob cover.**

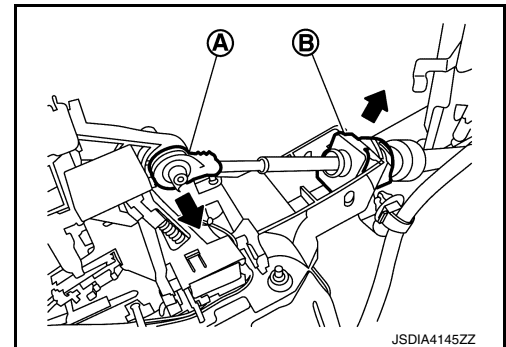
- b. Pull out the lock pin (2) from the selector lever handle (3).
  - c. Pull the selector lever handle and the selector lever handle cover upwards to remove them.
4. Remove the center console assembly. Refer to [IP-19, "Removal and Installation"](#).
  5. Shift the selector lever to "P" position.



6. Disconnect the shift selector connector (A) and remove harness clip (B).



7. Disconnect the tip (A) of control cable and remove socket (B) from the shift selector assembly.



# CVT SHIFT SELECTOR

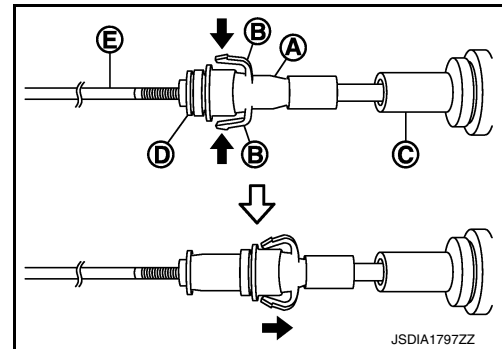
## < REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

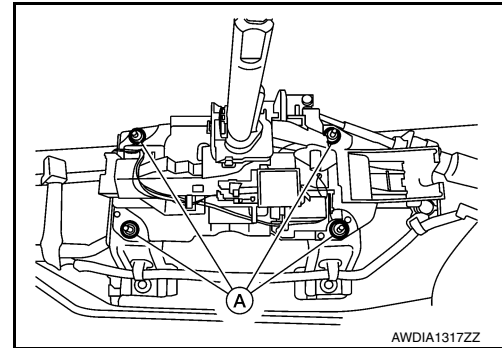
8. Press the pawls (B) of the key interlock cable slider (A) while sliding it in the direction of the casing cap (C), and separate the adjusting holder (D) and slider (A) (if equipped).

(E) :Key interlock rod

9. Remove the key interlock cable from the shift selector (if equipped).



10. Remove the shift selector assembly nuts (A) and remove the shift selector assembly from the vehicle.



## INSTALLATION

Installation is in the reverse order of removal.

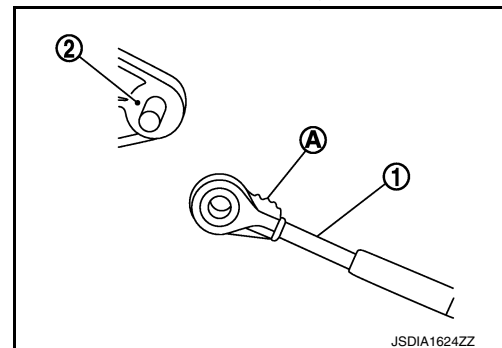
### Shift Selector

- 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:

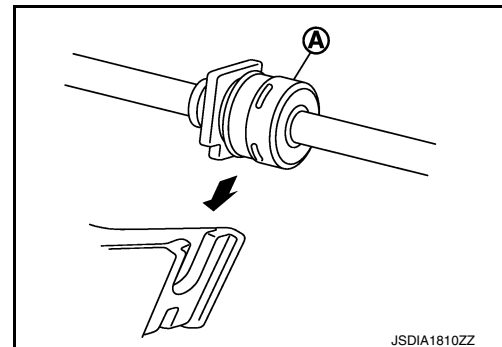
Apply multi-purpose grease to control cable eye before installation.



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 shift selector handle onto the shift selector assembly.

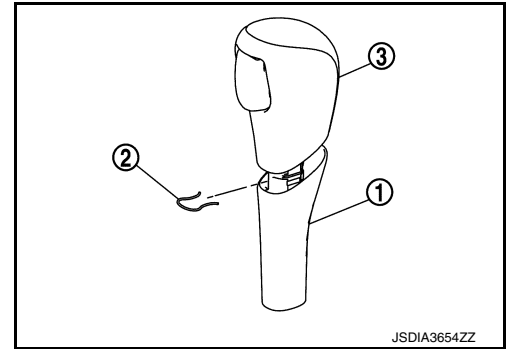
A  
B  
C  
TM  
E  
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G  
H  
I  
J  
K  
L  
M  
N  
O  
P

# CVT SHIFT SELECTOR

## < REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

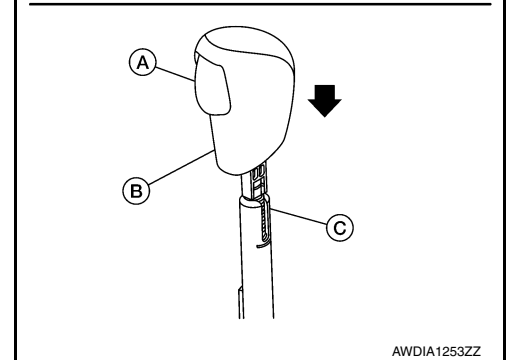
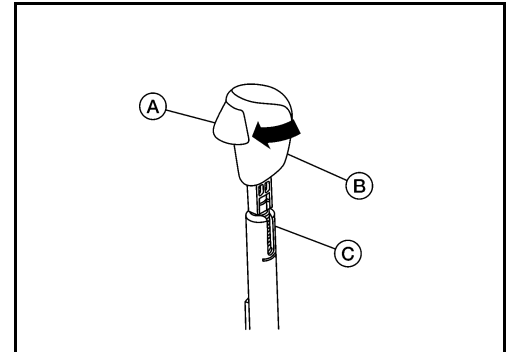
1. Install the lock pin (2) onto the shift selector handle (3).
2. Install the shift selector handle cover (1) onto the shift selector handle.
3. Shift the selector lever to "N" position.



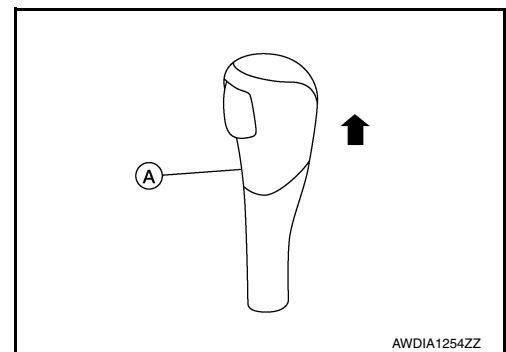
4. Pull and hold the shift selector handle button (A) in the direction shown (←) using a suitable tool and insert shift selector handle (B) into the shift selector assembly (C) until a slight touch is felt.
5. Release shift selector handle button (A) and continue to push down (↓) on shift selector handle (B) into shift selector assembly (C) until you feel it click into place.

**CAUTION:**

**Do not strike the selector lever handle to press it into place.**



6. After installing shift selector handle (A), pull the handle in the direction shown (←) to check that it does not become disconnected.



## Inspection

INFOID:000000012428201

### INSPECTION AFTER INSTALLATION

- Check the shift selector position. Refer to [TM-91, "Inspection"](#).
- Check that shift lock can be forcible release. Refer to [TM-29, "SHIFT LOCK SYSTEM : System Description"](#).

# CONTROL CABLE

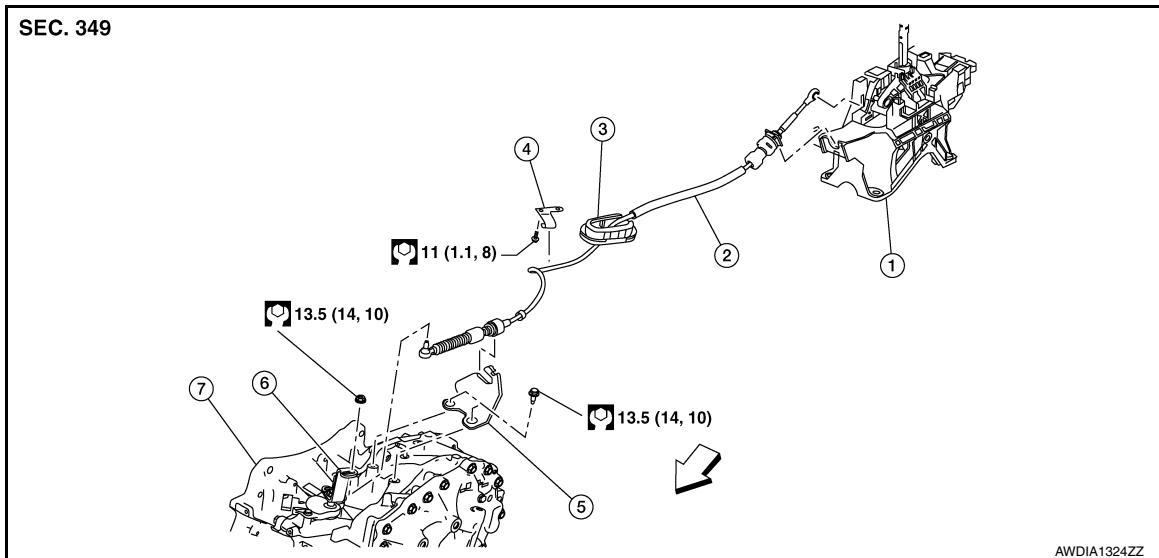
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## CONTROL CABLE

### Exploded View

INFOID:000000012428202



- |                       |                  |                     |
|-----------------------|------------------|---------------------|
| 1. Shift selector     | 2. Control cable | 3. Retainer grommet |
| 4. Bracket A          | 5. Bracket B     | 6. Manual lever     |
| 7. Transaxle assembly | ↶ Front          |                     |

### Removal and Installation

INFOID:000000012428203

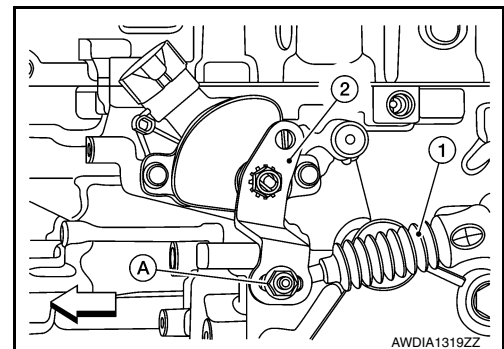
#### **CAUTION:**

**Always apply the parking brake before performing removal and installation.**

#### REMOVAL

1. Apply the parking brake.  
**CAUTION:**  
**Make sure the vehicle cannot move with the parking brake applied.**
2. Remove battery tray. Refer to [PG-81, "Removal and Installation \(Battery Tray\)"](#).
3. Remove the control cable nut (A) and remove the control cable (1) from the manual lever (2).

↶ : Front



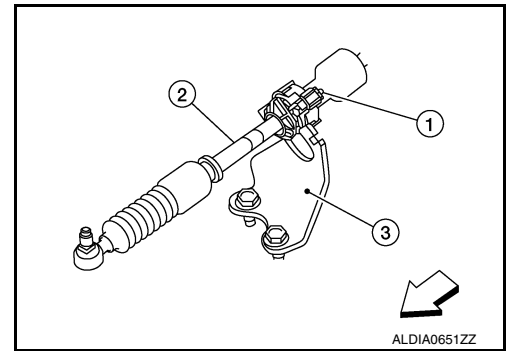
# CONTROL CABLE

## < REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

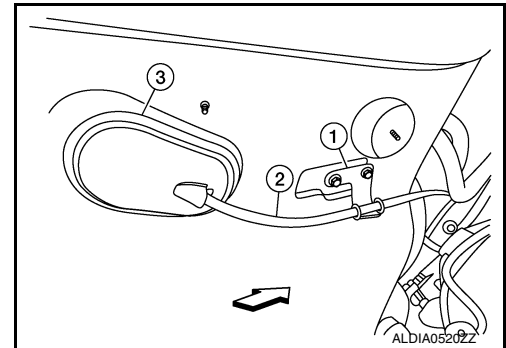
4. Remove the control cable (1) from bracket (2).

⇐ : Front

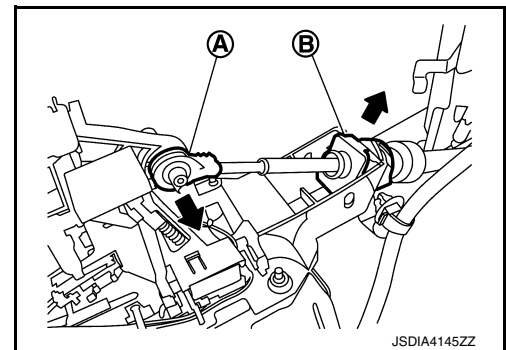


5. Remove the control cable (2) from bracket (1).  
6. Remove retainer grommet (3) by pushing upward.

⇐ : Front



7. Remove the center console assembly. Refer to [IP-19. "Removal and Installation"](#).  
8. Disconnect the tip (A) of control cable and remove the socket (B) from the shift selector assembly in the direction shown (➡).



9. Remove the control cable.

## INSTALLATION

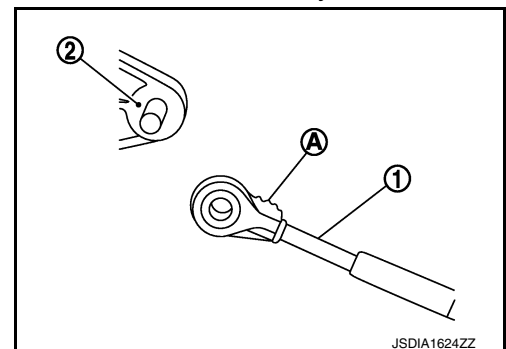
Installation is in the reverse order of removal.

• 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.



# CONTROL CABLE

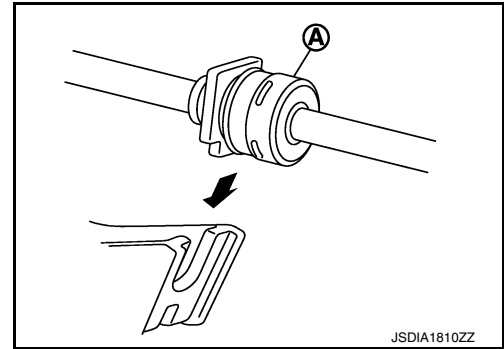
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

2. Install the socket (A) onto the shift selector assembly.

**CAUTION:**

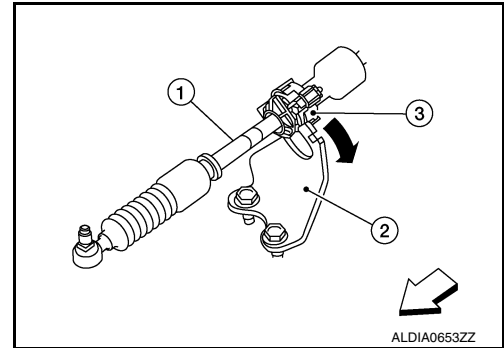
- Place the socket onto the shift selector assembly, then fasten it in place from above.
- Check that the pulling on the socket does not disconnect it.



3. Install cable (1) to bracket (2) in the direction shown (➡).

**CAUTION:**

Check that the pulling on the socket does not disconnect it.



## Inspection and Adjustment

### ADJUSTMENT AFTER INSTALLATION

Adjust the CVT position. Refer to [TM-91. "Adjustment"](#).

### INSPECTION AFTER ADJUSTMENT

Check the CVT shift selector position after the adjustment. Refer to [TM-91. "Inspection"](#).

INFOID:000000012428204

A  
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P

# KEY INTERLOCK CABLE

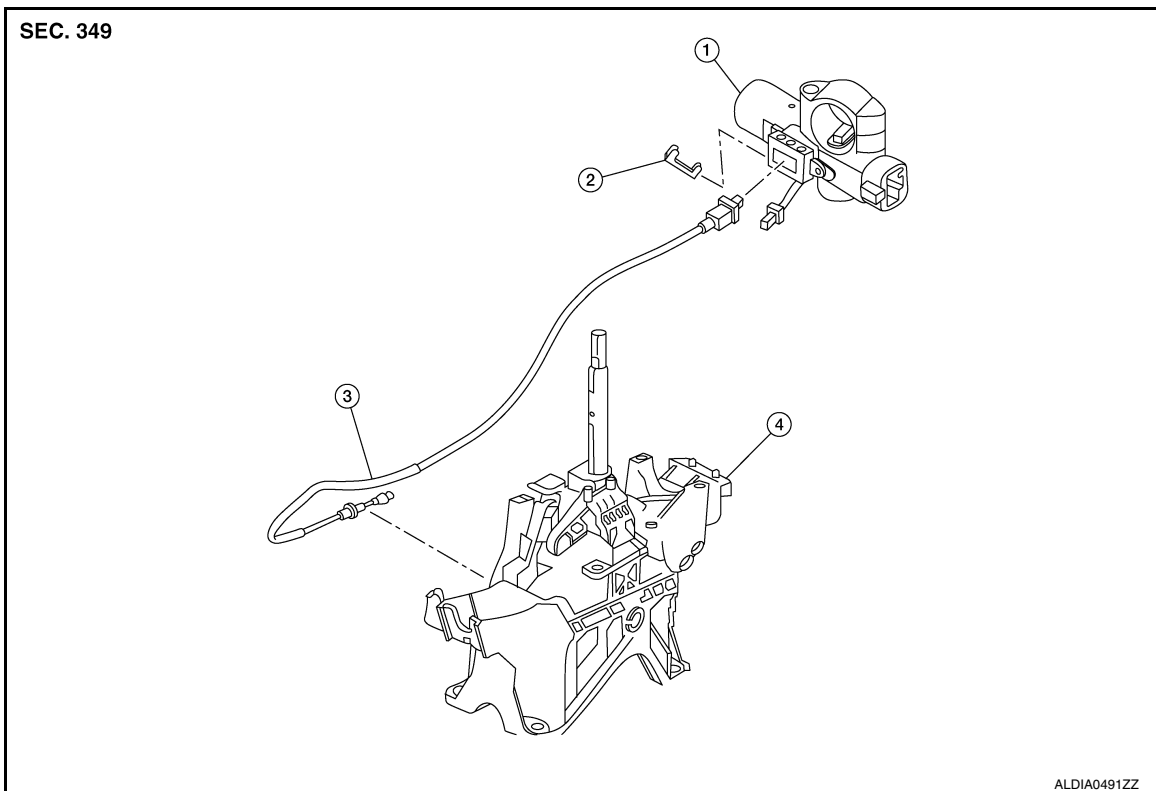
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## KEY INTERLOCK CABLE

### Exploded View

INFOID:000000012428205



- 1. Steering lock unit
- 2. Clip
- 3. Key interlock cable
- 4. Shift selector assembly

### Removal and Installation

INFOID:000000012428206

#### REMOVAL

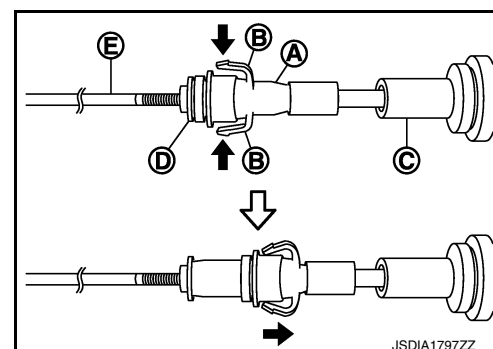
##### CAUTION:

Always apply the parking brake before performing removal and installation.

1. Move shift selector to the "N" position.
2. Remove the shift selector knob.
3. Move shift selector to the "P" position.
4. Remove the center console assembly. Refer to [IP-19, "Removal and Installation"](#).
5. Press the pawls (B) of the key interlock cable slider (A) while sliding it in the direction of the casing cap (C), and separate the adjusting holder (D) and slider (A).

(E) :Key interlock rod

6. Remove the key interlock cable from the shift selector.
7. Remove the steering column covers. Refer to [IP-18, "Removal and Installation"](#).



8. Remove instrument lower panel LH. Refer to [IP-23, "Removal and Installation"](#).



# KEY INTERLOCK CABLE

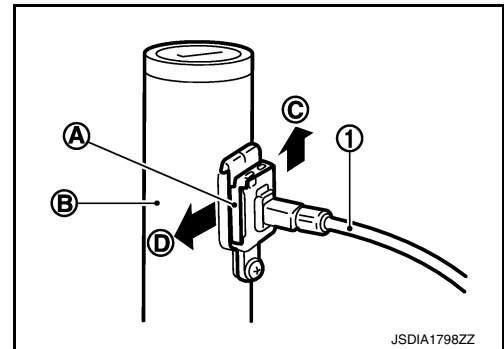
## < REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

9. Lift clip (A) in the direction of the arrow (←C) and remove in the direction of the arrow (←D).

- (1) :Key interlock cable  
(B) :Steering lock unit

10. Disconnect the key interlock cable from the steering lock unit.  
11. Disengage the clip and disconnect the key interlock cable from the vehicle.



## INSTALLATION

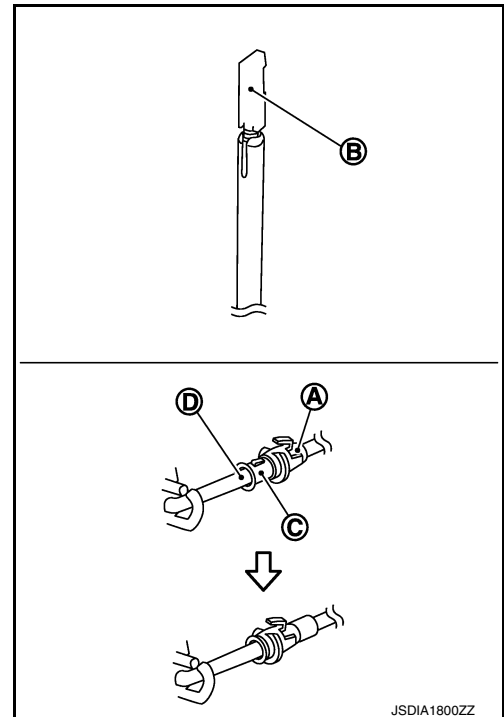
Installation is in the reverse order of removal.

- While pressing the detent rod (B) down, slide the key interlock cable slider (A) toward the key interlock rod (D) side, and install the adjusting holder (C) and key interlock rod.

### CAUTION:

- Do not squeeze the pawls on the key interlock cable slider when holding the slider.
- Do not apply force in a perpendicular direction to the key interlock rod when sliding the slider.

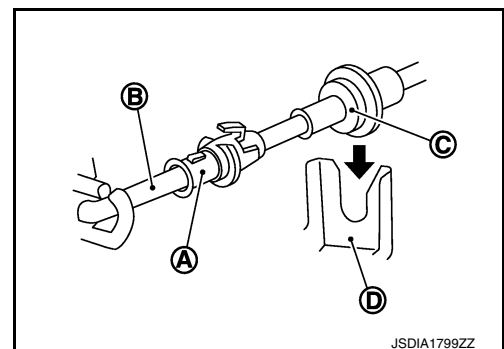
← :Interlock cable in lock position



- Install the adjusting holder (A) onto the key interlock rod (B), then install the casing cap (C) onto the shift selector cable bracket (D).

### CAUTION:

- When installing the key interlock cable, do not bend or twist the cable forcefully.
- After connecting the key interlock cable to the shift selector cable bracket, be sure to check that the casing cap is completely fastened to the cable bracket. If the casing cap is easily displaced, replace the key interlock cable.



## Inspection

INFOID:000000012428207

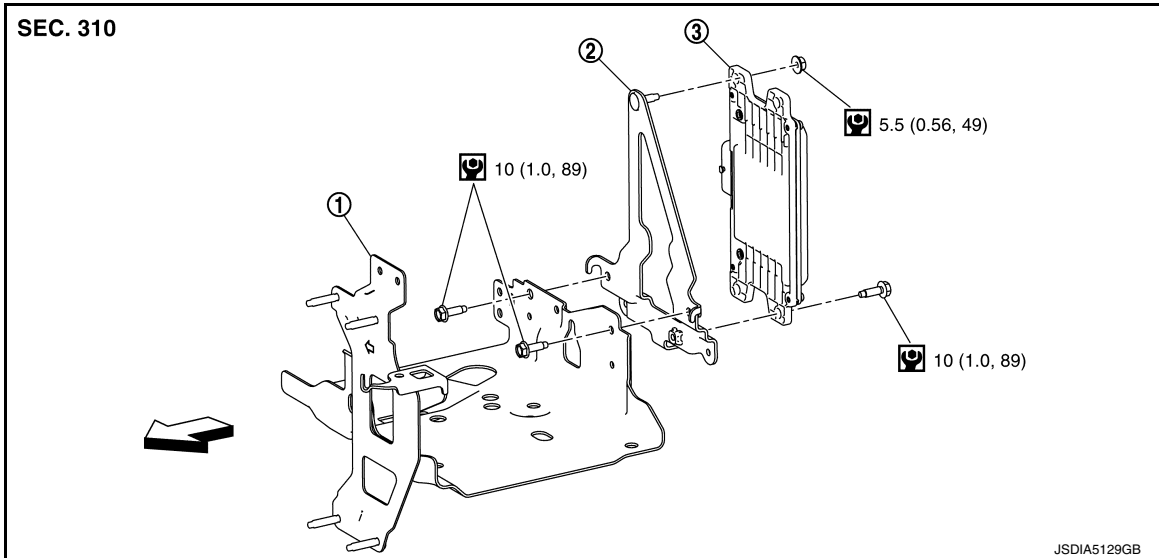
## INSPECTION AFTER INSTALLATION

- Check the CVT position. If a malfunction is found, adjust the CVT position. Refer to [TM-91, "Inspection"](#).
- The key can be removed only when the selector lever is in the "P" position.
- It must not be possible to turn the ignition switch to LOCK when the selector lever is not in the "P" position.

TCM

Exploded View

INFOID:000000012428208



- 1. Bracket
  - 2. Bracket
  - 3. TCM
- ↩ : Front

Removal and Installation

INFOID:000000012428209

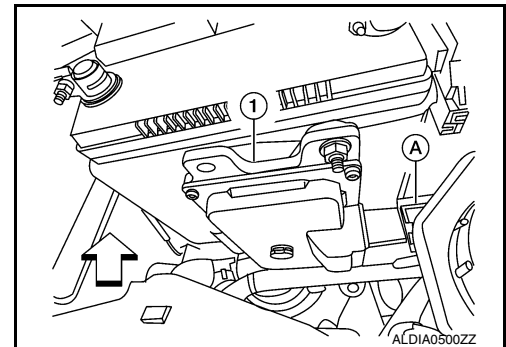
**CAUTION:**

- Do not impact the TCM when removing or installing TCM.
- When replacing TCM and transaxle assembly simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY". Refer to [TM-85, "Description"](#).
- Before replacing TCM, save TCM data using "ADDITIONAL SERVICE WHEN REPLACING TCM". Refer to [TM-81, "Description"](#).
- When replacing TCM, note the "CVTF DETERIORATION DATE" value displayed on CONSULT "CONFORM CVTF DETERIORATION" in MAINTENANCE BOOKLET, before start the operation.

REMOVAL

1. Disconnect the battery negative terminal. Refer to [PG-80, "Exploded View"](#).
2. Remove the air duct (inlet). Refer to [EM-26, "Exploded View"](#).
3. Disconnect the TCM harness connector (A).

- (1) : TCM
- ↩ : Front



4. Remove the TCM nuts and remove TCM from bracket.

INSTALLATION

Installation is in the reverse order of removal.

Adjustment

INFOID:000000012428210

ADJUSTMENT AFTER INSTALLATION

Perform "ADDITIONAL SERVICE WHEN REPLACING TCM". Refer to [TM-81. "Description"](#).

- A
- B
- C
- TM**
- E
- F
- G
- H
- I
- J
- K
- L
- M
- N
- O
- P

# AIR BREATHER

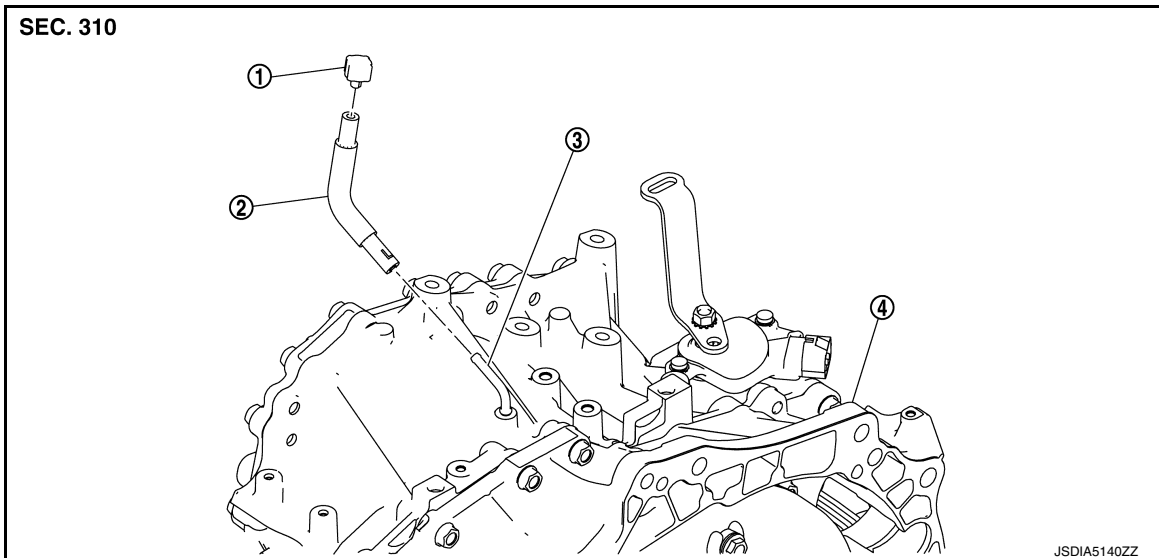
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## AIR BREATHER

Exploded View

INFOID:000000012428211



1. Air breather                      2. Air breather hose                      3. Air breather tube  
4. Transaxle assembly

⇐ : Front

## Removal and Installation

INFOID:000000012428212

### REMOVAL

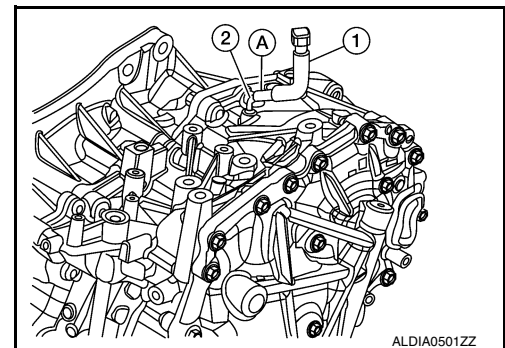
1. Remove air cleaner and air duct. Refer to [EM-26, "Removal and Installation"](#).
2. Remove air breather hose from transaxle assembly.

### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Do not bend the air breather hose to prevent damage to the hose.
- Insert air breather hose to the end of air breather.
- 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.



# OIL PAN

< REMOVAL AND INSTALLATION >

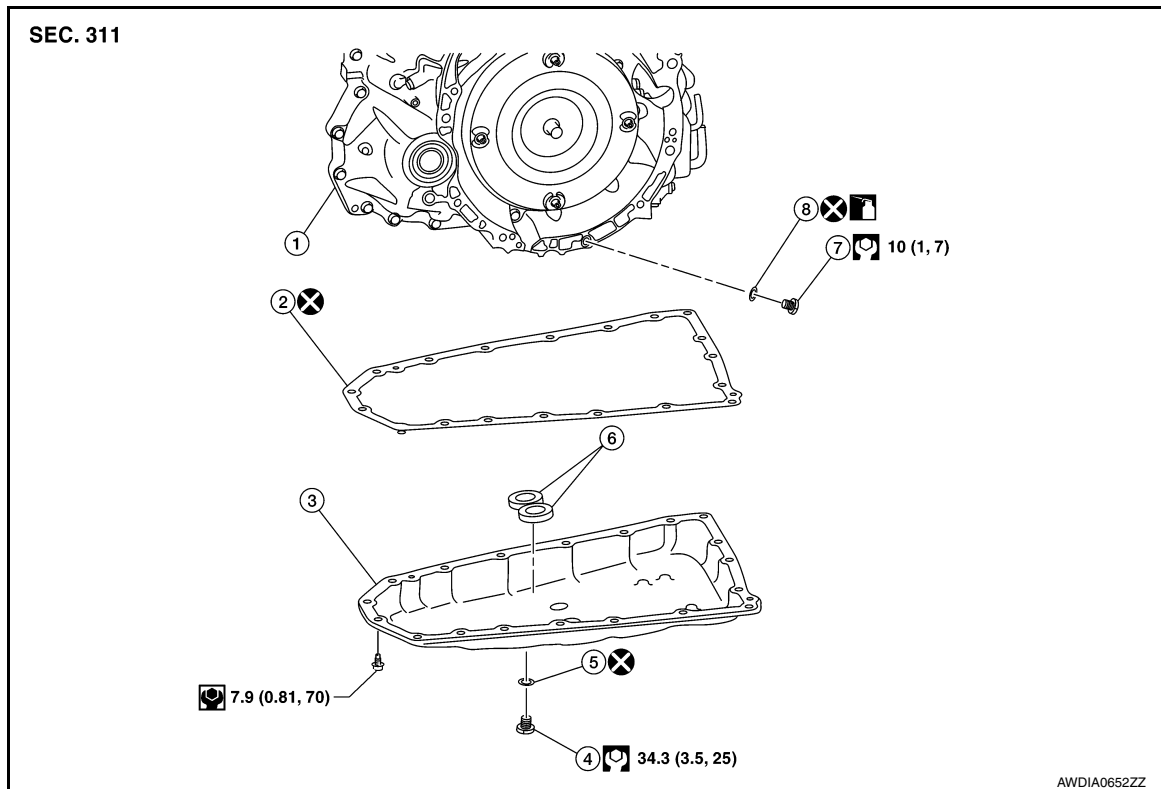
[CVT: RE0F10D]

## OIL PAN

Exploded View

INFOID:000000012428213

### COMPONENT PARTS LOCATION



- |                       |                      |            |
|-----------------------|----------------------|------------|
| 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            |            |

## Removal and Installation

INFOID:000000012428214

### REMOVAL

1. Remove engine under cover. Refer to [TM-205, "Removal and Installation"](#).
2. Remove drain plug from oil pan and then drain the CVT fluid.
3. Remove drain plug gasket.
4. Remove the oil pan bolts, and then remove the oil pan and oil pan gasket.
5. Remove the magnets from the oil pan.

### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Do not reuse drain plug gasket.
- Do not reuse O-ring.
- Completely clean the iron powder from the magnet area of oil pan and the magnets.

Install the oil pan to the transaxle case with the following procedure.

1. Install the oil pan gasket to the oil pan.  
**CAUTION:**
  - Completely wipe out any moisture, oil, and old gasket from the oil pan gasket surface and bolt hole of oil pan and transaxle case.
  - Do not reuse oil pan gasket.
2. Install the oil pan assembly to the transaxle case, and then temporarily tighten the oil pan bolts.

# OIL PAN

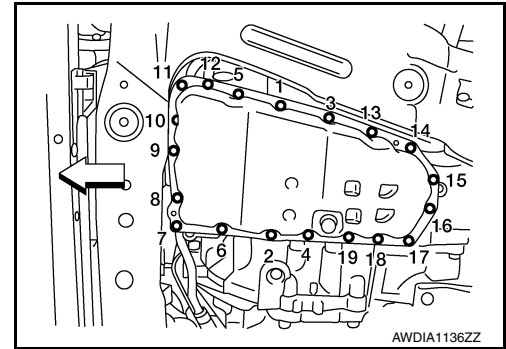
## < REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

3. Tighten the oil pan bolts in the order shown to the specified torque.

← : Front

4. Tighten the oil pan bolts again clockwise from (1) shown to the specified torque.



INFOID:000000012428215

## Inspection

### 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 the CVT fluid level and leakage. Refer to [TM-189, "Inspection"](#).

# INPUT SPEED SENSOR

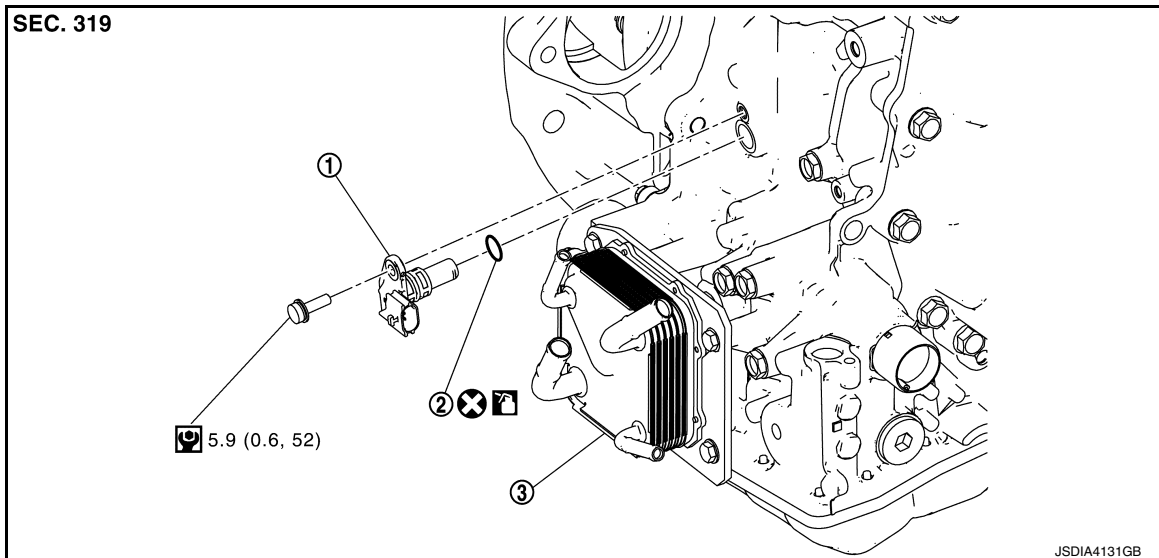
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## INPUT SPEED SENSOR

### Exploded View

INFOID:000000012428216



1. Input speed sensor

2. O-ring

3. Transaxle assembly

### Removal and Installation

INFOID:000000012428217

#### REMOVAL

1. Remove battery tray. Refer to [PG-81, "Removal and Installation \(Battery Tray\)"](#).
2. Remove the starter motor. Refer to [STR-21, "Removal and Installation"](#).
3. Disconnect the input speed sensor harness connector.
4. Remove the input speed sensor bolt and remove the input speed sensor.
5. Remove the O-ring from the input speed sensor.

#### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Do not reuse O-ring.
- Apply CVT fluid to the O-ring.

### Inspection and Adjustment

INFOID:000000012428218

#### INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

#### ADJUSTMENT AFTER INSTALLATION

Adjust the CVT fluid level. Refer to [TM-191, "Adjustment"](#).

# PRIMARY SPEED SENSOR

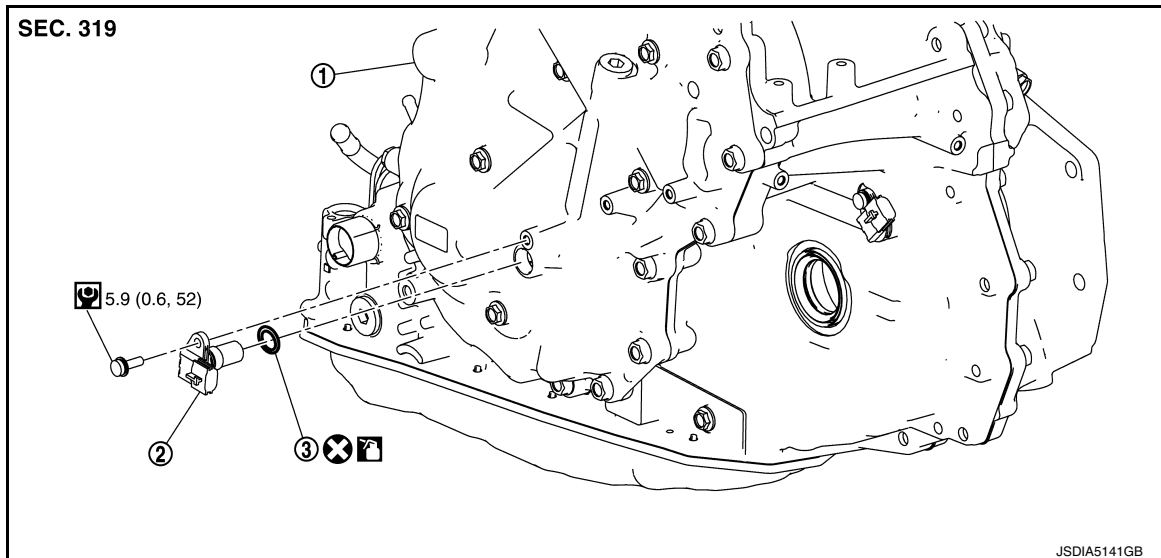
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## PRIMARY SPEED SENSOR

Exploded View

INFOID:000000012428219



1. Transaxle assembly

2. O-ring

3. Primary speed sensor

## Removal and Installation

INFOID:000000012428220

### REMOVAL

1. Remove the engine undercover. Refer to [EXT-36, "ENGINE UNDER COVER : Removal and Installation"](#).
2. Disconnect the primary speed harness connector.
3. Remove the primary speed sensor bolt and remove the primary speed sensor.
4. Remove the O-ring from the primary speed sensor.

### INSTALLATION

Installation is in the reverse order of removal.

#### **CAUTION:**

- Do not reuse O-ring.
- Apply CVT fluid to the O-ring.

## Inspection and Adjustment

INFOID:000000012428221

### INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

### ADJUSTMENT AFTER INSTALLATION

Adjust the CVT fluid level. Refer to [TM-191, "Adjustment"](#).



# OUTPUT SPEED SENSOR

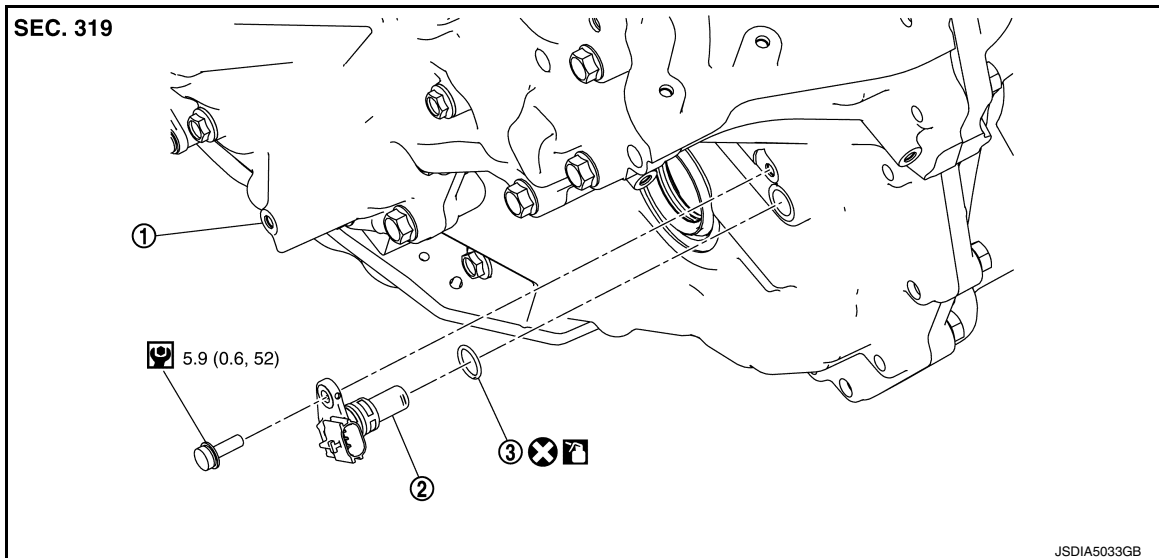
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## OUTPUT SPEED SENSOR

### Exploded View

INFOID:000000012428222



1. Transaxle assembly

2. Output speed sensor

3. O-ring

### Removal and Installation

INFOID:000000012428223

#### REMOVAL

1. Remove engine undercover. Refer to [TM-209, "Removal and Installation"](#).
2. Disconnect the output speed sensor harness connector.
3. Remove the output speed sensor bolt and remove the output speed sensor.
4. Remove the O-ring from the output speed sensor.

#### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Do not reuse O-ring.
- Apply CVT fluid to the O-ring.

### Inspection and Adjustment

INFOID:000000012428224

#### INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

#### ADJUSTMENT AFTER INSTALLATION

Adjust the CVT fluid level. Refer to [TM-191, "Adjustment"](#).

# DIFFERENTIAL SIDE OIL SEAL

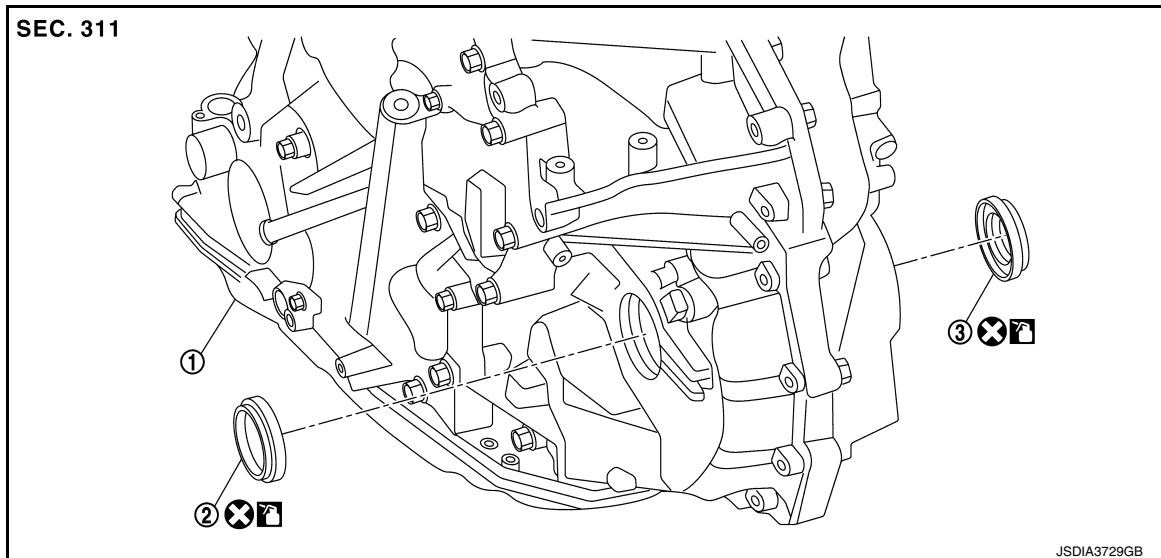
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## DIFFERENTIAL SIDE OIL SEAL

Exploded View

INFOID:000000012428225



1. Transaxle assembly
2. Differential side oil seal (left side)
3. Differential side oil seal (right side) (FWD models only)

## Removal and Installation

INFOID:000000012735193

### REMOVAL

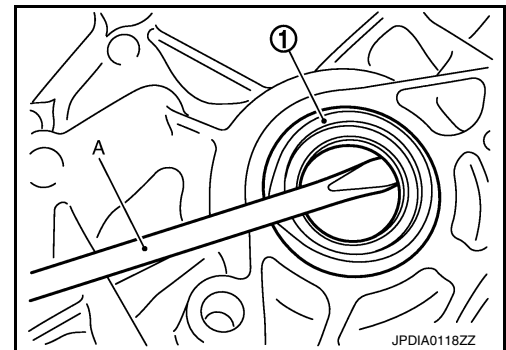
#### NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove front drive shaft. Refer to [FAX-19, "Removal and Installation \(LH\)"](#) (FWD) or [FAX-57, "Removal and Installation \(LH\)"](#) [LH (AWD)] or [FAX-61, "Removal and Installation \(RH\)"](#) [RH(AWD)].
2. Remove differential side oil seal (1) using suitable tool (A).

#### CAUTION:

Be careful not to scratch transaxle case and converter housing.



### INSTALLATION

Note the following, and installation is in the reverse order of removal.

#### CAUTION:

When inserting the drive shaft, be sure to use Tool.

Tool number : ( — ) KV38107900

# DIFFERENTIAL SIDE OIL SEAL

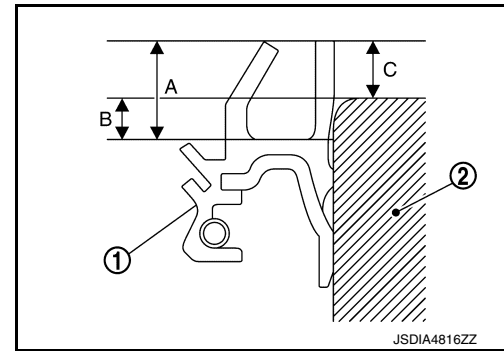
## < REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

1. Measure height (A) of seal lip. Calculate protrusion (C) of oil seal lip according to measured height (A) of seal lip and reference value (B) of side oil insertion.

- (1) : Differential side oil seal  
 (2) : Converter housing or transaxle case

**Lip protrusion (C) :  $C=A-B$**   
**Differential side oil seal insertion reference value (B): 1.8 mm (0.071 in)**



### CAUTION:

- Do not reuse differential side oil seal.
- Put a mark on the measurement area and measure height of seal lip at four points diagonally using suitable tool.

### NOTICE:

Since seal lips have a tolerance of  $\pm 0.3$  mm ( $\pm 0.012$  in) at maximum due to manufacturing tolerances or packing conditions, it is necessary to measure the seal lip height beforehand to clarify the tolerance.

2. As an indicator of the parallelism and insertion depth, cut a masking tape (1) to specified width [add 1 mm (0.04 in) to the value calculated from the tip of differential side oil seal lip] and affix to the differential side oil seal.
3. Install the differential side oil seal using a drift [outer diameter: 53 mm (2.09 in), inner diameter: 50 mm (1.97 in)] according to the guide of the masking tape (1).

### CAUTION:

- If differential side oil seal is inserted deeper than the reference value, use a new differential side oil seal and perform the steps again.
- Apply ATF to the differential side oil seal lip and around the oil seal.

### NOTE:

A hub cap (Part No. 43234 1HA0A) can be used as substitute for drift. To use a hub cap, be sure to prepare a new one specifically for patting seal.

4. Remove masking tape.
5. Adjust as instructed below to optimize the protrusion size and parallelism.

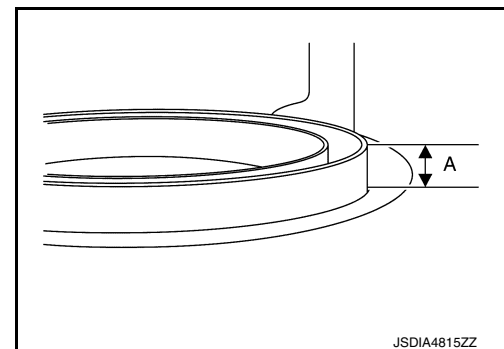
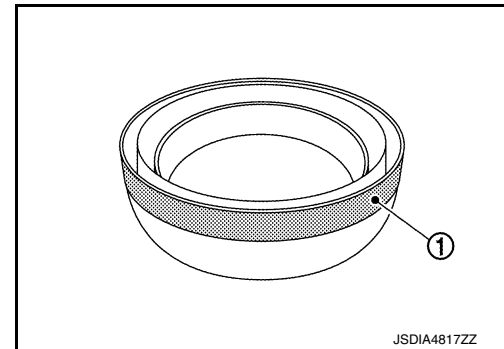
### CAUTION:

If differential side oil seal is inserted deeper than the reference value, use a new differential side oil seal and perform the steps again.

- Protrusion size (A)

### CAUTION:

Protrusion must fall within  $\pm 0.5$ mm (0.020 in) of calculated size.



# DIFFERENTIAL SIDE OIL SEAL

< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

- Parallelism at four diagonal points (➡)

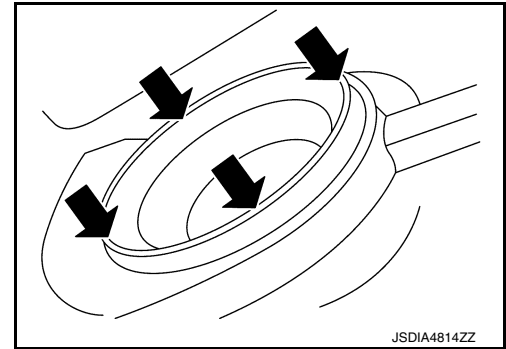
**CAUTION:**

The difference among four diagonal points must be within 0.3 mm (0.012 in).

**NOTE:**

If differential side oil seal is uneven while installing, tilt suitable tool.

6. Check that the protrusion size and parallelism are adequate.



JSDIA4814ZZ

Differential Side Oil Seal (Converter housing side) (FWD Models)

**CAUTION:**

When inserting the drive shaft, be sure to use Tool.

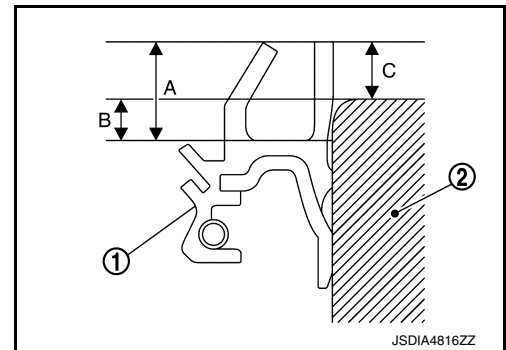
**Tool number** : ( — ) KV38107900

1. Measure height (A) of seal lip. Calculate protrusion (C) of oil seal lip according to measured height (A) of seal lip and reference value (B) of side oil insertion.

- (1) : Differential side oil seal
- (2) : Converter housing or transaxle case

**Lip protrusion (C)** :  $C=A-B$

**Differential side oil seal insertion reference value (B):** : 1.8 mm (0.071 in)



JSDIA4816ZZ

**CAUTION:**

- Do not reuse differential side oil seal.
- Put a mark on the measurement area and measure height of seal lip at four points diagonally using suitable tool.

**NOTICE:**

Since seal lips have a tolerance of  $\pm 0.3$  mm ( $\pm 0.012$  in) at maximum due to manufacturing tolerances or packing conditions, it is necessary to measure the seal lip height beforehand to clarify the tolerance.

2. As an indicator of the parallelism and insertion depth, cut a masking tape (1) to specified width [add 1 mm (0.04 in) to the value calculated from the tip of differential side oil seal lip] and affix to the differential side oil seal.
3. Install the differential side oil seal using a drift [outer diameter: 53 mm (2.09 in), inner diameter: 50 mm (1.97 in)] according to the guide of the masking tape (1).

**CAUTION:**

- If differential side oil seal is inserted deeper than the reference value, use a new differential side oil seal and perform the steps again.
- Apply ATF to the differential side oil seal lip and around the oil seal.

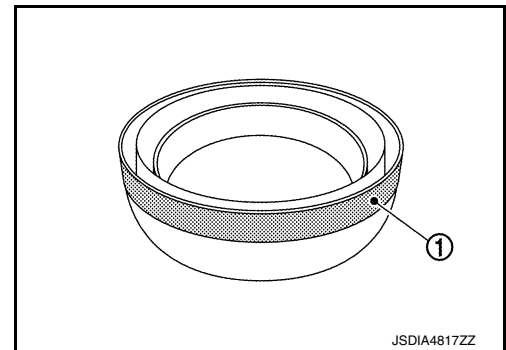
**NOTE:**

A hub cap (Part No. 43234 1HA0A) can be used as substitute for drift. To use a hub cap, be sure to prepare a new one specifically for patting seal.

4. Remove masking tape.
5. Adjust as instructed below to optimize the protrusion size and parallelism.

**CAUTION:**

If differential side oil seal is inserted deeper than the reference value, use a new differential side oil seal and perform the steps again.



JSDIA4817ZZ

# DIFFERENTIAL SIDE OIL SEAL

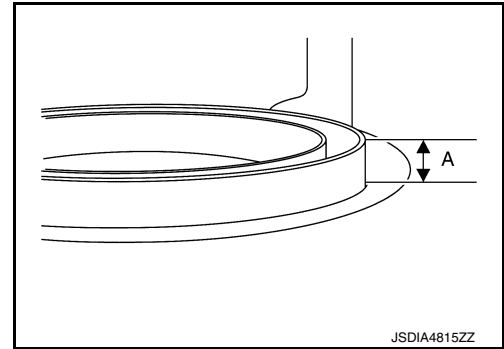
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

- Protrusion size (A)

**CAUTION:**

Protrusion must fall within  $\pm 0.5\text{mm}$  (0.020 in) of calculated size.



A

B

C

TM

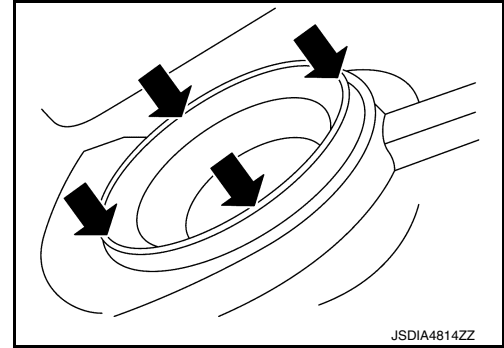
- Parallelism at four diagonal points (↔)

**CAUTION:**

The difference among four diagonal points must be within 0.3 mm (0.012 in).

**NOTE:**

If differential side oil seal is uneven while installing, tilt suitable tool.



E

F

G

Differential Side Oil Seal (Converter housing side) (AWD)

**CAUTION:**

- Do not reuse differential side oil seal.
- Apply ATF to the differential side oil seal lip and around the oil seal.

1. Install differential side oil seal evenly using a drift [outer diameter: 60 mm (2.36 in)] so that differential side oil seal protrudes by the dimension (A) respectfully.

**Dimension (A)**

**: Height difference from case end surface is within  $1.0 \pm 0.5\text{ mm}$  ( $0.039 \pm 0.020$  in).**

H

I

J

K

**NOTE:**

The reference is the installation direction of the differential side oil seal.

## Inspection and Adjustment

INFOID:000000012428227

### INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

### ADJUSTMENT AFTER INSTALLATION

Adjust the CVT fluid level. Refer to [TM-191, "Adjustment"](#).

L

M

N

O

P

# WATER HOSE

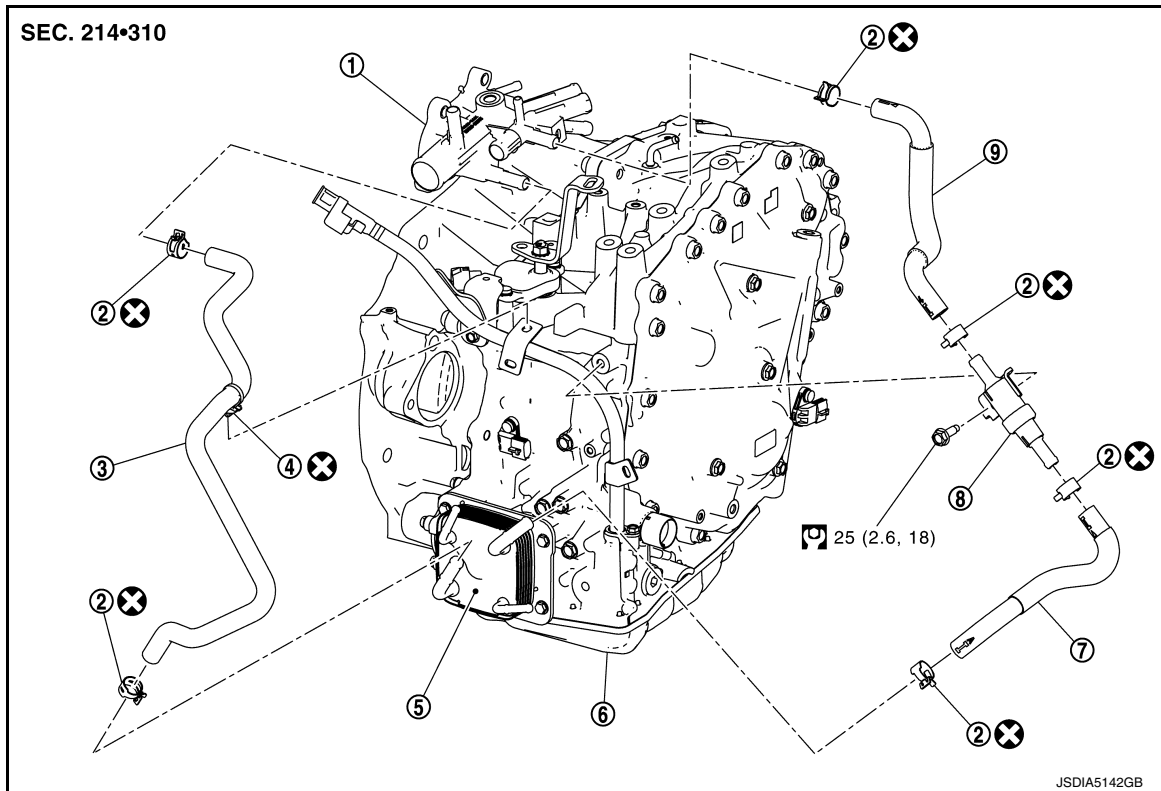
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## WATER HOSE

### Exploded View

INFOID:000000012428228



- |                 |                      |                       |
|-----------------|----------------------|-----------------------|
| 1. Water outlet | 2. Hose clamp        | 3. Water hose A       |
| 4. Clip         | 5. CVT oil warmer    | 6. Transaxle assembly |
| 7. Water hose B | 8. Heater thermostat | 9. Water hose C       |

### Removal and Installation

INFOID:000000012428229

#### 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.

##### **NOTE:**

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove battery tray. Refer to [PG-81, "Removal and Installation \(Battery Tray\)"](#).
2. Remove engine under cover. Refer to [EXT-36, "ENGINE UNDER COVER : Removal and Installation"](#).
3. Remove CVT fluid charging pipe. Refer to [TM-222, "Exploded View"](#).
4. Remove fender protector side cover. Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
5. Remove water hose A, B, C, and heater thermostat.

#### INSTALLATION

Installation is in the reverse order of removal.

##### **CAUTION:**

- Do not reuse hose clamps.
- Do not reuse hose clip

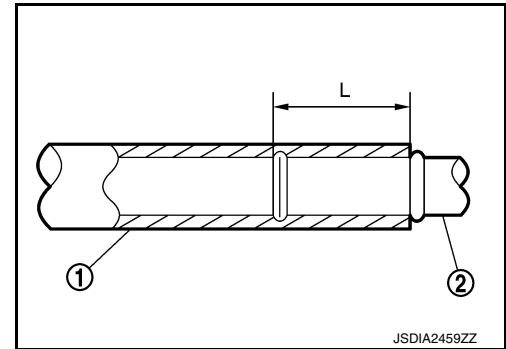
# WATER HOSE

< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

- **Securely install the water hose clip to the bracket hole of charging pipe.**
- Refer to the following when installing water hoses.

Water hose (1)	Installation side tube (2)	Direction of paint mark	Hose insertion depth (L)
Water hose A	Water outlet	Upward	End reaches the end of tube.
	CVT oil warmer	Frontward	
Water hose B	CVT oil warmer	Frontward	End reaches the 2-stage bulge.
	Heater thermostat	Align with the mark on the heater thermostat	
Water hose C	Heater thermostat	Align with the mark on the heater thermostat	End reaches the expansion part.
	Water outlet	Upward	End reaches the 2-stage bulge.

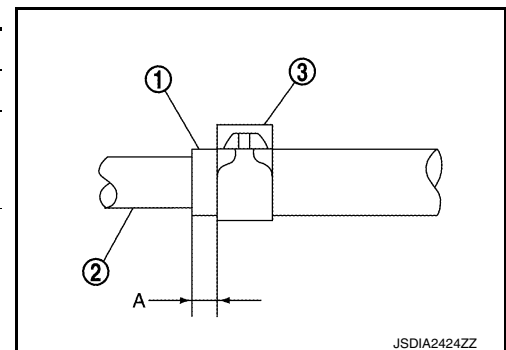


- Refer to the followings when installing hose clamp.

**CAUTION:**

**Hose clamp should not interfere with the bulge of tube.**

Water hose (1)	Installation side tube (2)	Hose clamp (3)	
		Direction of tab	Clamping position
Water hose A	Water outlet	Upward	5 – 7 mm (0.20 – 0.28 in) (A) from hose end
	CVT oil warmer	Leftward	
Water hose B	CVT oil warmer	Leftward	5 – 9 mm (0.20 – 0.35 in) (A) from hose end
	Heater thermostat	Align with the mark on the hose	
Water hose C	Heater thermostat	Align with the mark on the hose	5 – 9 mm (0.20 – 0.35 in) (A) from hose end
	Water outlet	Forward and 45° upward	



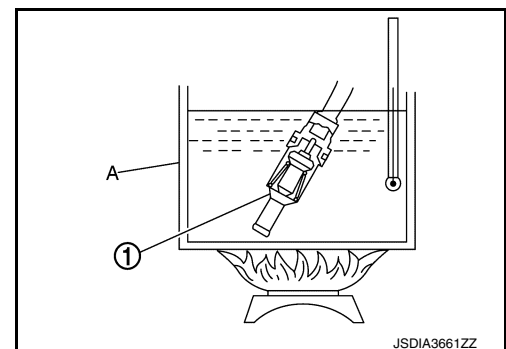
## Inspection

INFOID:0000000012428230

### INSPECTION AFTER REMOVAL

#### Heater Thermostat

1. Fully immerse the heater thermostat ① in a container (A) filled with water. Continue heating the water while stirring.
2. Continue heating the heater thermostat for 5 minutes or more after bringing the water to a boil.



3. Quickly take the heater thermostat out of the hot water, measure the heater thermostat within 10 seconds.

## WATER HOSE

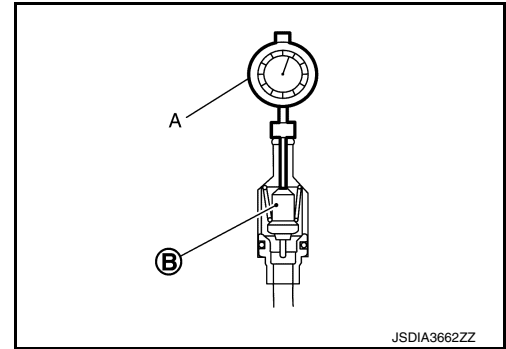
### < REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

- Place dial indicator (A) on the pellet (B) and measure the elongation from the initial state.

**Standard** : Refer to [TM-228, "Heater Thermostat"](#).

4. If out of standard, replace heater thermostat.



### INSPECTION AFTER INSTALLATION

Start the engine, and check the joints for coolant leakage.



# FLUID COOLER HOSE

< REMOVAL AND INSTALLATION >

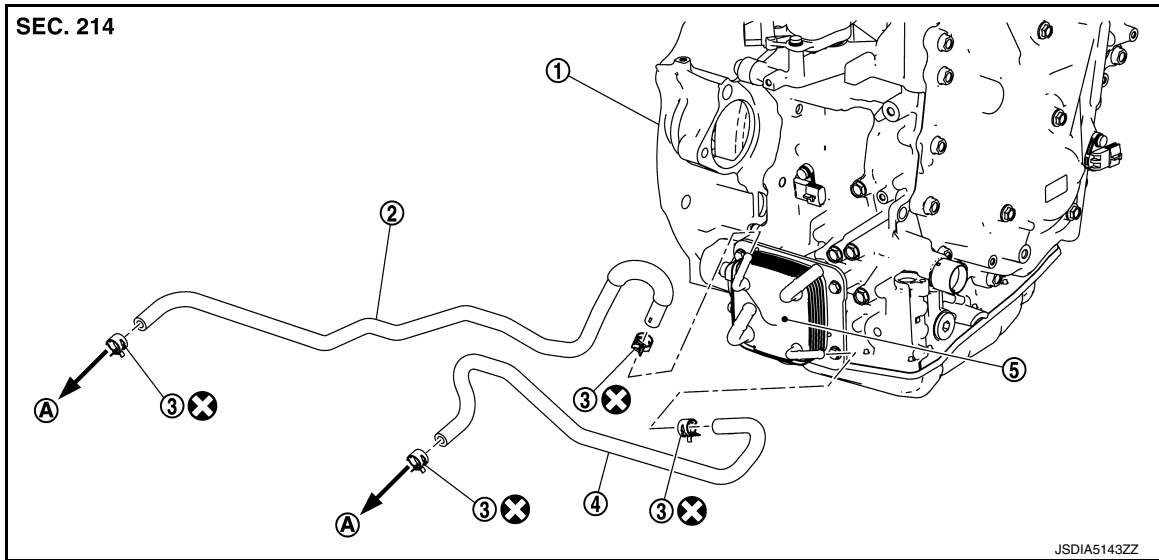
[CVT: RE0F10D]

## FLUID COOLER HOSE

Exploded View

INFOID:000000012428231

### COMPONENT PARTS LOCATION



- 1. Transaxle assembly
- 2. Fluid cooler hose A
- 3. Hose clamp
- 4. Fluid cooler hose B
- 5. CVT oil warmer
- A. To radiator

## Removal and Installation

INFOID:000000012428232

### REMOVAL

#### NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove engine under cover. Refer to [EXT-36, "ENGINE UNDER COVER : Removal and Installation"](#).
2. Remove fender protector side cover. Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
3. Remove fluid cooler hoses.

### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

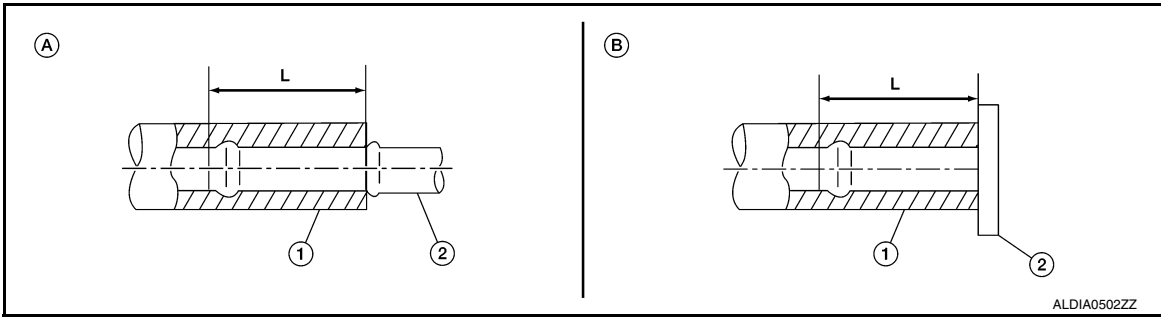
- Do not reuse hose clamp.
- Securely install fluid cooler hose A clip to the radiator core support.
- Refer to the followings when installing fluid cooler hoses.

Fluid cooler hose (1)	Installation side tube (2)	Direction of paint mark	Hose insertion depth (L)
Fluid cooler hose A	CVT oil warmer	Frontward	A: End reaches the 2 step bulge
	Radiator	Downward	B: Insert the hose until hose touches the radiator
Fluid cooler hose B	Radiator	Downward	B: Insert the hose until hose touches the radiator
	CVT oil warmer	Downward	A: End reaches the 2 step bulge

# FLUID COOLER HOSE

< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

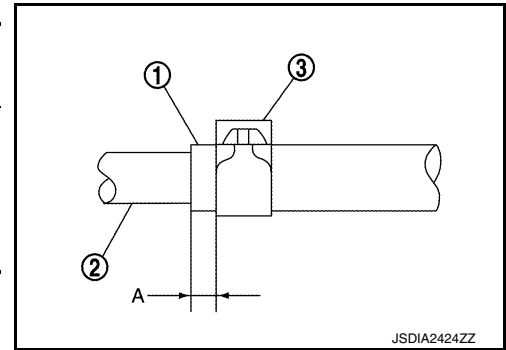


- Refer to the followings when installing hose clamps.

**CAUTION:**

**Hose clamp should not interfere with the bulge of tube.**

Fluid cooler hose (1)	Installation side tube (2)	Hose clamp (3)	
		Direction of tab	Clamping position
Fluid cooler hose A	CVT oil warmer	Frontward	5 – 9 mm (0.20 – 0.35 in) (A) from hose end
	Radiator	Downward	
Fluid cooler hose B	Radiator	Downward	
	CVT oil warmer	Upward	



## Inspection

INFOID:000000012428233

### INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage and check CVT fluid level. Refer to [TM-189. "Inspection"](#).

# CVT OIL WARMER

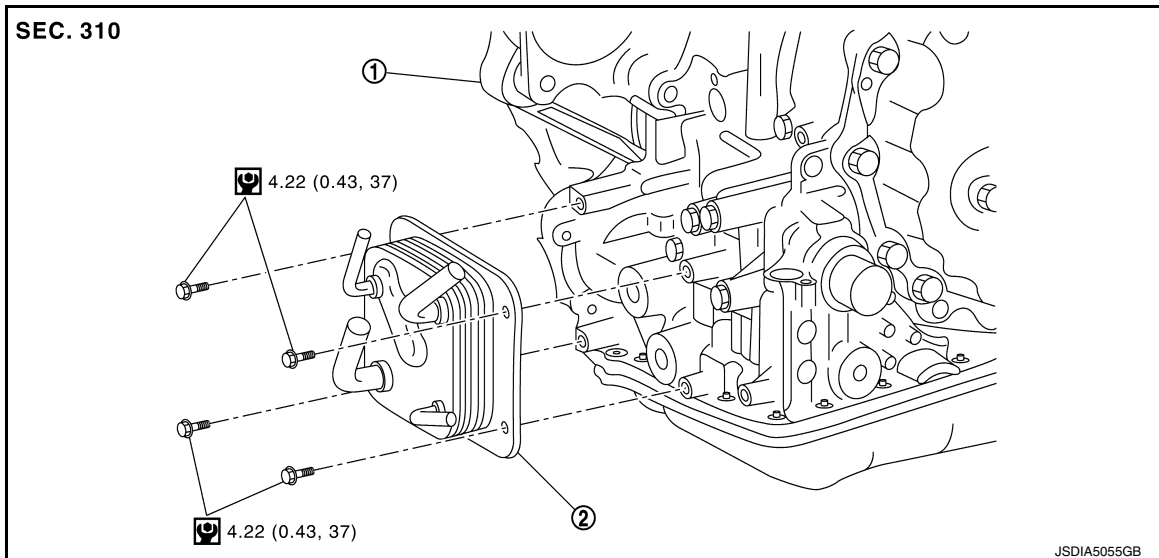
< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## CVT OIL WARMER

Exploded View

INFOID:000000012428234



1. Transaxle assembly
2. CVT oil warmer

## Removal and Installation

INFOID:000000012428235

### REMOVAL

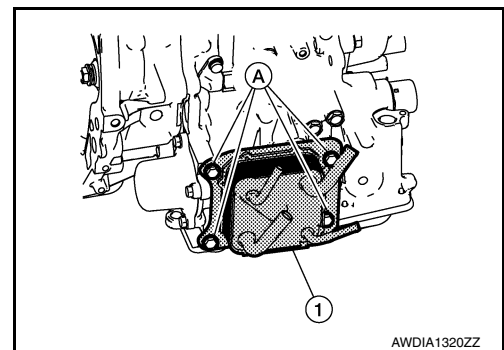
#### **WARNING:**

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.

1. Remove engine under cover. Refer to [EXT-36, "ENGINE UNDER COVER : Removal and Installation"](#).
2. Remove air duct. Refer to [EM-26, "Removal and Installation"](#).
3. Remove fender protector side cover. Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
4. Disconnect water hoses from CVT oil warmer. Refer to [TM-214, "Exploded View"](#).
5. Disconnect fluid cooler hoses from CVT oil warmer. Refer to [TM-217, "Exploded View"](#).
6. Remove CVT oil warmer bolts (A) and remove CVT oil warmer (1) from transaxle assembly.



### INSTALLATION

Installation is in the reverse order of removal.

### Inspection

INFOID:000000012428236

### INSPECTION AFTER INSTALLATION

## CVT OIL WARMER

< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

---

- Check for CVT fluid leakage and check CVT fluid level. Refer to [TM-189. "Inspection"](#).
- Start and warm up the engine. Visually check that there is no leakage of engine coolant and CVT fluid.

# PLUG

< REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

## PLUG

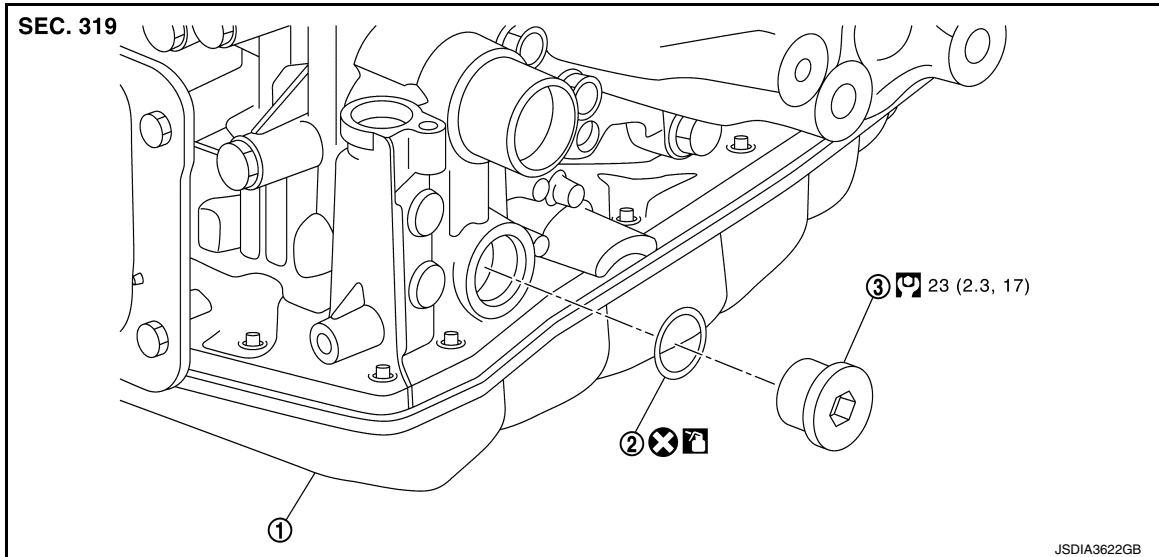
### Description

INFOID:000000012428237

Replace the O-ring if oil leakage or exudes from the plug.

### Exploded View

INFOID:000000012428238



1. Transaxle assembly

2. O-ring

3. Plug

### Removal and Installation

INFOID:000000012428239

#### REMOVAL

1. Partially remove front fender protector (LH). Refer to [EXT-29, "FENDER PROTECTOR : Exploded View"](#).
2. Remove the plug and O-ring.

#### INSTALLATION

Installation is in the reverse order of removal.

#### CAUTION:

- Do not reuse O-ring.
- Apply CVT fluid to O-ring.

### Inspection and Adjustment

INFOID:000000012428240

#### INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to [TM-189, "Inspection"](#).

#### ADJUSTMENT AFTER INSTALLATION

Adjust the CVT fluid level. Refer to [TM-191, "Adjustment"](#).

# TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

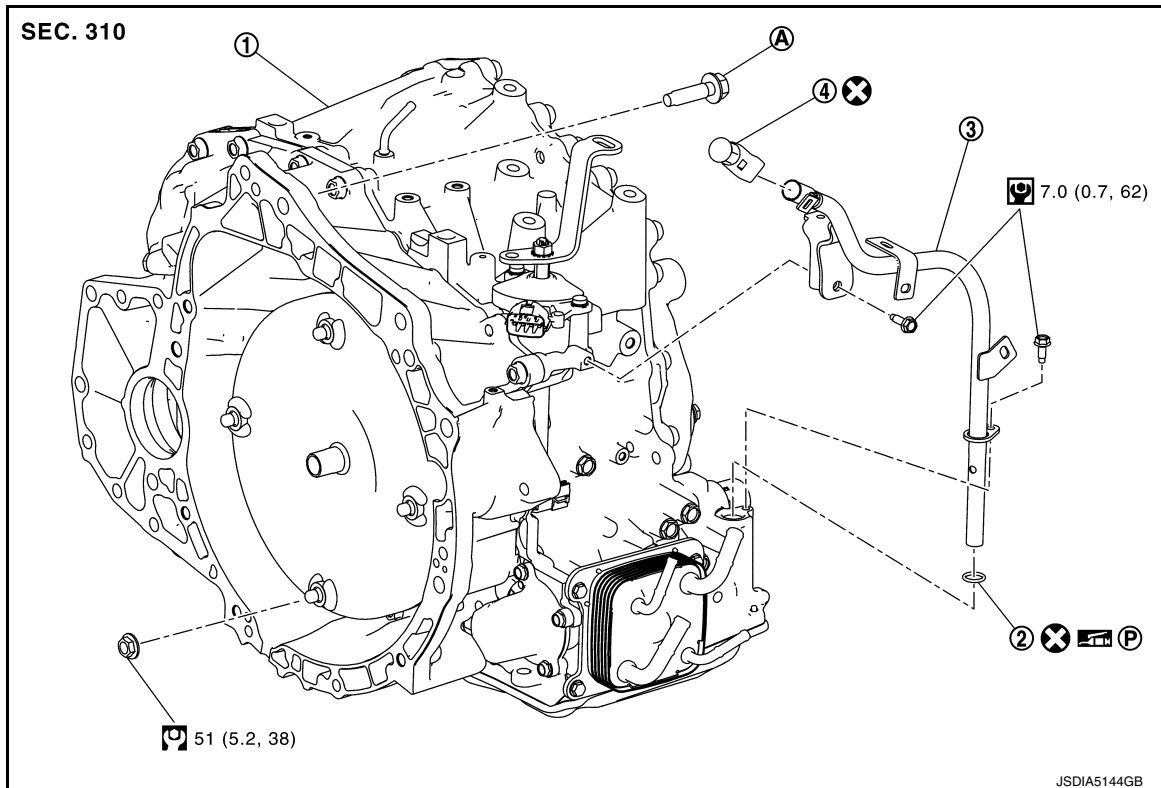
[CVT: RE0F10D]

## UNIT REMOVAL AND INSTALLATION

### TRANSAXLE ASSEMBLY

Exploded View

INFOID:000000012428241



1. Transaxle assembly
  2. O-ring
  3. CVT fluid charging pipe
  4. CVT fluid charging pipe cap
- A. : For the tightening torque, refer to [TM-222, "Removal and Installation"](#).

## Removal and Installation

INFOID:000000012428242

### 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 TCM and transaxle assembly as a set, replace the transaxle assembly first and then replace the TCM. Refer to [TM-81, "Description"](#).
- When replacing the transaxle assembly, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY." Refer to [TM-83, "Description"](#).

#### NOTE:

When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Remove engine and transaxle assembly. Refer to [EM-86, "Removal and Installation \(FWD\)"](#) (FWD) or [EM-90, "Removal and Installation \(AWD\)"](#) (AWD).
2. Remove the CVT water hoses from engine side. Refer to [TM-214, "Removal and Installation"](#).
3. Remove the transaxle to engine and engine to transaxle bolts.

# TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

- Separate the engine from the transaxle and remove the transaxle from the front suspension member. Refer to [EM-86, "Removal and Installation \(FWD\)"](#) (FWD) or [EM-90, "Removal and Installation \(AWD\)"](#) (AWD).

**NOTE:**

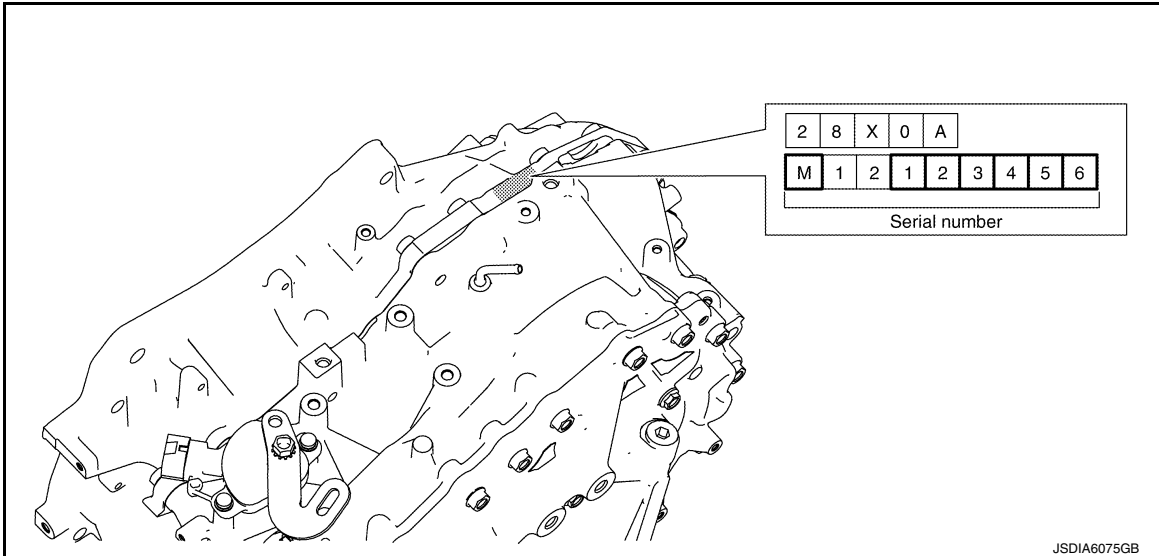
Using paint, put matching marks on the drive plate and torque converter when removing the torque converter to drive plate nuts.

**INSTALLATION**

Installation is in the reverse order of removal.

**NOTE:**

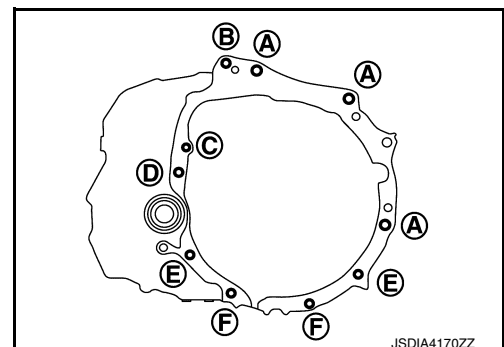
Write down the serial number of the new transaxle assembly.



**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 breakage 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-50, "Removal and Installation"](#).
  - 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.
- 
- When installing the drive plate to torque converter nuts, tighten them temporarily. then tighten the nuts to the specified torque.
  - Install the transaxle assembly and engine assembly mounting bolts according to the following standards.

Bolt No.	(A)	(B)	(C)	(D)	(E)	(F)
Insertion direction	Transaxle to engine		Engine to transaxle			
Number of bolts	3	1	1	1	2	2
Bolt length "ℓ" mm (in)	45 (1.77)	45 (1.77)	45 (1.77)	45 (1.77)	45 (1.77)	35 (1.38)



# TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F10D]

Bolt No.	(A)	(B)	(C)	(D)	(E)	(F)
Bolt pitch mm	1.75	1.5	1.5	1.75	1.5	—
Tightening torque N·m (kg-m, ft-lb)	74.5 (7.6, 55)	50.0 (5.1, 37)	50.0 (5.1, 37)	74.5 (7.6, 55)	50.0 (5.1, 37)	

- Perform "ADDITIONAL SERVICE WHEN REPLACE TRANSAXLE ASSEMBLY". Refer to [TM-83, "Description"](#).

## Inspection and Adjustment

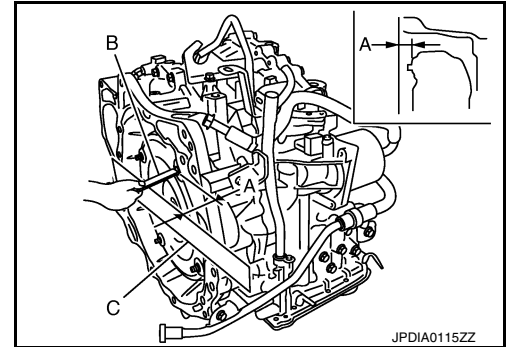
INFOID:000000012428243

### 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-228, "Torque Converter"](#).



### INSPECTION AFTER INSTALLATION

Check the following items:

- CVT fluid leakage, refer to [TM-189, "Inspection"](#).
- For CVT position, refer to [TM-196, "Inspection"](#).
- 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"](#).



# TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

< UNIT DISASSEMBLY AND ASSEMBLY >

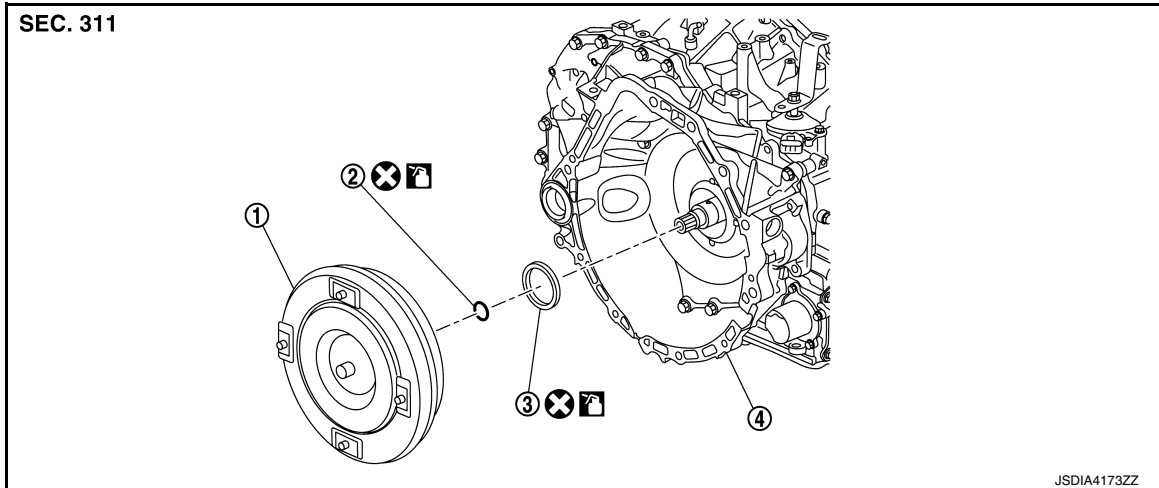
[CVT: RE0F10D]

## UNIT DISASSEMBLY AND ASSEMBLY

### TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

Exploded View

INFOID:0000000012428244



① Torque converter                      ② O-ring                      ③ Converter housing oil seal

④ Transaxle assembly

⊗ : Always replace after every disassembly.

☑ : Apply CVT fluid

### Disassembly

INFOID:0000000012428245

1. Remove transaxle assembly. Refer to [TM-222, "Removal and Installation"](#).
2. Remove torque converter from transaxle assembly.  
**CAUTION:**  
**Never damage the bushing on the inside of torque converter sleeve when removing torque converter.**
3. Remove O-ring from input shaft.
4. Remove converter housing oil seal using a suitable tool.  
**CAUTION:**  
**Be careful not to scratch converter housing.**

### Assembly

INFOID:0000000012428246

Note the followings and assembly is in the reverse order of disassembly.

- CAUTION:**
- Never reuse O-ring.
  - Never reuse converter housing oil seal.
  - Apply CVT fluid to O-ring.
  - Apply CVT fluid to converter housing oil seal.

# TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

< UNIT DISASSEMBLY AND ASSEMBLY >

[CVT: RE0F10D]

- 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)

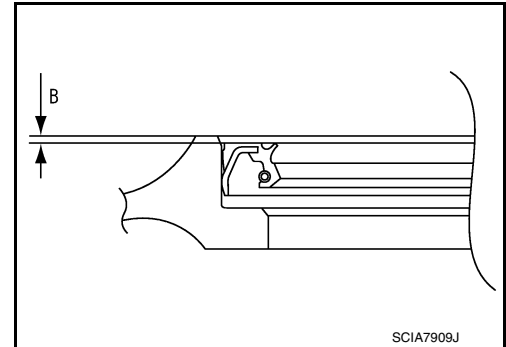
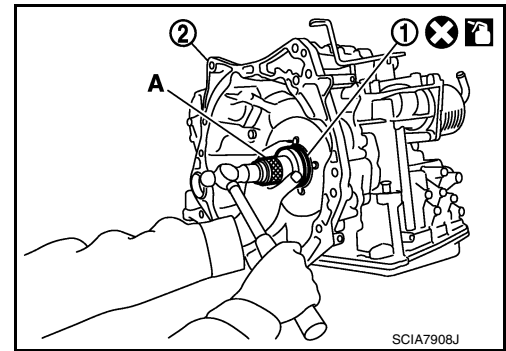
Commercial service tool: (A)	Outer diameter: 65 (2.56)
	Inner diameter: 60 (2.36)

② : Transaxle assembly

**Dimension (B) :  $1.0 \pm 0.5$  mm ( $0.039 \pm 0.020$  in)**

**NOTE:**

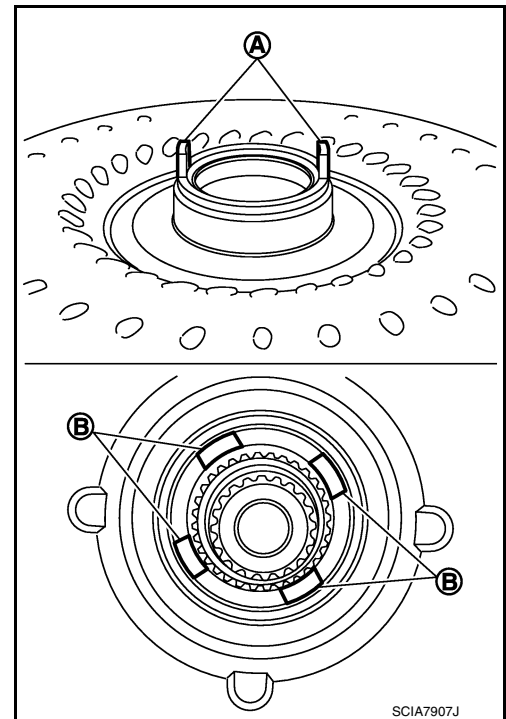
Converter housing oil seal pulling direction is used as the reference.



- 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.
- Never damage the bushing inside the torque converter sleeve when installing the converter housing oil seal.



Inspection

INFOID:000000012428247

INSPECTION AFTER INSTALLATION

# TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

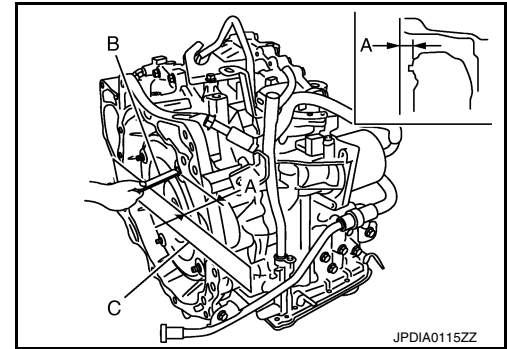
< UNIT DISASSEMBLY AND ASSEMBLY >

[CVT: RE0F10D]

- 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-228, "Torque Converter"](#).



A  
B  
C  
TM  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O  
P

## SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[CVT: RE0F10D]

# SERVICE DATA AND SPECIFICATIONS (SDS)

## SERVICE DATA AND SPECIFICATIONS (SDS)

### General Specification

INFOID:0000000012428248

Applied model	Engine	QR25DE
	Axle	FWD/AWD
Transaxle model		RE0F10D
Transaxle gear ratio	D position	2.648 – 0.380
	R position	1.973
	Final drive	5.694
Recommended fluid		Refer to <a href="#">MA-11, "Fluids and Lubricants"</a> .
Fluid capacity liter (US qt, Imp qt)		

### Shift Characteristics

INFOID:0000000012428249

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)	1,550 – 1,950	1,700 – 2,100
	"D" position (O/D OFF)	1,400 – 1,800	2,100 – 2,500
	"L" position	2,700 – 3,100	3,800 – 4,200
8/8	"D" position (Normal)	4,110 – 4,510	5,580 – 5,980
	"D" position (O/D OFF)	4,310 – 4,710	5,500 – 5,900
	"L" position	4,310 – 4,710	5,500 – 5,900

**NOTE:**

Lock-up is engaged at the vehicle speed of approximately 18 km/h (12 MPH) to 25 km/h (16 MPH).

### Stall Speed

INFOID:0000000012428250

Unit: rpm

Stall speed	2,370 – 2,760
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### Torque Converter

INFOID:0000000012428251

Unit: mm (in)

Dimension "A" between the converter housing and torque converter	14.4 (0.567)
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### Heater Thermostat

INFOID:0000000012428252

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)