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TRANSAXLE & TRANSMISSION

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HOW TO USE THIS MANUAL

HOW TO USE THIS SECTION

Information

INFOID:0000000014629920

In this manual, “Hybrid CVT” adopted to this vehicle is described as “CVT”.

PRECAUTION

PRECAUTIONS

High Voltage Precautions

INFOID:0000000014629921

DANGER:

**Since hybrid vehicles and electric vehicles contain a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents if the high voltage component and vehicle are handled incorrectly. Be sure to follow the correct work procedures when performing inspection and maintenance.**

WARNING:

- **Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.**
- **The removed service plug must always be carried in a pocket of the responsible worker or placed in the tool box during the procedure to prevent the plug from being connected by mistake.**
- **Be sure to wear insulating protective equipment consisting of glove, shoes, face shield and glasses before beginning work on the high voltage system.**
- **Never allow workers other than the responsible person to touch the vehicle containing high voltage parts. To keep others from touching the high voltage parts, these parts must be covered with an insulating sheet except when using them.**

CAUTION:

Never bring the vehicle into the READY status with the service plug removed unless otherwise instructed in the Service Manual. A malfunction may occur if this is not observed.

HIGH VOLTAGE HARNESS AND EQUIPMENT IDENTIFICATION

All the high voltage harnesses and connectors are orange. The Li-ion battery and other high voltage devices include an orange high voltage label. Never touch these harnesses and high voltage parts.

HANDLING OF HIGH VOLTAGE HARNESS AND TERMINALS

Immediately insulate disconnected high voltage connectors and terminals with insulating tape.

REGULATIONS ON WORKERS WITH MEDICAL ELECTRONICS

WARNING:

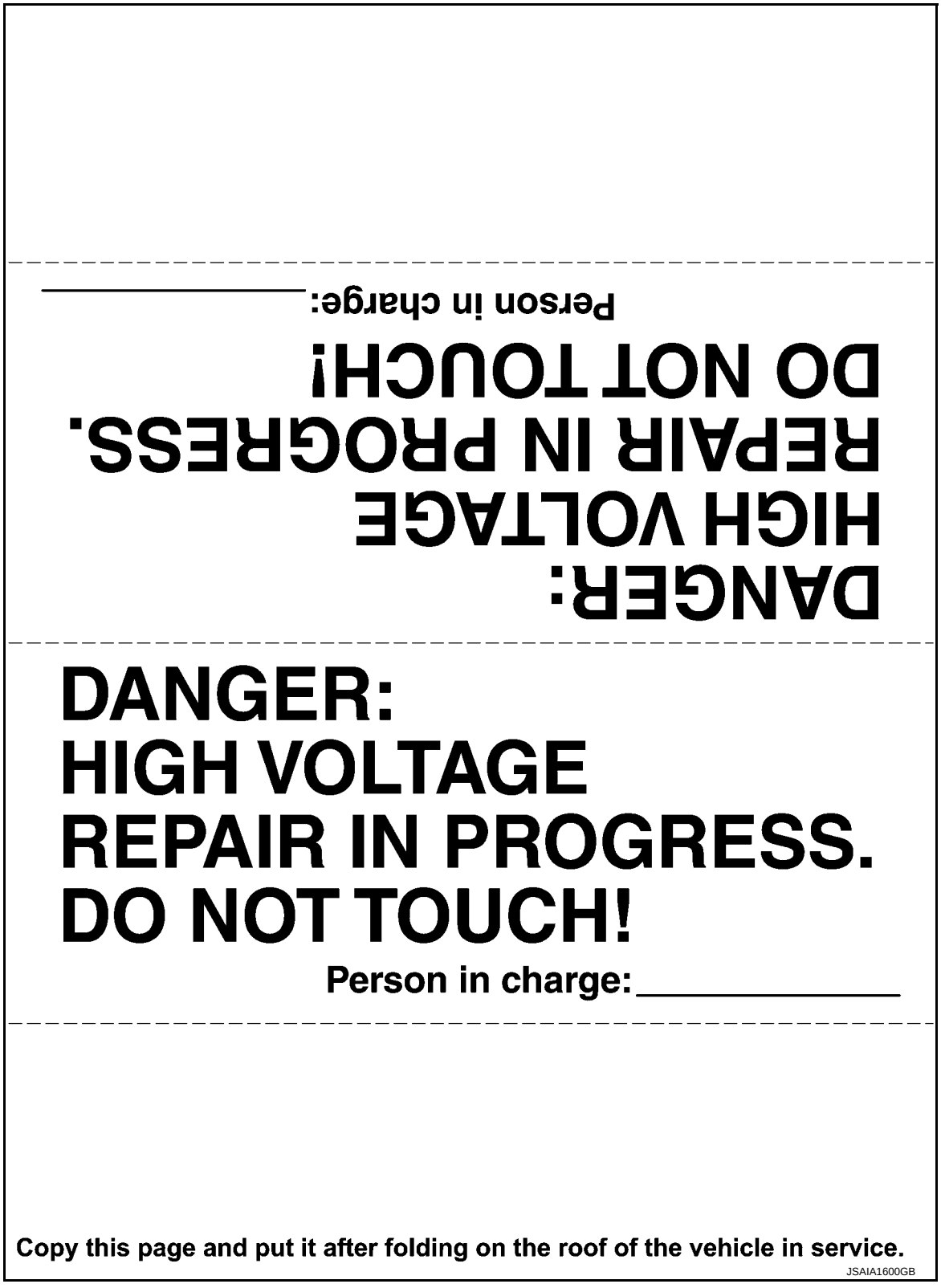
The vehicle contains parts that contain powerful magnets. If a person who is wearing a heart pacemaker or other medical device is close to these parts, the medical device may be affected by the magnets. Such persons must not perform work on the vehicle.

PROHIBITED ITEMS TO CARRY DURING THE WORK

Hybrid vehicles and electric vehicles contain parts with high voltage and intense magnetic force. Never carry metal products and magnetic recording media (e.g. cash card, prepaid card) to repair/inspect high voltage parts. If this is not observed, the metal products may create a risk of short circuit and the magnetic recording media may lose their magnetic recording.

POSTING A SIGN OF “DANGER! HIGH VOLTAGE AREA. KEEP OUT”

Indicate "HIGH VOLTAGE. DO NOT TOUCH" on the vehicle under repair/inspection to call attention to other workers.



Precautions Concerning On-board Servicing of Hybrid Systems

INFOID:0000000014629922

CAUTION:

Be sure to turn the ignition switch OFF before performing inspection and servicing inside the engine compartment or underneath the vehicle. If the ignition switch is ON (vehicle READY state), even if the engine is stopped, the conditions of the vehicle may cause the engine to start automatically.

If it is necessary to continually operate the engine during inspection or servicing, use the designated inspection mode. HBC-113, "Description".

Precaution for Technicians Using Medical Electric

INFOID:0000000014629923

OPERATION PROHIBITION

WARNING:

- **Parts with strong magnet is used in this vehicle.**
- **Technicians using a medical electric device such as pacemaker must never perform operation on the vehicle, as magnetic field can affect the device function by approaching to such parts.**

NORMAL CHARGE PRECAUTION

WARNING:

- **If a technician uses a medical electric device such as an implantable cardiac pacemaker or an implantable cardioverter defibrillator, the possible effects on the devices must be checked with the device manufacturer before starting the charge operation.**
- **As radiated electromagnetic wave generated by PDM (Power Delivery Module) at normal charge operation may affect medical electric devices, a technician using a medical electric device such as implantable cardiac pacemaker or an implantable cardioverter defibrillator must not approach motor room [PDM (Power Delivery Module)] at the hood-opened condition during normal charge operation.**

PRECAUTION AT TELEMATICS SYSTEM OPERATION

WARNING:

- **If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.**
- **The electromagnetic wave of TCU might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), when using the service, etc.**
- **If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of TCU might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before TCU use.**

PRECAUTION AT INTELLIGENT KEY SYSTEM OPERATION

WARNING:

- **If a technician uses implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), avoid the device implanted part from approaching within approximately 220 mm (8.66 in) from interior/exterior antenna.**
- **The electromagnetic wave of Intelligent Key might affect the function of the implantable cardiac pacemaker or the implantable cardioverter defibrillator (ICD), at door operation, at each request switch operation, or at engine starting.**
- **If a technician uses other medical electric devices than implantable cardiac pacemaker or implantable cardioverter defibrillator (ICD), the electromagnetic wave of Intelligent Key might affect the function of the device. The possible effects on the devices must be checked with the device manufacturer before Intelligent Key use.**

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

INFOID:0000000014808105

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, it is recommended that all maintenance and repair be performed by an authorized NISSAN/INFINITI dealer.**
- **Improper repair, 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

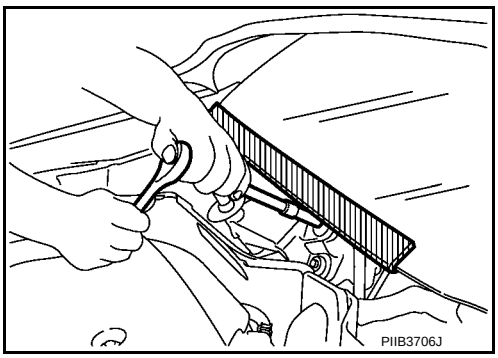
WARNING:

- **When working near the Air Bag Diagnosis Sensor Unit or other Air Bag 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 or batteries, and wait at least three minutes before performing any service.**

Precaution for Procedure without Cowl Top Cover

INFOID:0000000014629925

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:0000000014629926

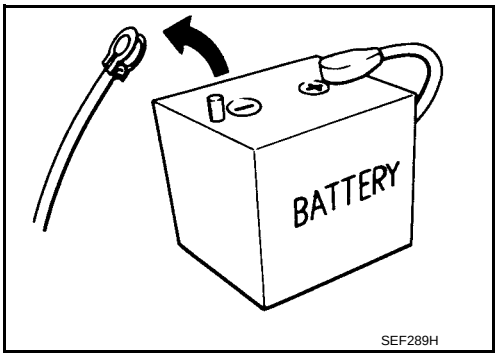
CAUTION:

- **To replace TCM, refer to TM-93, "Description".**
- **To replace transaxle assembly, refer to TM-95, "Description".**
- **To replace TCM and transaxle assembly simultaneously, refer to TM-97, "Description".**

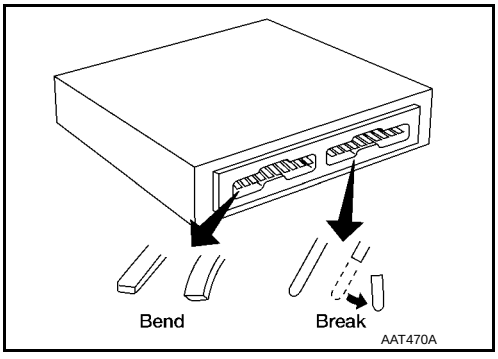
General Precautions

INFOID:0000000014629927

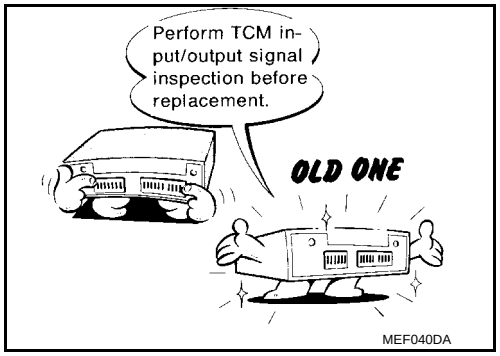
- **Turn ignition switch OFF and disconnect the battery cable from the negative terminal before connecting or disconnecting the CVT assembly harness connector. Because battery voltage is applied to TCM even if ignition switch is turned OFF.**



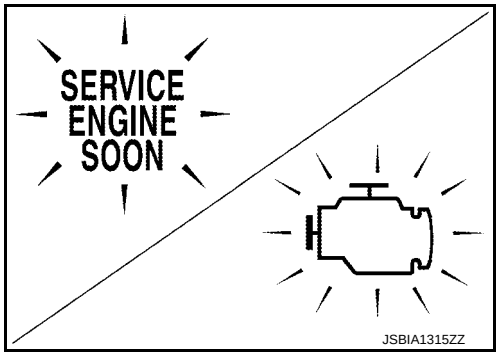
- **When connecting or disconnecting pin connectors into or from TCM, do not damage pin terminals (bend or break).**
  Check that there are not any bends or breaks on TCM pin terminal, when connecting pin connectors.



- **Perform TCM input/output signal inspection and check whether TCM functions normally or not before replacing TCM. Refer to TM-60, "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:0000000014629928

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.

CAUTION:

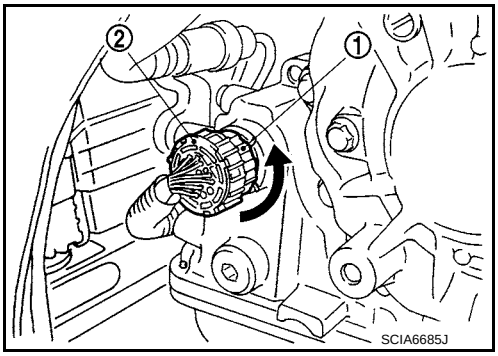
- **Be sure to turn the ignition switch OFF and disconnect the battery cable from the negative terminal before any repair or inspection work. The open/short circuit of related switches, sensors, solenoid valves, etc. will cause the MIL to light up.**
- **Be sure to connect and lock the connectors securely 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:0000000014629929

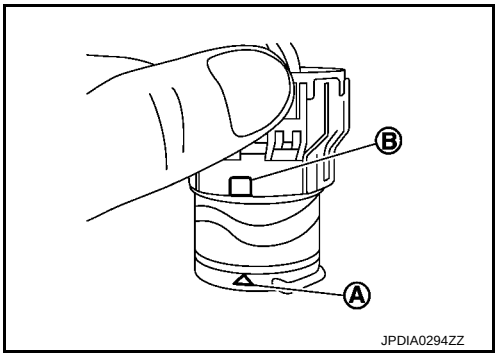
REMOVAL

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

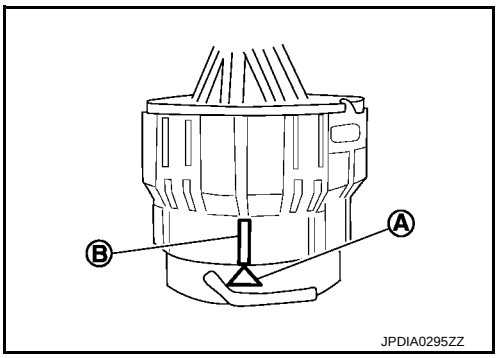


INSTALLATION

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

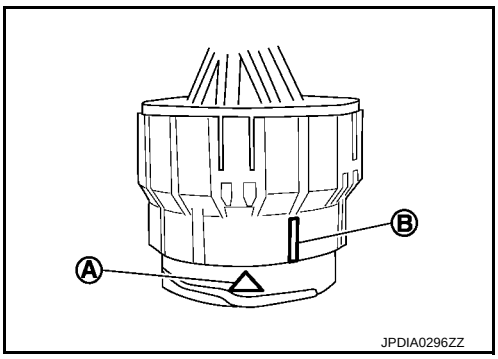


3. Rotate bayonet ring clockwise until marking Ⓐ on CVT unit harness connector terminal body is aligned with the slit Ⓑ on bayonet ring as shown in the figure (correctly fitting condition).



CAUTION:

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



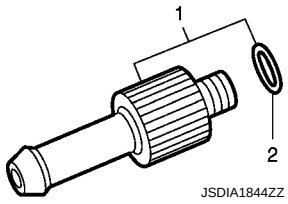
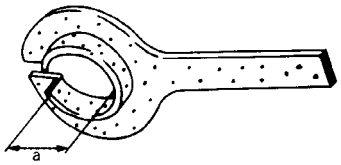
PREPARATION

PREPARATION

Special Service Tools

INFOID:0000000014629930

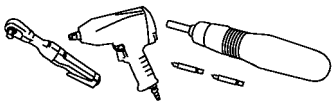
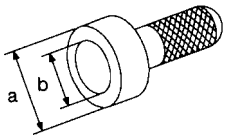
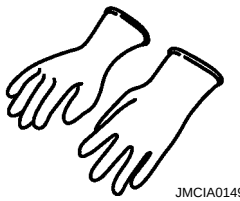
The actual shape of the tools may differ from those illustrated here.

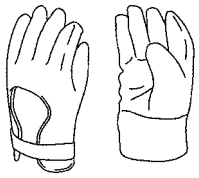
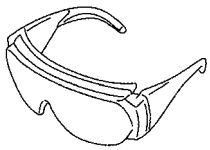
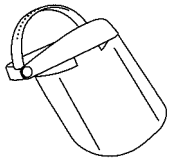
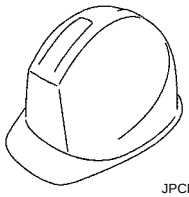
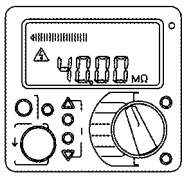
Tool number (TechMate No.) Tool name	Description
1. KV311039S0 (—) Charging pipe set 2. KV31103920* (—) O-ring  JSDIA1844ZZ	CVT fluid changing and adjustment
KV38107900 (—) Protector  PDIA1183J	Installing drive shaft **a: 32 mm (1.26 in) dia.**

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

Commercial Service Tools

INFOID:0000000014629931

Tool name	Description
Power tool  PIIB1407E	Loosening nuts, screws and bolts
Drift  NT115	Installing differential side oil seal **a: 56 mm (2.20 in) dia.** **b: 50 mm (1.97 in) dia.**
Insulated gloves  JMCIA0149ZZ	Removing and installing high voltage components [Guaranteed insulation performance for 1000V/300A]

Tool name	Description
Leather gloves  JPCIA0066ZZ	• Removing and installing high voltage components • Protect insulated gloves [Use leather gloves that can fasten the wrist tight]
Insulated safety shoes  JPCIA0011ZZ	Removing and installing high voltage components
Safety glasses  JPCIA0012ZZ	• Removing and installing high voltage components • To protect eye from the spatter on the work to electric line [ANSI Z87.1]
Face shield protection  JPCIA0167ZZ	• Removing and installing high voltage components • To protect eyes and face from the spatter on the work to electric line
Insulated helmet  JPCIA0013ZZ	Removing and installing high voltage components
Insulation resistance tester (Multi tester)  JPCIA0014ZZ	Measuring voltage and insulation resistance

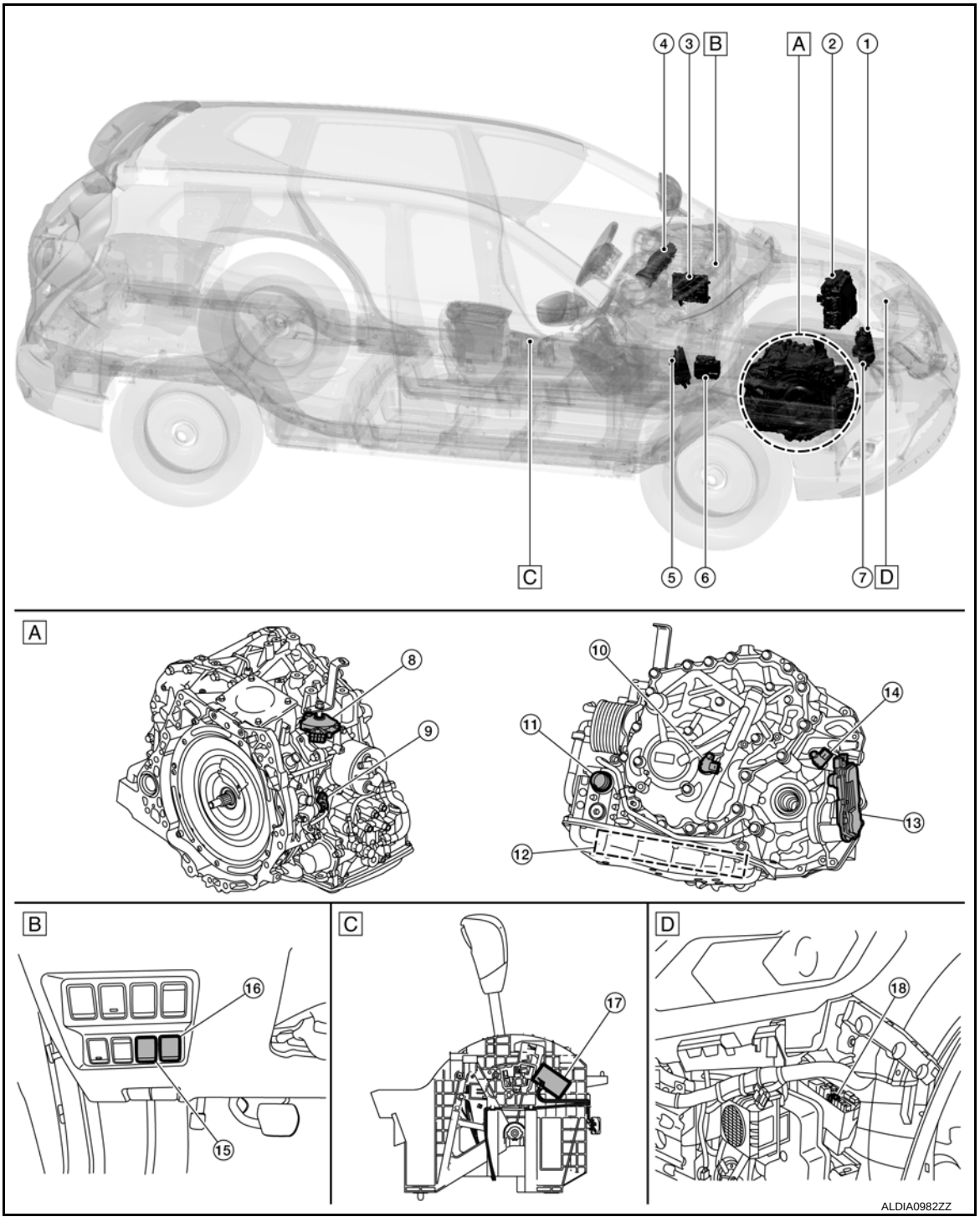
SYSTEM DESCRIPTION

COMPONENT PARTS

CVT CONTROL SYSTEM

CVT CONTROL SYSTEM : Component Parts Location

INFOID:0000000014907355



A Transaxle assembly
B Left side of insutrument panel
C CVT shift selector assembly
D Left front end of vehicle
⇦ : Vehicle front

No.	Component	Function
①	ECM	Mainly transmits the following signal to TCM via CAN communication. • Engine and CVT integrated control signal **NOTE:** General term for the communication (torque-down permission, torque-down request, etc.) exchanged between the ECM and TCM. • Engine speed signal • Accelerator pedal position signal • Closed throttle position signal Mainly receives the following signals from TCM via CAN communication. • Malfunctioning indicator lamp signal Refer to EC-17, "Component Parts Location" for detailed installation location.
②	Traction motor inverter	Mainly transmits the following signal to TCM via CAN communication • Motor output torque signal • Motor speed signal Refer to TMS-11, "Component Parts Location" for detailed installation location.
③	BCM	Mainly transmits the following signal to TCM via CAN communication • Stop lamp switch signal Refer to BCS-5, "BODY CONTROL SYSTEM : Component Parts Location" for detailed installation location.
④	Combination meter	Mainly transmits the following signal to TCM via CAN communication • Manual mode signal • Non-manual mode signal • Manual mode upshift signal • Manual mode downshift signal Mainly receives the following signals from TCM via CAN communication. • Shift position signal
⑤	HPCM	Mainly transmits the following signal to TCM via CAN communication. • Accelerator pedal position signal • Closed throttle position signal • Target engine torque signal • Target primary speed signal • Target clutch 1 pressure signal • Target clutch 2 torque signal • Clutch 2 mode signal • Electric oil pump start up request signal Mainly receives the following signals from TCM via CAN communication. • Malfunction indicator lamp signal Refer to HBC-12, "Component Parts Location" for detailed installation location.
⑥	ABS actuator and electronic unit (control unit)	Mainly transmits the following signal to TCM via CAN communication • Vehicle speed signal • ABS malfunction signal • ABS operation signal • TCS operation signal • VDC operation signal Refer to BRC-10, "Component Parts Location" for detailed installation location.
⑦	TCM	TM-17, "CVT CONTROL SYSTEM : TCM"
⑧	Transmission range switch	TM-17, "CVT CONTROL SYSTEM : Transmission Range Switch"
⑨	Clutch 2 temperature sensor	—
⑩	Primary speed sensor	TM-18, "CVT CONTROL SYSTEM : Primary Speed Sensor"
⑪	CVT unit connector	—

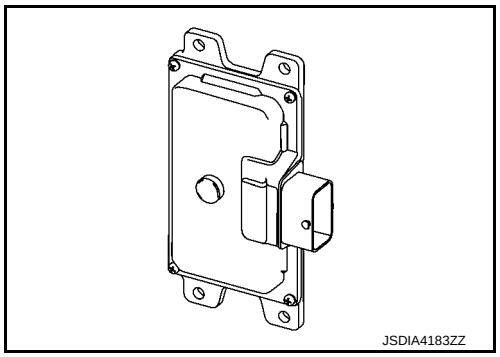
No.	Component		Function
⑫	Control valve	CVT fluid temperature sensor*	TM-19, "CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor"
		Primary pressure sensor*	TM-19, "CVT CONTROL SYSTEM : Primary Pressure Sensor"
		Secondary pressure sensor*	TM-20, "CVT CONTROL SYSTEM : Secondary Pressure Sensor"
		Line pressure solenoid valve*	TM-20, "CVT CONTROL SYSTEM : Line Pressure Solenoid Valve"
		Primary pressure solenoid valve*	TM-21, "CVT CONTROL SYSTEM : Primary Pressure Solenoid Valve"
		Secondary pressure solenoid valve*	TM-21, "CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve"
		Select solenoid valve*	TM-21, "CVT CONTROL SYSTEM : Select Solenoid Valve"
		Clutch 1 solenoid valve*	TM-21, "CVT CONTROL SYSTEM : Clutch 1 Solenoid Valve"
⑬	Electric oil pump		TM-23, "CVT CONTROL SYSTEM : Electric Oil Pump"
⑭	Output speed sensor		TM-18, "CVT CONTROL SYSTEM : Output Speed Sensor"
⑮	Sport mode switch		DMS-6, "SPORT Mode Switch"
⑯	ECO mode switch		DMS-25, "ECO Mode Switch"
⑰	Manual mode switch		TM-22, "CVT CONTROL SYSTEM : Manual Mode Switch"
⑱	Electric oil pump relay		TM-23, "CVT CONTROL SYSTEM : Electric Oil Pump Relay"

*: These components are included in control valve assembly.

CVT CONTROL SYSTEM : TCM

INFOID:0000000014907356

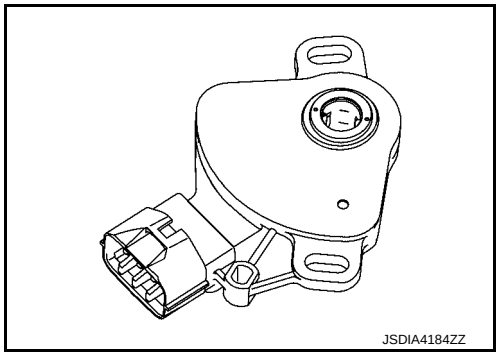
- The TCM consists of a microcomputer and connectors for signal input and output and for power supply.
- The vehicle driving status is judged based on the signals from the sensors, switches, and other control units, and the optimal transaxle control is performed.
- For TCM control items, refer to TM-35, "CVT CONTROL SYSTEM : System Description".


JSDIA4183ZZ

CVT CONTROL SYSTEM : Transmission Range Switch

INFOID:0000000014907357

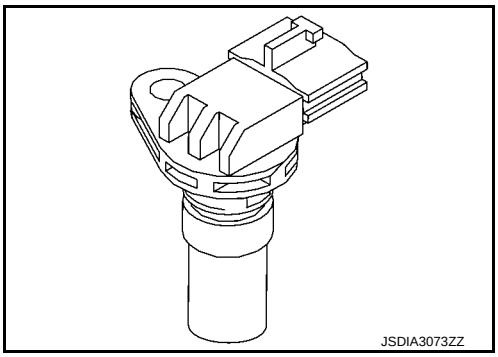
- The transmission range switch is installed to upper part of transaxle case.
- The transmission range switch detects the selector lever position.


JSDIA4184ZZ

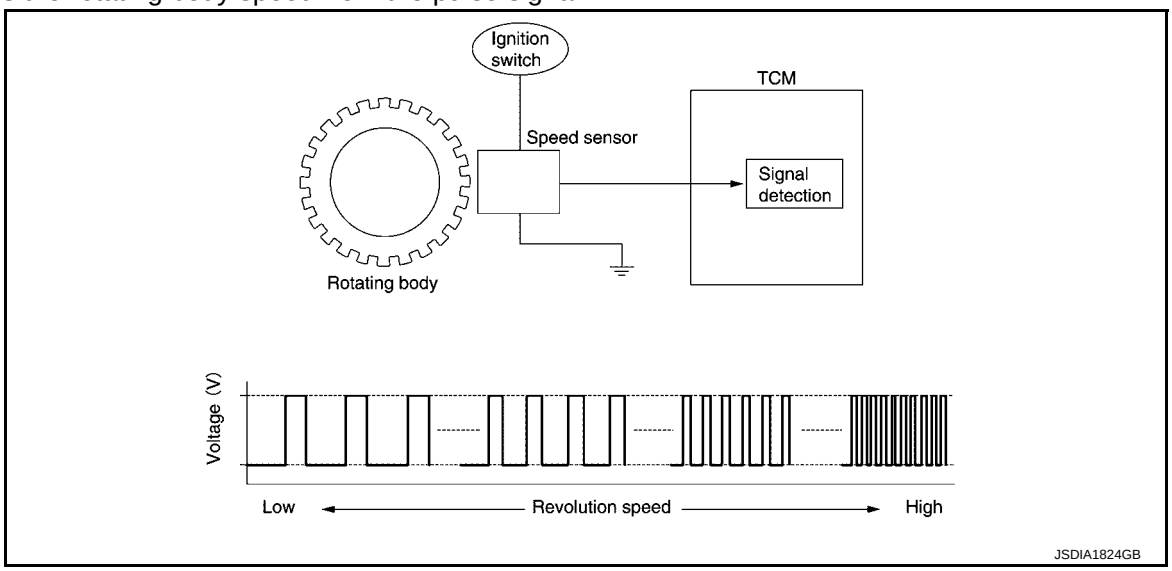
CVT CONTROL SYSTEM : Primary Speed Sensor

INFOID:0000000014907358

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



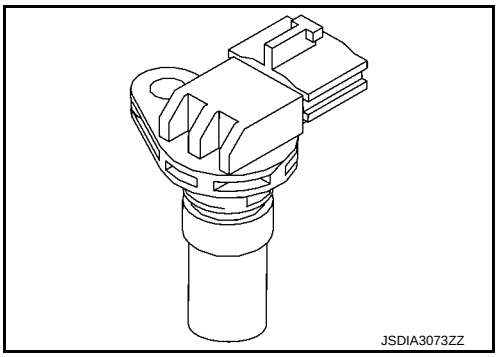
- The primary speed sensor generates an ON-OFF pulse signal according to the rotating body speed. TCM judges the rotating body speed from the pulse signal.



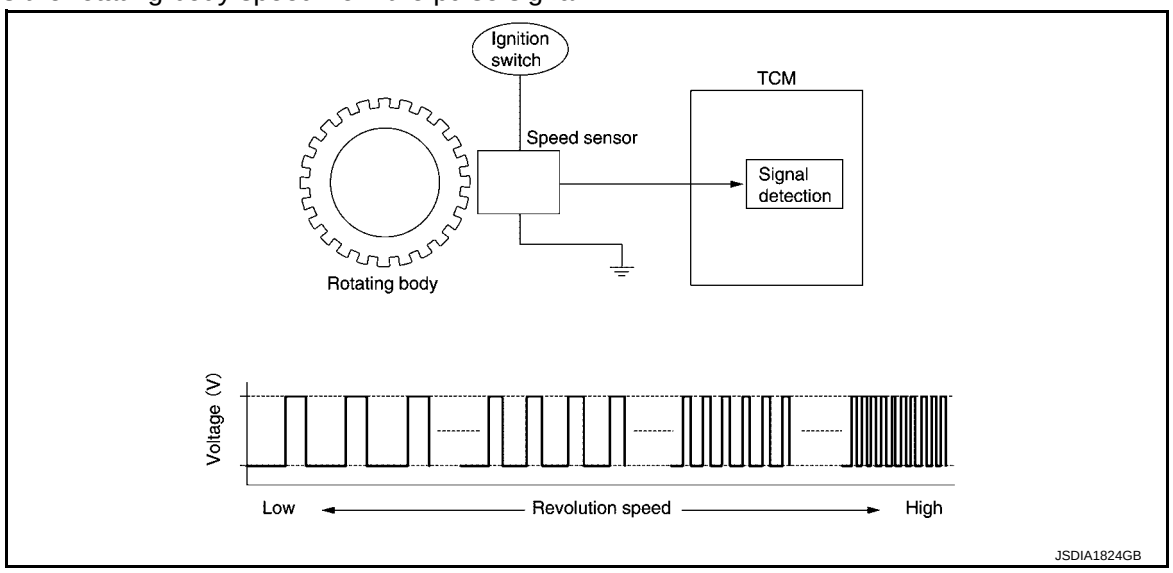
CVT CONTROL SYSTEM : Output Speed Sensor

INFOID:0000000014907359

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



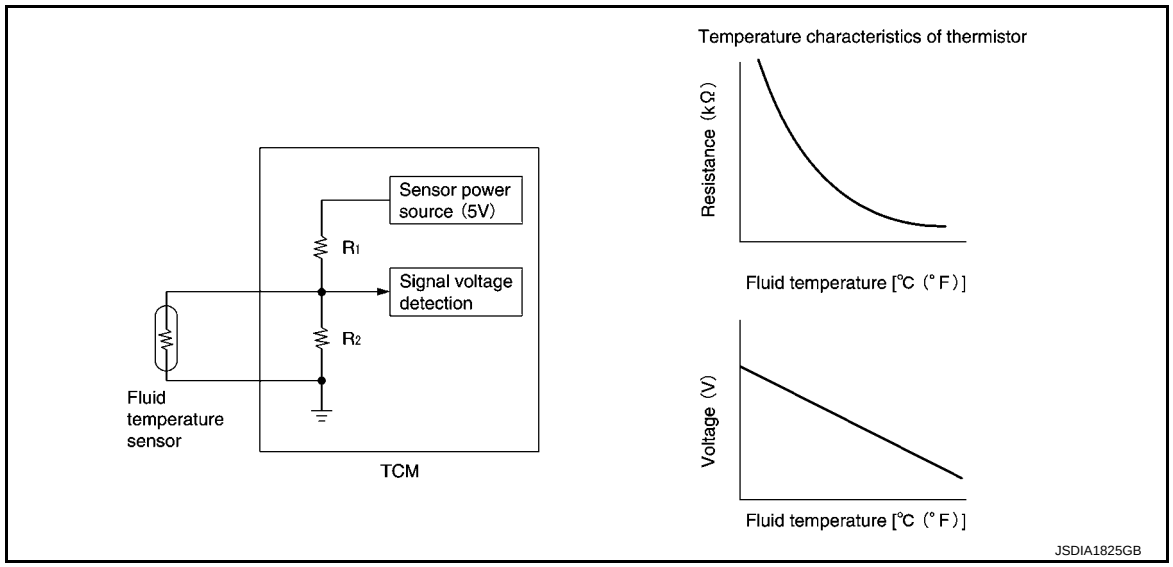
- The output speed sensor generates an ON-OFF pulse signal according to the rotating body speed. TCM judges the rotating body speed from the pulse signal.



CVT CONTROL SYSTEM : CVT Fluid Temperature Sensor

INFOID:0000000014907360

- 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.

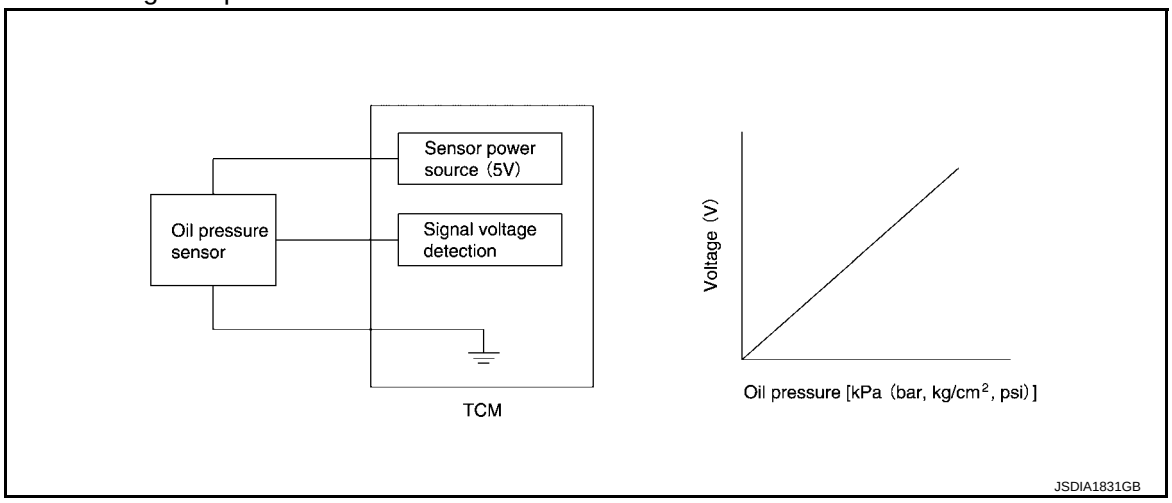


CVT CONTROL SYSTEM : Primary Pressure Sensor

INFOID:0000000014907361

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

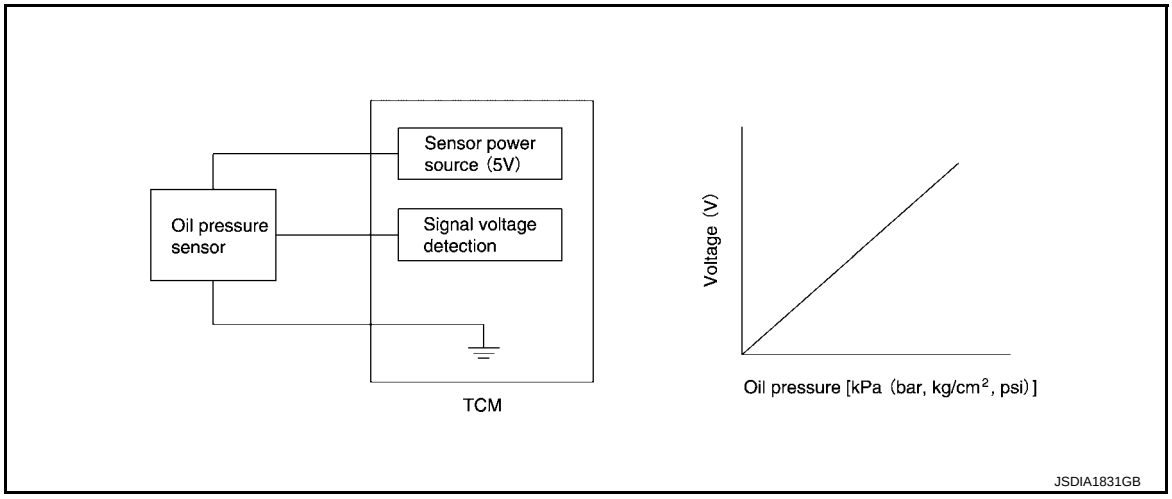
- When pressure is applied to the ceramic device in the primary pressure sensor, the ceramic device is deformed, resulting in voltage change. TCM evaluates the primary pressure from its voltage change. Voltage is increased along with pressure increase.



CVT CONTROL SYSTEM : Secondary Pressure Sensor

INFOID:0000000014907362

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



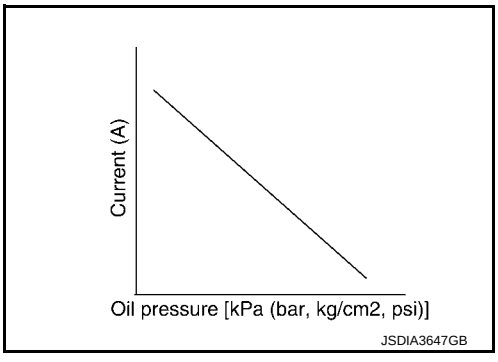
CVT CONTROL SYSTEM : Line Pressure Solenoid Valve

INFOID:0000000014907363

- 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-30, "TRANSAXLE : Component Description".
- The line pressure solenoid valve uses the linear solenoid valve [N/H (normal high) type].

NOTE:

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



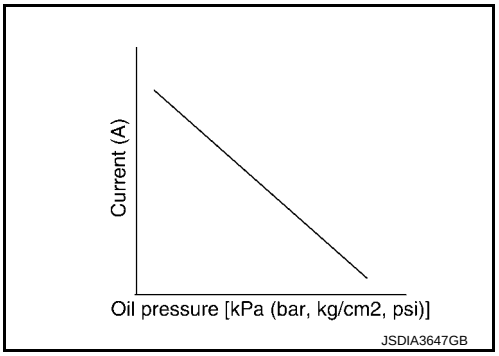
CVT CONTROL SYSTEM : Primary Pressure Solenoid Valve

INFOID:0000000014907364

- 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-30, "TRANSAXLE : Component Description".
- The primary pressure solenoid valve uses the linear solenoid valve [N/H (normal high) type].

NOTE:

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



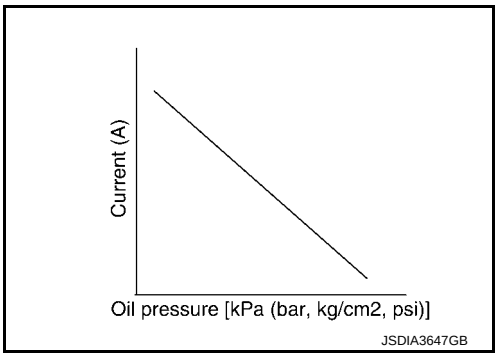
CVT CONTROL SYSTEM : Secondary Pressure Solenoid Valve

INFOID:0000000014907365

- 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-30, "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.



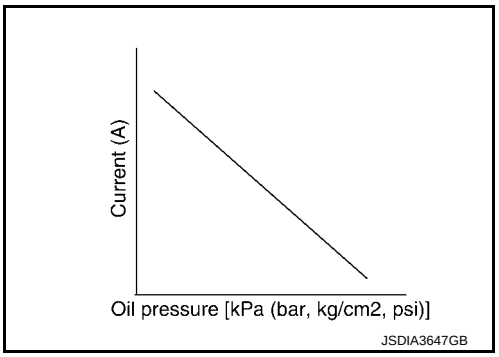
CVT CONTROL SYSTEM : Select Solenoid Valve

INFOID:0000000014907366

- The select solenoid valve is installed to control valve.
- The select solenoid valve adjusts the tightening pressure of forward clutch and reverse brake.
- The select solenoid valve uses the linear solenoid valve [N/H (normal high) type].

NOTE:

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

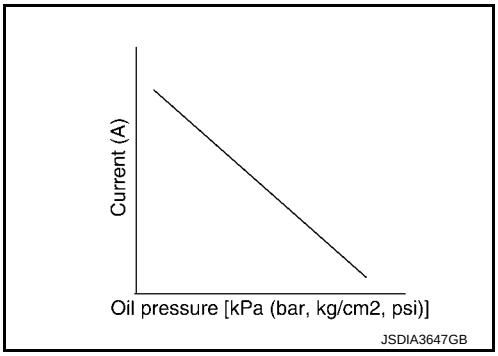


CVT CONTROL SYSTEM : Clutch 1 Solenoid Valve

INFOID:0000000014907367

- The clutch 1 solenoid valve is installed to control valve.
- The clutch 1 solenoid valve controls the clutch 1. For information about the clutch 1, refer to TM-26, "TRANSAXLE : Transaxle Mechanism".

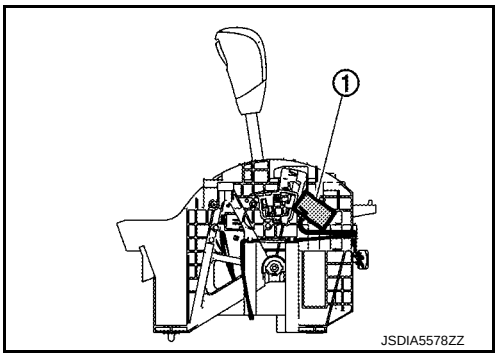
- The clutch 1 solenoid valve uses the linear solenoid valve [N/H (normal high) type].
  NOTE:
  - The principle of the linear solenoid valve utilizes the fact that the force pressing on the valve spool installed inside the coil increases nearly in proportion to the current. This allows it to produce a fluid pressure that is proportional to this pressing force.
  - The N/H (normal high) produces hydraulic control when the coil is not energized.



CVT CONTROL SYSTEM : Manual Mode Switch

INFOID:0000000014907368

- The manual mode switch ① is installed in the CVT shift selector assembly.
- The manual mode switch detects the position (the main shift gate side or manual shift gate side) of the selector lever and transmits a manual mode signal or a not manual mode signal to the combination meter. Then, the TCM receives a manual mode signal or non-manual mode signal from the combination meter.
- The manual mode switch detects that the selector lever is shifted to the upshift side of the manual shift gate and transmits a manual mode upshift signal to the combination meter. Then, the TCM receives a manual mode upshift signal from the combination meter.



- The manual mode switch detects that the selector lever is shifted to the downshift side of the manual shift gate and transmits a manual mode downshift signal to the combination meter. Then, the TCM receives a manual mode downshift signal from the combination meter.

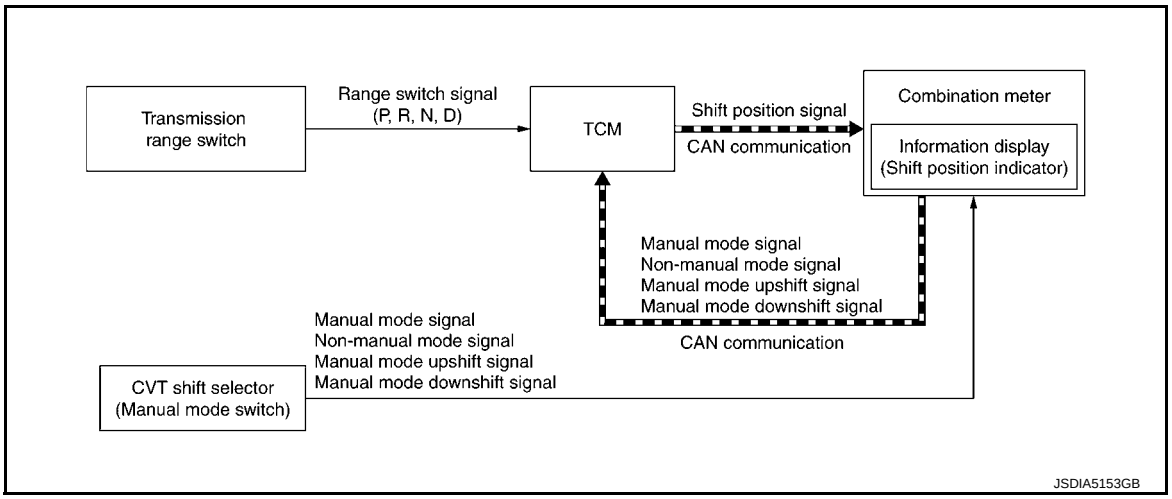
CVT CONTROL SYSTEM : Shift Position Indicator

INFOID:0000000014907370

PURPOSE

The shift position indicator displays the shift position of transaxle.

SYSTEM DIAGRAM



SIGNAL PATH

- The TCM judges the shift position by the transmission range switch signal, manual mode switch signal, non-manual mode switch signal, manual mode upshift signal, and manual mode downshift signal.
- The TCM transmits the shift position signal to the combination meter via CAN communication. The combination meter shows the shift position indicator on the information display, according to the signal.

LIGHTING CONDITION

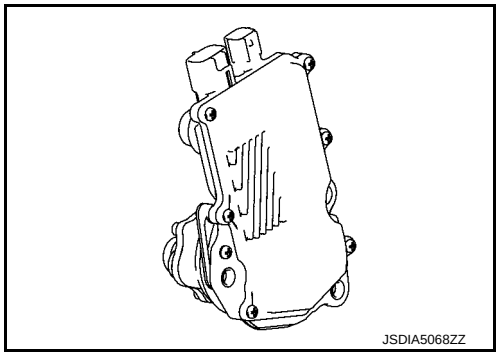
Ignition switch: ON

SHUTOFF CONDITION
Ignition switch: Other than ON

CVT CONTROL SYSTEM : Electric Oil Pump

INFOID:0000000014907371

- The electric oil pump contains a “Three-phase brushless synchronous motors”.
- Electric oil pump is controlled by TCM. It supplies necessary cooling oil for clutch 2.
- The electric oil pump operates according to a signal transmitted from TCM via PWM (pulse width modulation).
- The electric oil pump transmits status signal to TCM via PWM.


JSDIA5068ZZ

Electric oil pump status signal

Status signal (Duty)	Description
0 – 4%	Possible malfunction
5 – 11%	In normal stop
12 – 68%	In activation
69 – 100%	Possible malfunction

CVT CONTROL SYSTEM : Electric Oil Pump Relay

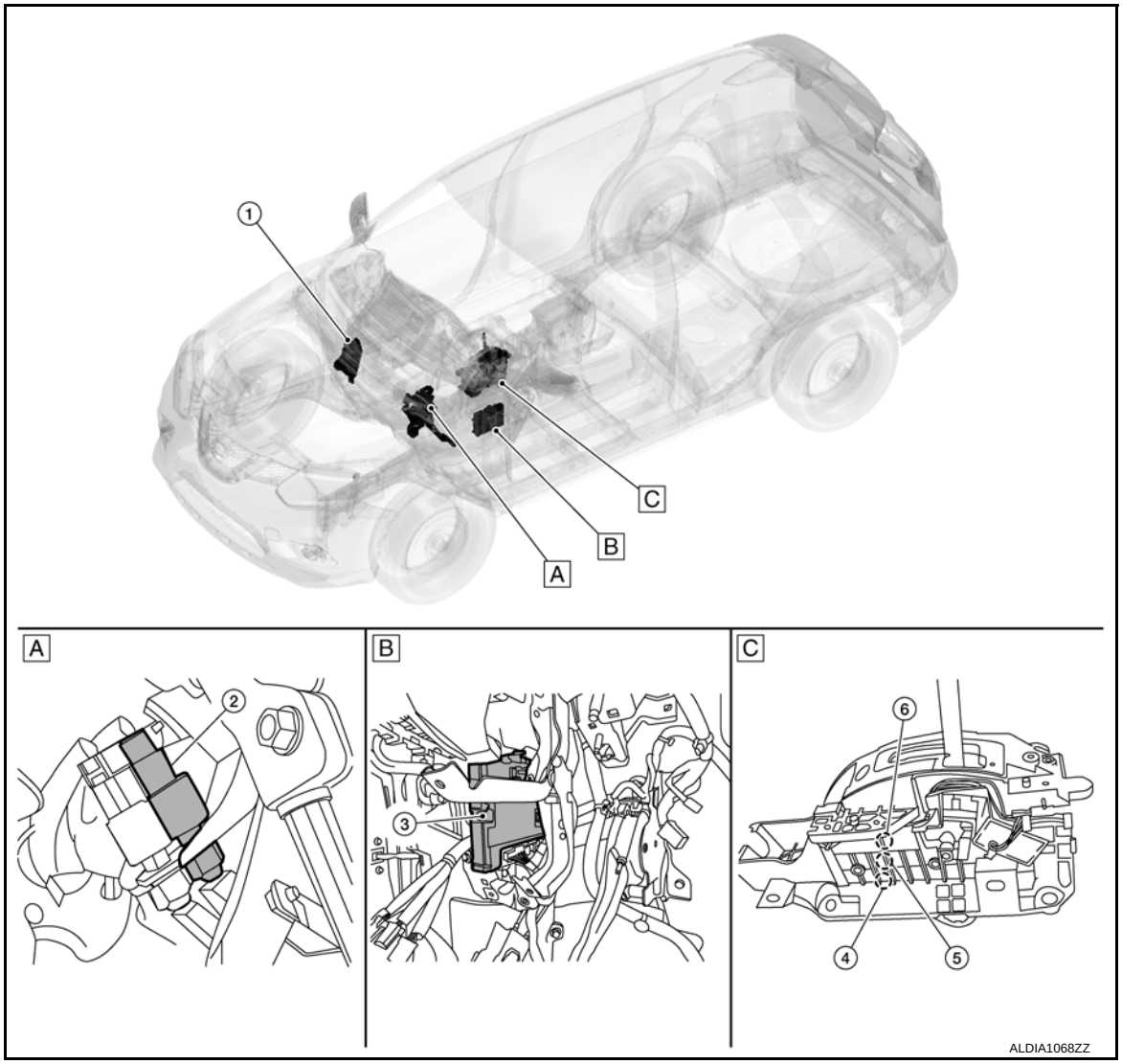
INFOID:0000000014907372

When ignition switch is turned ON, electric oil pump relay is turned ON by electric oil pump. Electric oil pump relay supplies motor drive voltage to electric oil pump.

SHIFT LOCK SYSTEM

SHIFT LOCK SYSTEM : Component Parts Location

INFOID:0000000014629950



A. Brake pedal area
B. Left side of Instrument panel
C. Shift lock release button (view with center console removed)
4. Shift lock solenoid (view with center console removed)
5. Park position switch (view with center console removed)

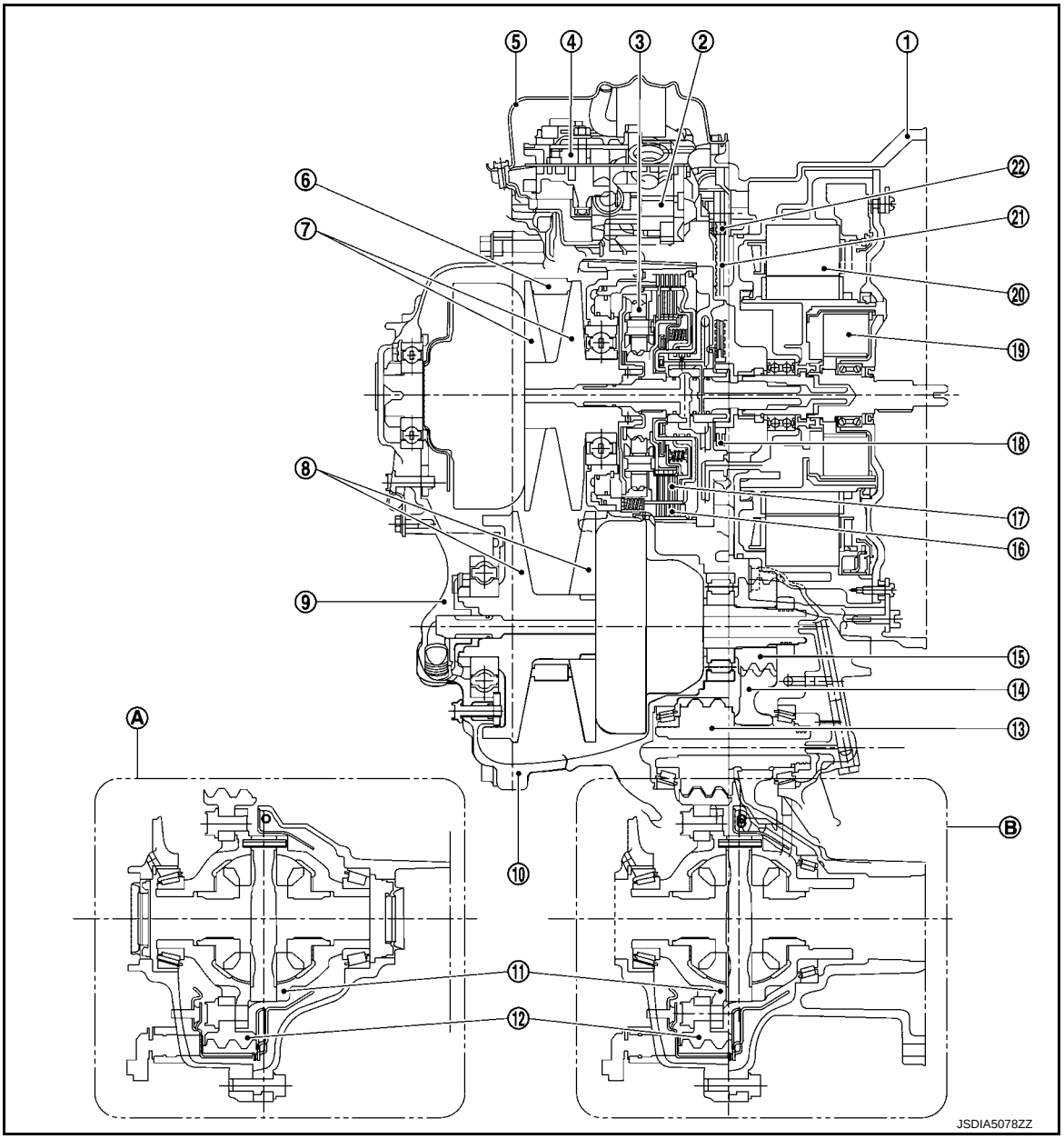
COMPONENT DESCRIPTION

No.	Component	Description
1.	HPCM	The HPCM energizes the shift lock solenoid when the brake pedal is depressed.
2.	Stop lamp switch	• The stop lamp switch turns ON when the brake pedal is depressed. • When the stop lamp switch turns ON, the shift lock solenoid is energized.
3.	BCM	When the brake pedal is depressed, the BCM communicates to the HPCM via CAN communucation energizing the shift lock solenoid.
4.	Shift lock release button	Forcibly releases the shift lock when pressed.
5.	Shift lock solenoid	It operates according to the signal from the stop lamp switch and moves the lock lever.
6.	Park position switch	It detects that the selector lever is in “P” position.

STRUCTURE AND OPERATION
TRANSAXLE

TRANSAXLE : Cross-Sectional View

INFOID:0000000014907377



① Front case	② Oil pump	③ Planetary gear
④ Control valve	⑤ Oil pan	⑥ Chain 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 Reverse brake*	⑰ Forward clutch*	⑱ Drive sprocket
⑲ Clutch 1	⑳ Traction motor	㉑ Driven sprocket
㉒ Oil pump chain		
Ⓐ 2WD models	Ⓑ AWD models	

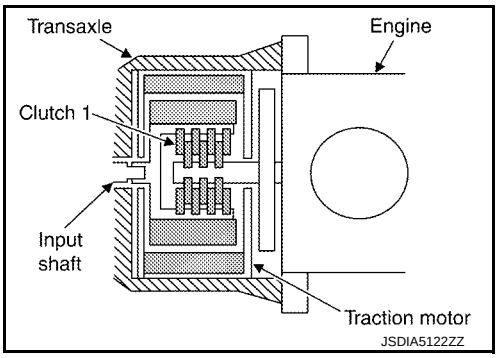
*: Forward clutch and reverse brake are clutch 2.

TRANSAXLE : Transaxle Mechanism

INFOID:0000000014907378

CLUTCH 1

- Clutch 1 is included in the traction motor assembly.
- Clutch 1 is dry and multiple type clutch that consists of clutch drum, piston, drive plate, and driven plate.
- For clutch 1 control, refer to TM-46, "CLUTCH 1 CONTROL : System Description".



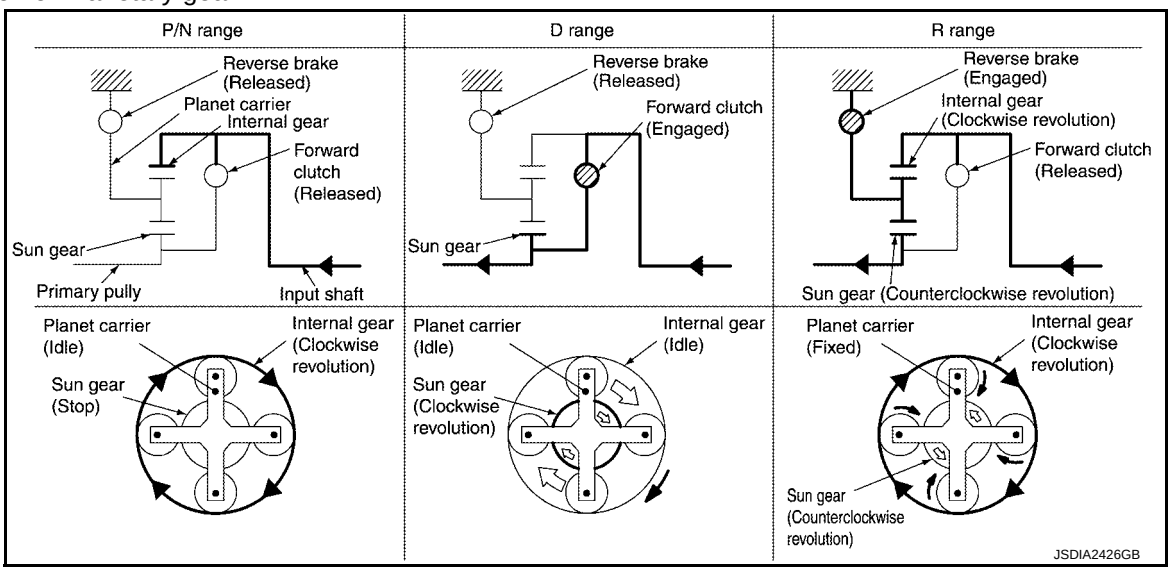
OIL PUMP

Utilizes a vane-type oil pump that is driven by the engine/traction motor 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

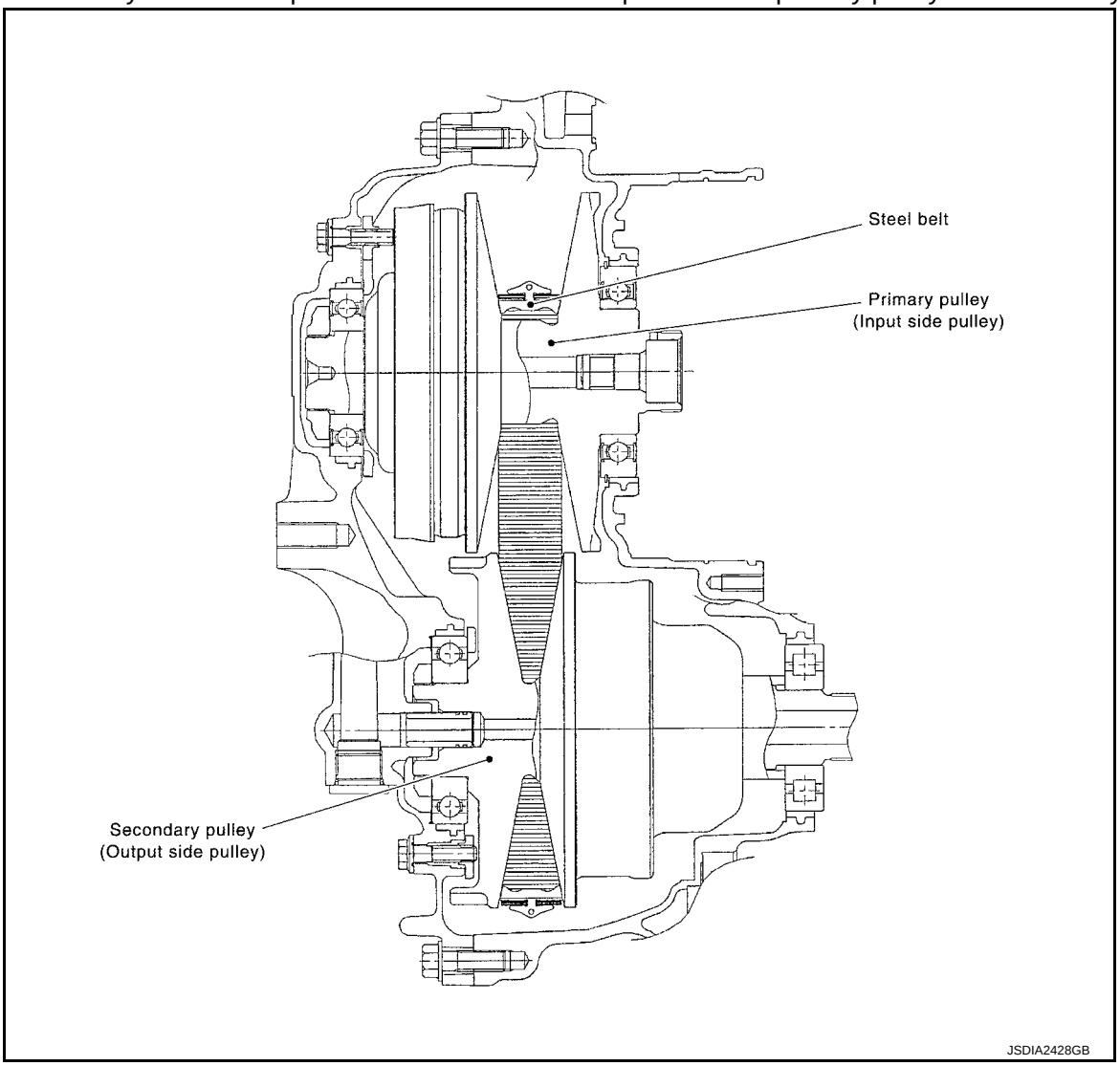
- A planetary gear type of forward/reverse selector mechanism is installed between the traction motor and primary pulley.
- The power from the engine and traction motor is input via the input shaft, operating a wet multi-plate clutch by means of hydraulic pressure to switch between forward and reverse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

Operation of Planetary gear



BELT & PULLEY

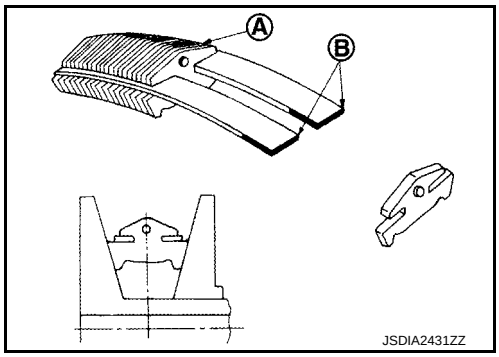
It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the chain belt. The groove width changes according to wrapping radius of chain belt and pulley from low status to overdrive status continuously with non-step. It is controlled with the oil pressures of primary pulley and secondary pulley.



Steel Belt

It is composed of multiple steel plates Ⓐ and two steel rings Ⓑ 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.

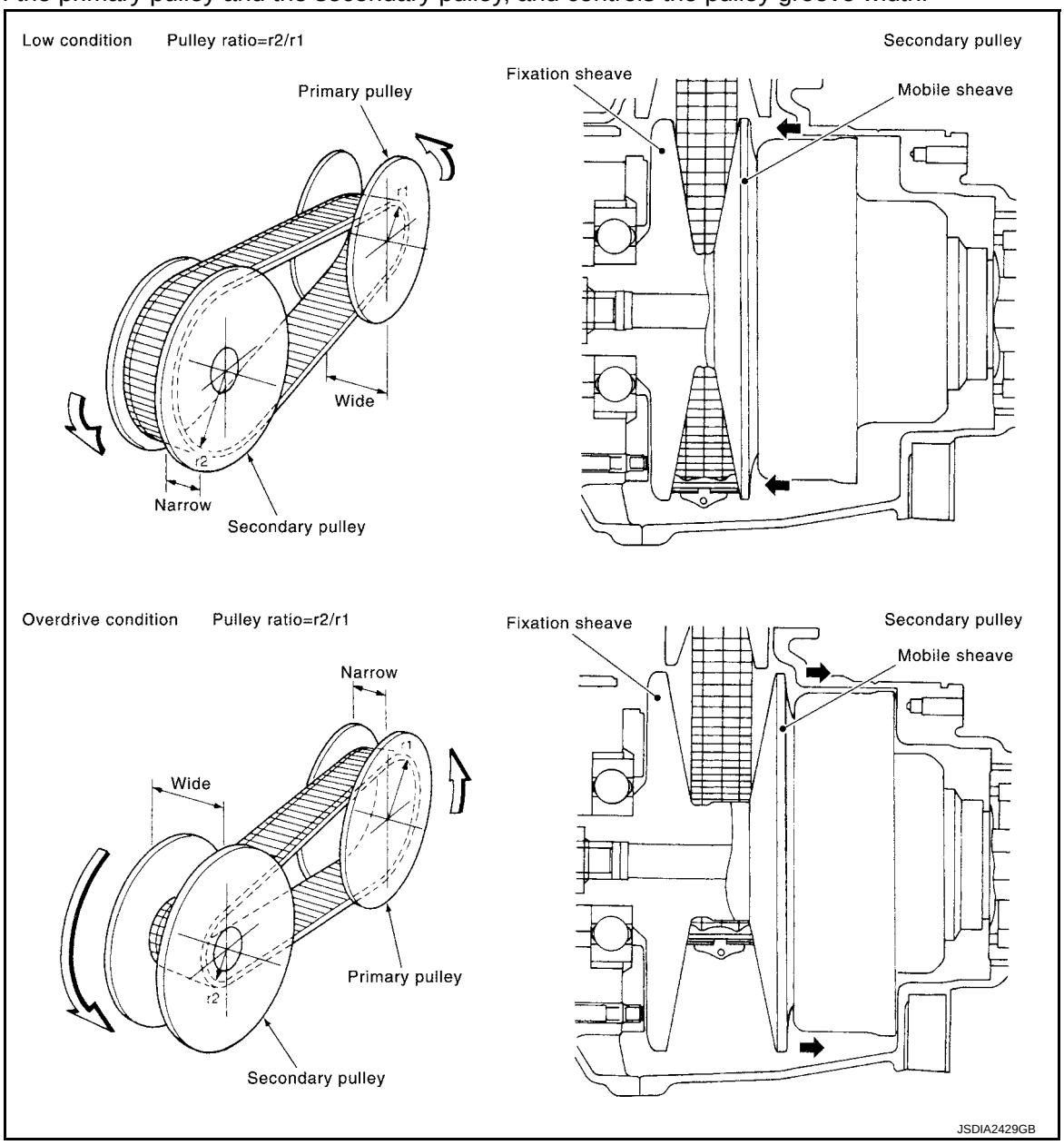


Therefore, responsibilities are divided by the steel plate that transmits the power with compression and the steel ring that maintains necessary friction force. In this way, the tension of the steel ring is distributed on the entire surface and stress variation is limited, resulting in good durability.

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.

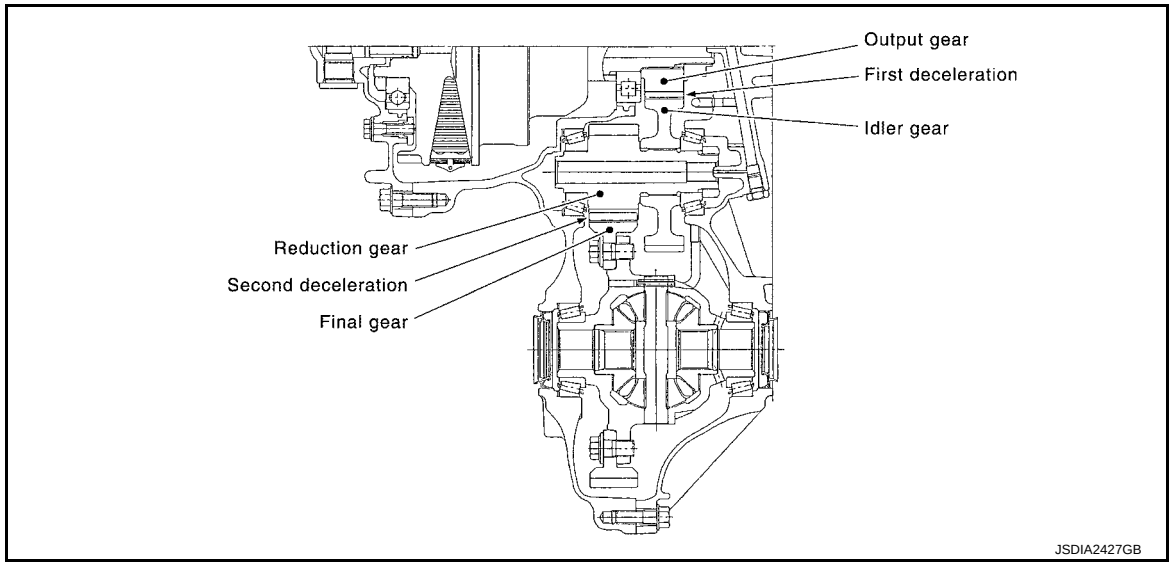
The movable sheave slides on the shaft to change the groove width of the pulley. Input signals of engine load (accelerator pedal opening), primary pulley speed and secondary pulley speed change the operation pressures of the primary pulley and the secondary pulley, and controls the pulley groove width.



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.

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



TRANSAXLE : Operation Status

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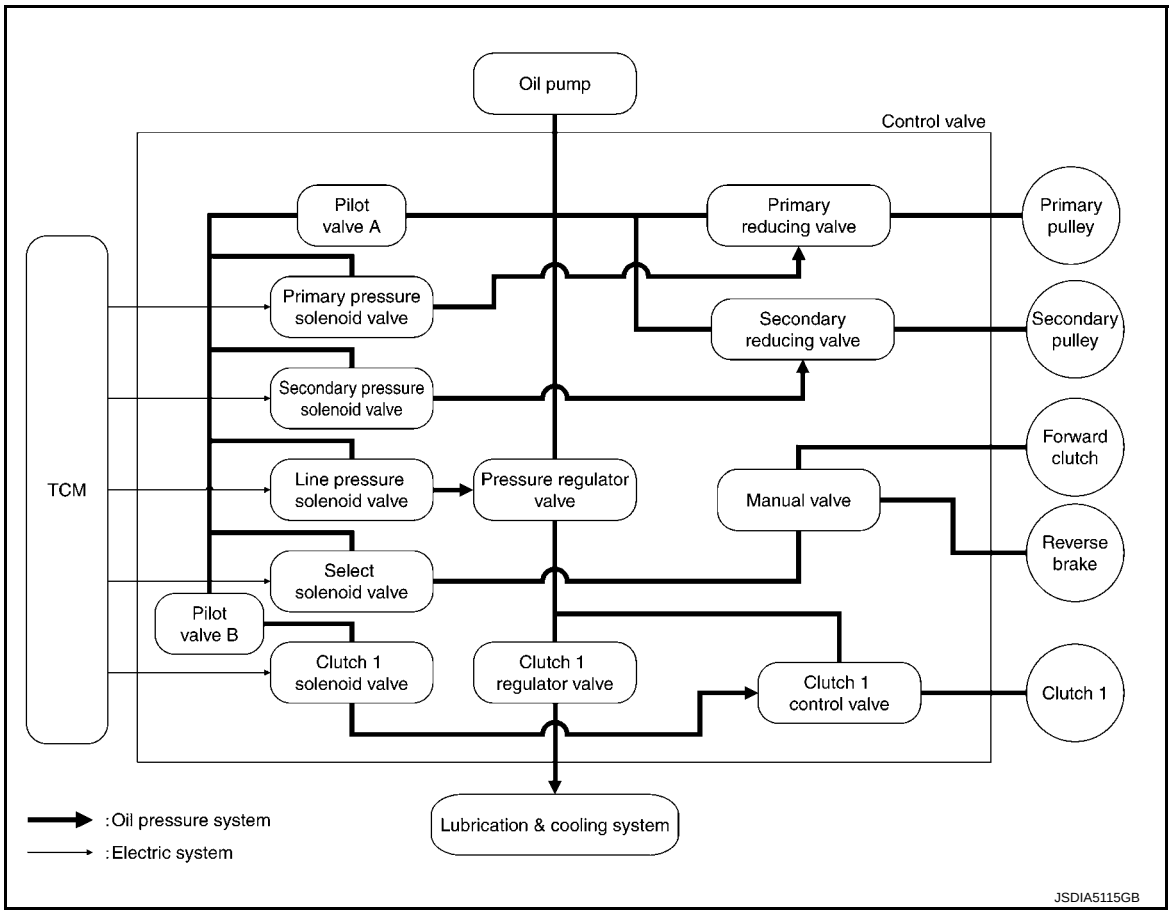
×: Engaged or applied.

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

TRANSAXLE : Oil Pressure System

INFOID:0000000014907380

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



TRANSAXLE : Component Description

INFOID:0000000014907381

Part name	Function
Oil pump	Utilizes a vane-type oil pump that is driven by the engine/traction motor 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 traction motor or engine.

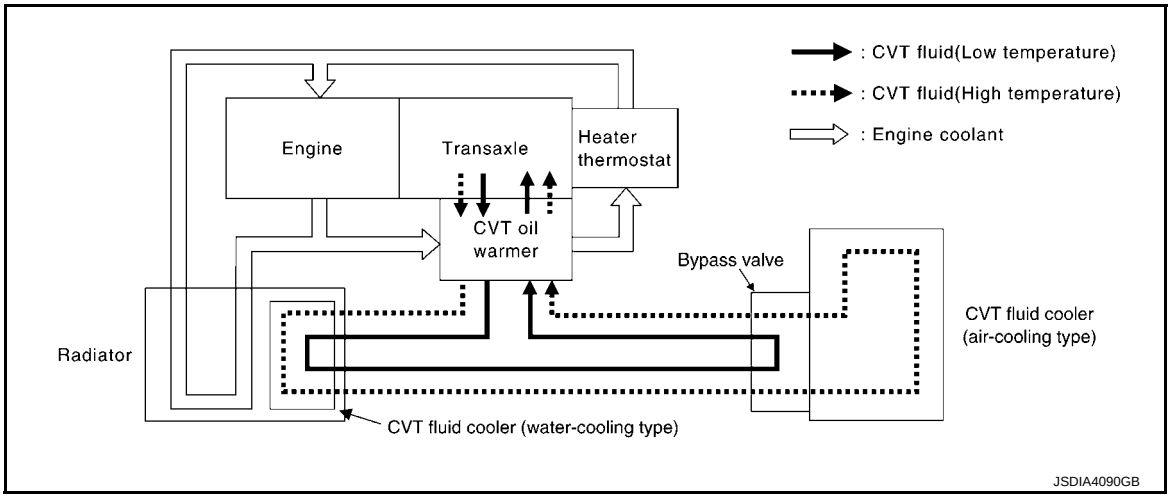
Part name	Function
Primary pulley	It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the steel belt. The groove width changes according to wrapping radius of steel belt and pulley from low status to overdrive status continuously with non-step. It is controlled 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	
Clutch 1 regulator valve	Adjusts the feed pressure to the clutch 1 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.
Clutch 1 control valve	Adjusts the clutch 1 engage and disengage pressures.
Manual valve	Distributes the clutch operation pressure to each circuit according to the selector lever position.
Secondary reducing valve	Reduces line pressure and adjusts secondary pressure.
Primary reducing valve	Reduces line pressure and adjusts primary pressure.
Pilot valve A	Reduces line pressure and adjusts pilot pressure to the solenoid valves listed below. • Primary pressure solenoid valve • Secondary pressure solenoid valve • Select solenoid valve • Line pressure solenoid valve
Pilot valve B	Reduces pilot pressure and adjusts pilot pressure to the clutch 1solenoid valve.

FLUID COOLER & FLUID WARMER SYSTEM

FLUID COOLER & FLUID WARMER SYSTEM : System Description

INFOID:0000000014629956

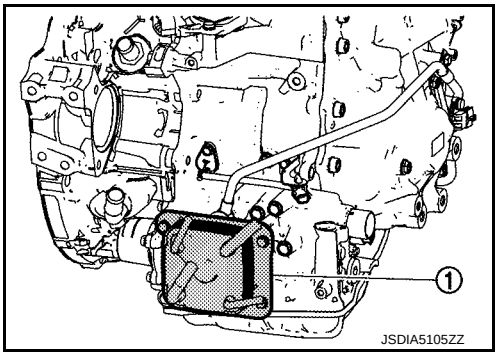
CVT FLUID COOLER SCHEMATIC



COMPONENT DESCRIPTION

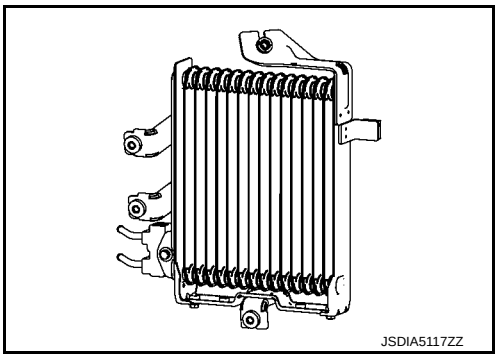
CVT Oil Warmer

- 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.



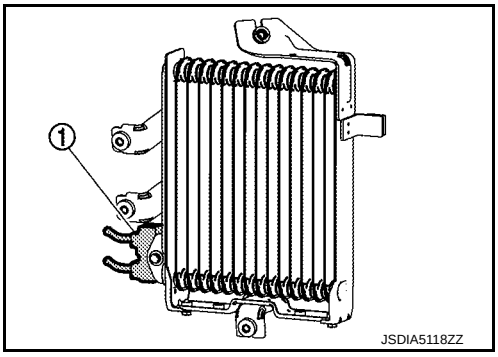
CVT Fluid Cooler

- The CVT fluid cooler is installed to the vehicle front LH.
- The CVT fluid cooler prevents CVT fluid temperature from an abnormal increase while driving the vehicle. When flowing into the CVT fluid cooler, CVT fluid is cooled by driving blast while driving the vehicle.

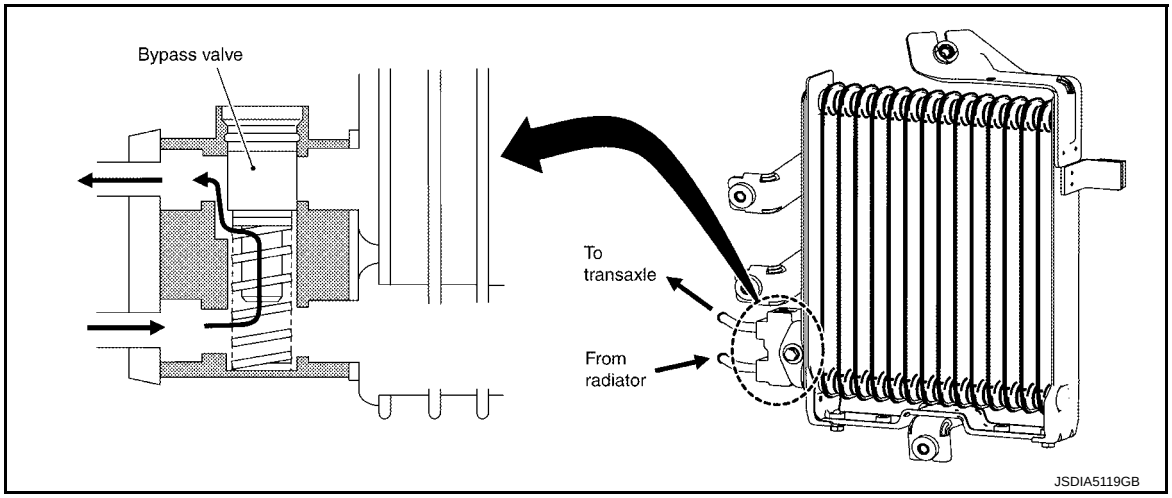


Bypass Valve

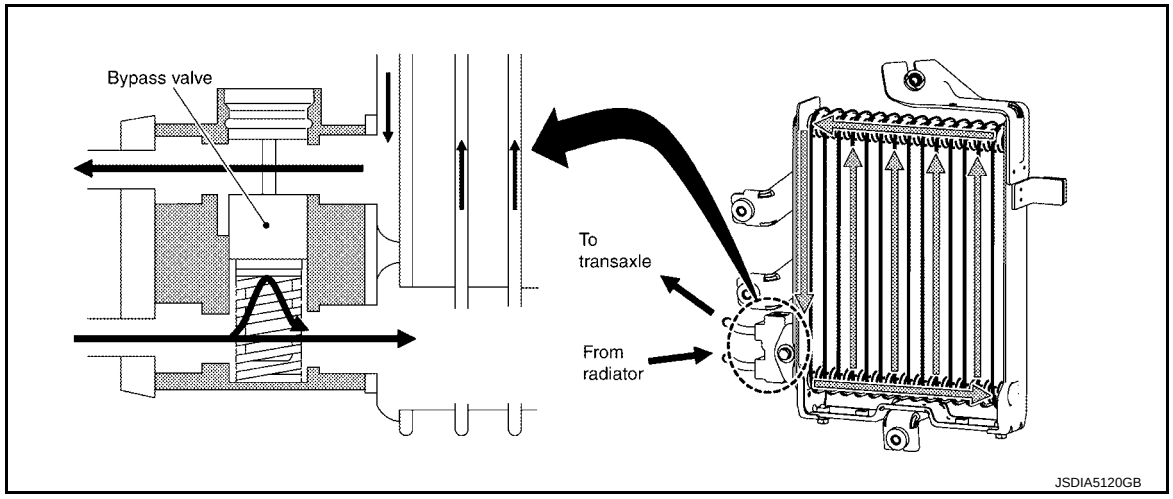
- The bypass valve ① is installed to the CVT fluid cooler.
- Bypass valve controls CVT fluid flow.



- When CVT fluid temperature is low, the bypass valve is open. Most of CVT fluid therefore returns to the transaxle without flowing into the cooler core that has larger flow resistance.

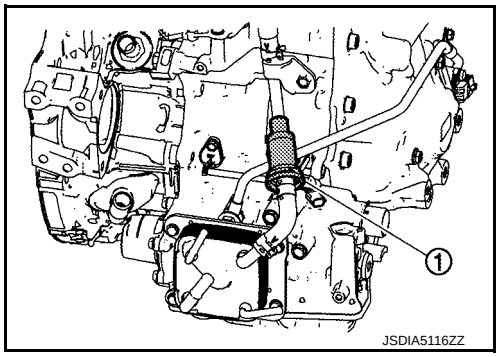


- When CVT fluid temperature rises [to approximately 65°C (149°F)], bypass valve fully closes and allows CVT fluid to flow into cooler core. CVT fluid flowing into cooler core is cooled by air stream caused by vehicle travel and returned to transaxle.



Heater Thermostat

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



SHIFT LOCK SYSTEM

SHIFT LOCK SYSTEM : System Description

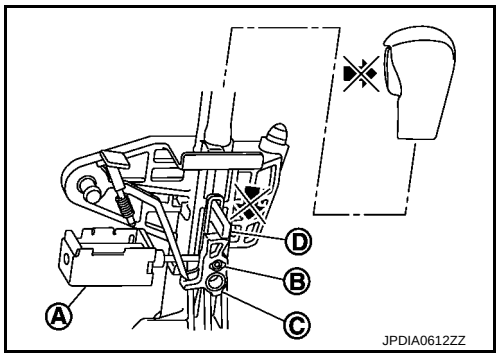
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The shift lever cannot be shifted from the “P” position unless the brake pedal is depressed while the ignition switch is set to ON. The shift lock is unlocked by turning the shift lock solenoid ON when the ignition switch is set to ON, the park position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

SHIFT LOCK OPERATION AT “P” POSITION

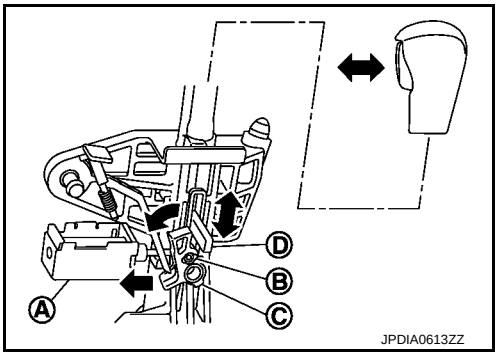
When Brake Pedal Is Not Depressed (No Selector Operation Allowed)

The shift lock solenoid (A) is turned OFF (not energized) and the solenoid rod (B) is extended with the spring when the brake pedal is not depressed (no selector operation allowed) with the ignition switch ON.
The connecting lock lever (C) is located at the position shown in the figure when the solenoid rod is extended. It prevents the movement of the detent rod (D). For these reasons, the selector lever cannot be shifted from the “P” position.



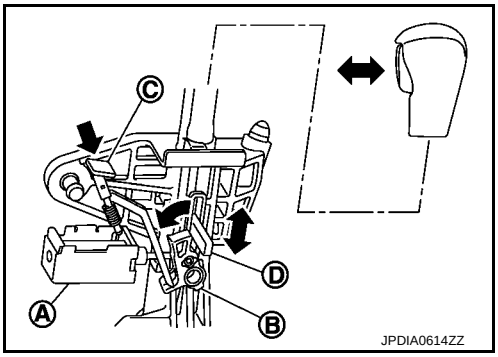
When Brake Pedal Is Depressed (Shift Operation Allowed)

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



“P” POSITION HOLD MECHANISM (IGNITION SWITCH LOCK)

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



D : Detent rod

CAUTION:

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

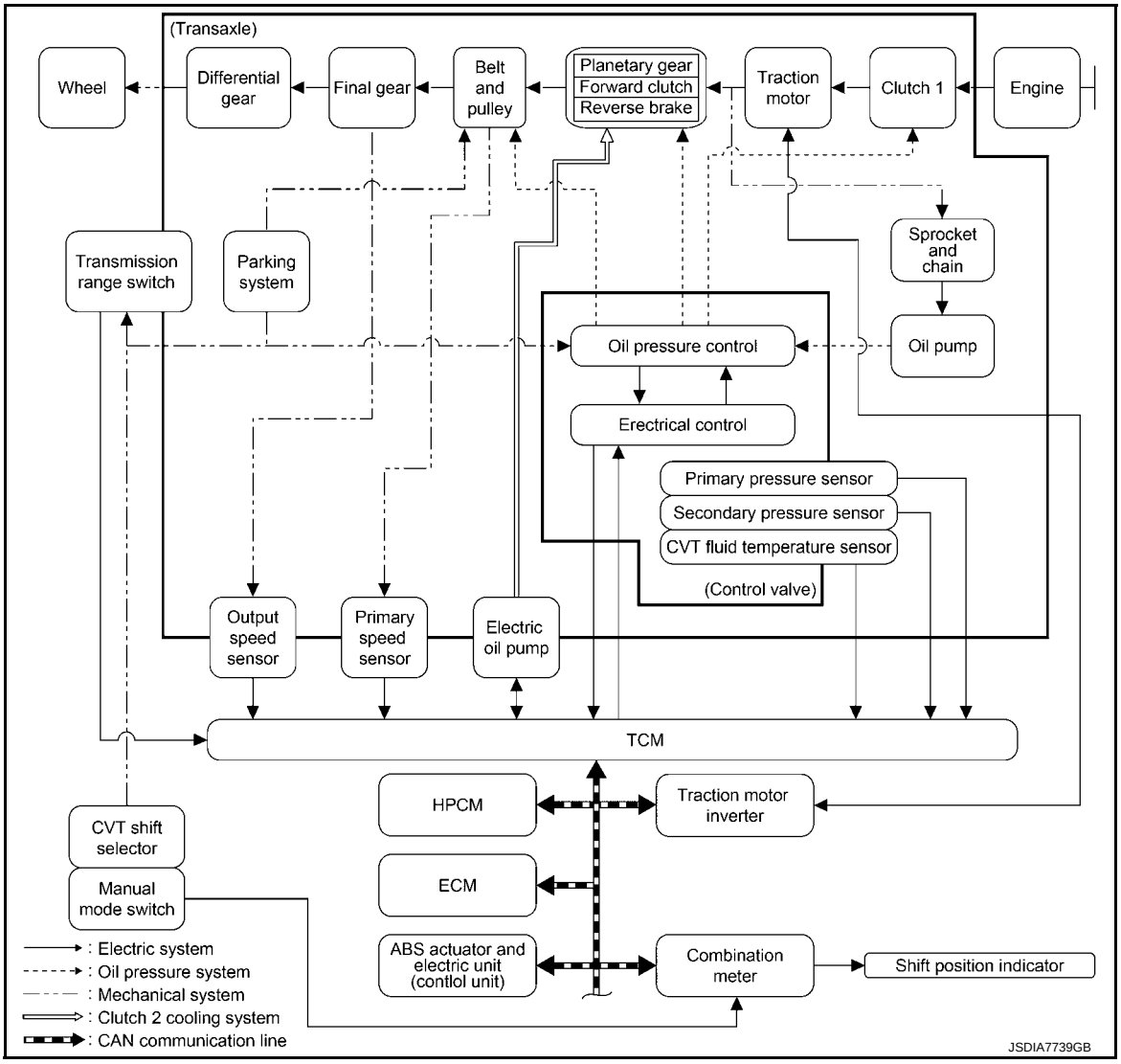
SYSTEM

CVT CONTROL SYSTEM

CVT CONTROL SYSTEM : System Description

INFOID:0000000014907382

SYSTEM DIAGRAM



MAIN CONTROL CONTENTS OF TCM

Controls	Reference
Line pressure control	TM-41, "LINE PRESSURE CONTROL : System Description"
Shift control	TM-42, "SHIFT CONTROL : System Description"
Select control	TM-45, "SELECT CONTROL : System Description"
Clutch 1 control	TM-46, "CLUTCH 1 CONTROL : System Description"
Clutch 2 control	TM-46, "CLUTCH 2 CONTROL : System Description"
Electric oil pump control	TM-47, "ELECTRIC OIL PUMP CONTROL : System Description"
ECO mode control	TM-50, "ECO MODE CONTROL : System Description"
Fail-safe	TM-66, "Fail-safe"
Self-diagnosis function	TM-55, "CONSULT Function"
Communication function with CONSULT	TM-55, "CONSULT Function"

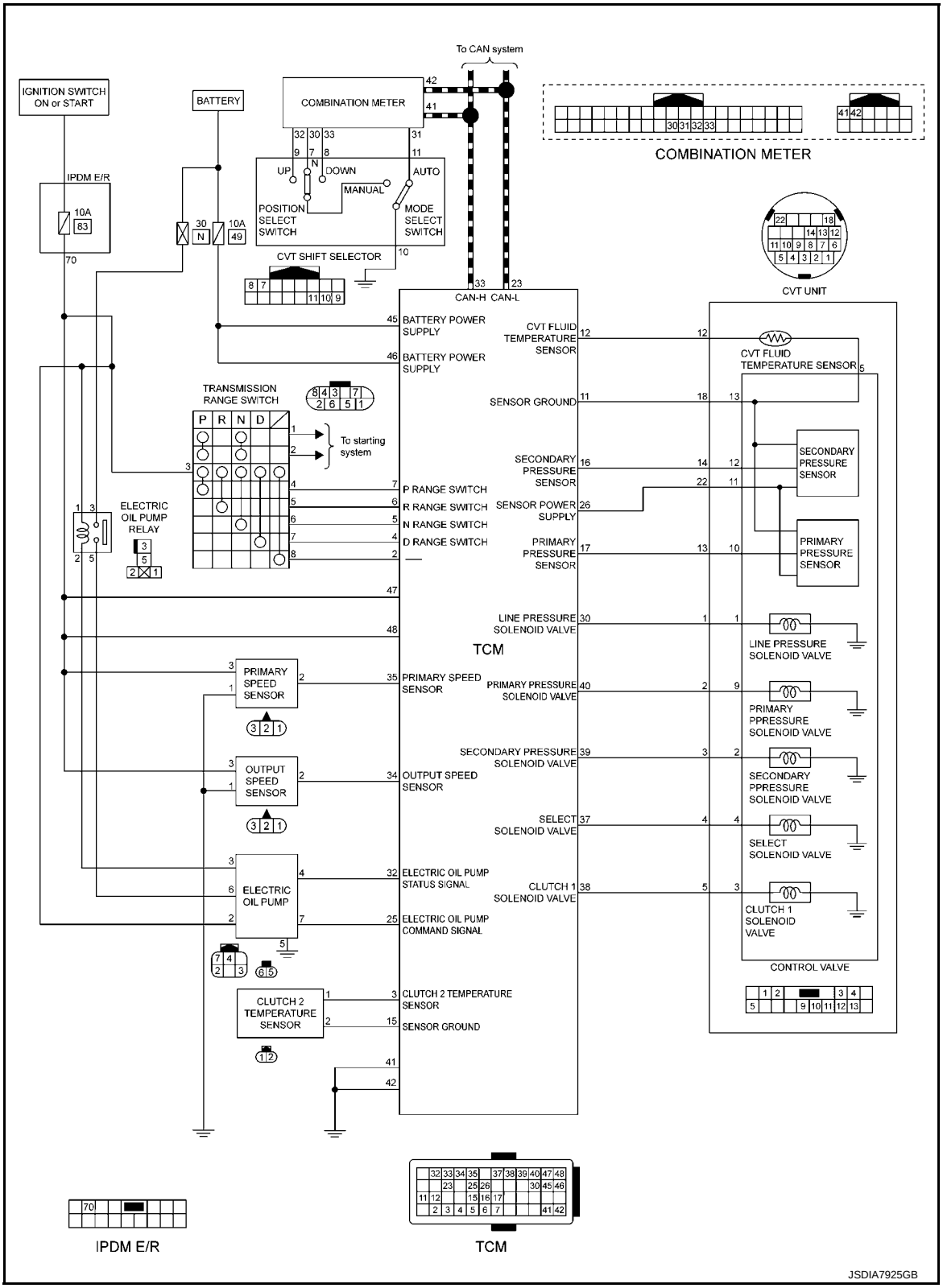
LIST OF CONTROL ITEMS AND INPUT/OUTPUT

Control Item		Line pressure control	Shift control	Select control	Clutch 1 control	Clutch 2 control	Fail-safe function*
Input	Target engine torque signal (CAN communication)	×	×				×
	Motor output torque signal (CAN communication)	×	×				×
	Target clutch 2 torque signal (CAN communication)	×	×	×		×	×
	Engine speed signal (CAN communication)			×			×
	Motor speed signal (CAN communication)	×	×	×			×
	Target primary speed signal (CAN communication)		×				×
	Target clutch 1 pressure signal (CAN communication)				×		×
	Clutch 2 mode signal (CAN communication)		×			×	×
	Accelerator pedal position signal (CAN communication)	×	×	×			×
	Closed throttle position signal (CAN communication)	×	×				×
	Stop lamp switch signal (CAN communication)	×	×	×			×
	Vehicle speed signal (CAN communication)		×				×
	• ABS operation signal • TCS operation signal • VDC operation signal (CAN communication)		×				×
	Primary pressure sensor						×
	Secondary pressure sensor	×	×				×
	CVT fluid temperature sensor	×	×	×	×	×	×
	Primary speed sensor	×	×				×
	Output speed sensor	×	×				×
	Transmission range switch	×	×	×		×	×
	Manual mode switch signal (Manual mode signal, non-manual mode signal, manual mode upshift signal, and manual mode downshift signal) (CAN communication)	×	×				×
	Sport mode switch signal (CAN communication)	×	×		×	×	×
Output	Line pressure solenoid valve	×	×				×
	Primary pressure solenoid valve	×	×				×
	Secondary pressure solenoid valve	×	×				×
	Select solenoid valve			×		×	×
	Clutch 1 solenoid valve				×		×
	Shift position indicator (CAN communication)			×			

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

CVT CONTROL SYSTEM : Circuit Diagram

INFOID:0000000014907383



CVT CONTROL SYSTEM : Fail-safe

INFOID:0000000014907384

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

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

Fail-safe function

DTC	Vehicle behavior	Conditions of vehicle
P062F	Not changed from normal driving	—
P0705	• Shift position indicator on combination meter is not displayed • Vehicle speed is creep speed	—
P0706	• Shift position indicator on combination meter is not displayed • Vehicle speed is creep speed	—
P0712	• Start is slow • Acceleration is slow	Engine coolant temperature when engine start: Temp. ≥ 10°C (50°F)
	• Selector shock is large • 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 star: Temp. < –35°C (–31°F)
P0713	• Start is slow • Acceleration is slow	Engine coolant temperature when engine start: Temp. ≥ 10°C (50°F)
	• Selector shock is large • 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 star: Temp. < –35°C (–31°F)
P0715	• Start is slow • Acceleration is slow • Manual mode is not activated	—
P0746	Vehicle does not run	—
P0776	• Selector shock is large • Start is slow • Acceleration is slow • Vehicle speed is not increased	When a malfunction occurs on the low oil pressure side
	• Selector shock is large • Start is slow • Acceleration is slow	When a malfunction occurs on the high oil pressure side
P0778	• Selector shock is large • Start is slow • Acceleration is slow	—
P0779	• Selector shock is large • Start is slow • Acceleration is slow	—
P0826	Manual mode is not activated	—
P0841	Not changed from normal driving	—
P0847	Not changed from normal driving	—
P0848	Not changed from normal driving	—
P084C	Not changed from normal driving	—
P084D	Not changed from normal driving	—
P0863	Vehicle does not run	—
P0890	Vehicle does not run	—

DTC	Vehicle behavior	Conditions of vehicle
P0962	• Selector shock is large • Start is slow • Acceleration is slow • Traction motor run prohibited	—
P0963	• Selector shock is large • Start is slow • Acceleration is slow • Traction motor run prohibited	—
P0965	• Selector shock is large • Start is slow • Acceleration is slow	When a malfunction occurs on the low oil pressure side
	Selector shock is large	When a malfunction occurs on the high oil pressure side
P0966	• Selector shock is large • Start is slow • Acceleration is slow	—
P0967	• Selector shock is large • Start is slow • Acceleration is slow	—
P188E	Not changed from normal driving	—
P1890	Not changed from normal driving	—
P1891	Not changed from normal driving	—
P1892	Not changed from normal driving	—
P2765	• Engine torque restriction to 40 Nm • Manual mode is not activated	—
P2813	Vehicle does not run	When a malfunction occurs on the low oil pressure side
	Selector shock is large	When a malfunction occurs on the high oil pressure side
P2814	Vehicle does not run	—
P2815	After stop the vehicle, vehicle does not run	—
P281D	Vehicle does not run	—
P281E	Traction motor run prohibited	—
U0073	Vehicle does not run	—
U0100	• Selector shock is large • Start is slow • Acceleration is slow	—
U0110	Engine torque restriction to 40 Nm	When a traction motor and an engine drive
	Vehicle does not run	When a traction motor drive
U0140	Not changed from normal driving	—
U0155	Not changed from normal driving	—
U0164	Not changed from normal driving	—
U0293	Vehicle does not run	—
U0300	• Selector shock is large • Start is slow • Acceleration is slow	—
U1000	Vehicle does not run	—
U110E	Not changed from normal driving	—
U110F	Not changed from normal driving	—
U1110	Not changed from normal driving	—
U1117	Not changed from normal driving	—

CVT CONTROL SYSTEM : Protection Control

INFOID:0000000014907385

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

CONTROL FOR WHEEL SPIN

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

TORQUE IS REDUCED WHEN DRIVING WITH THE REVERSE GEAR

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

CONTROL WHEN FLUID TEMPERATURE IS HIGH

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

REVERSE PROHIBIT CONTROL

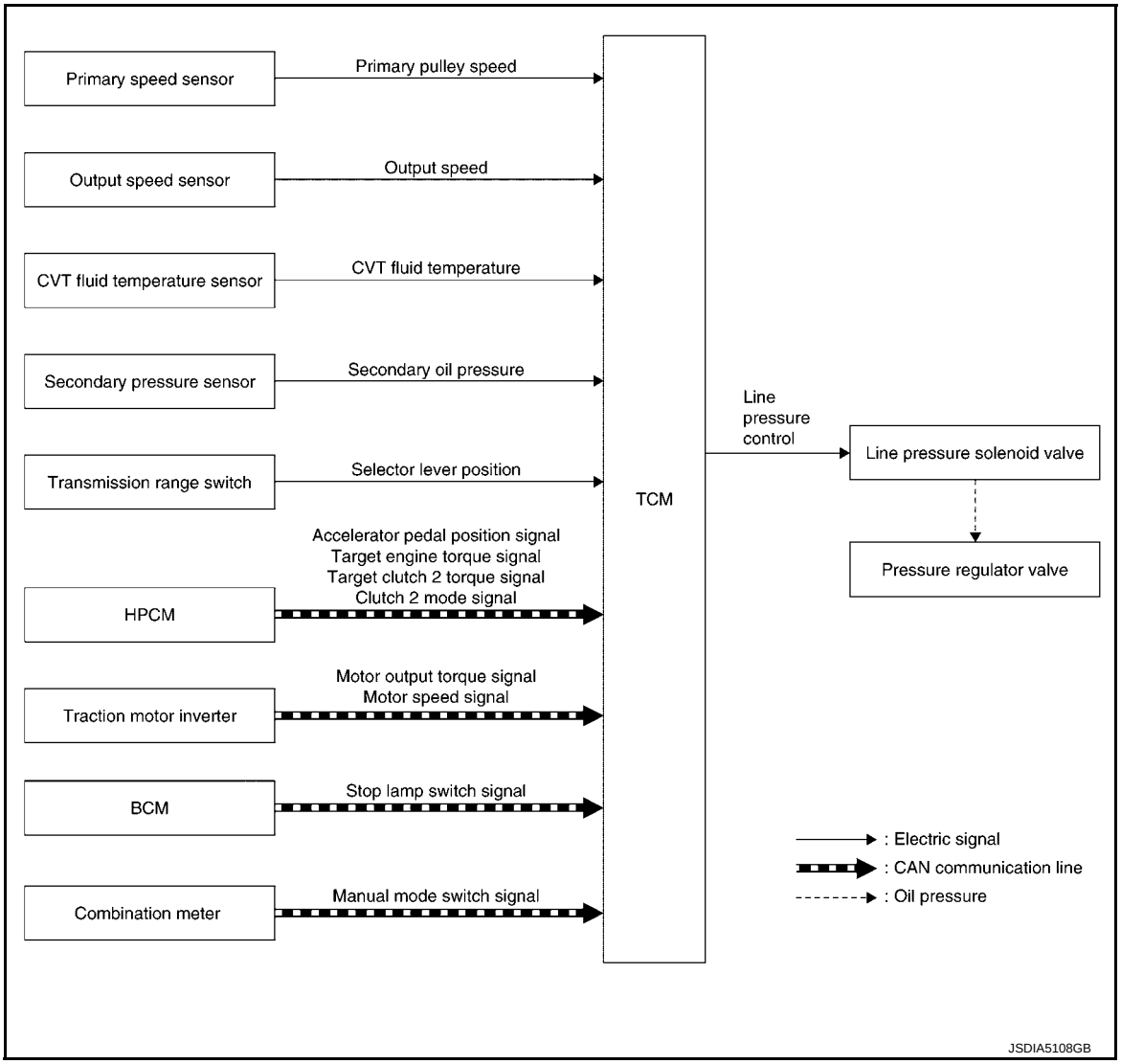
Control	The reverse brake is controlled to avoid becoming engaged when the selector lever is set in “R” position while driving in forward direction at more than the specified speed.
Vehicle behavior in control	If the selector lever is put at “R” position when driving with the forward gear, the gear becomes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

LINE PRESSURE CONTROL

LINE PRESSURE CONTROL : System Description

INFOID:0000000014907386

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, traction motor speed, primary pulley (input) speed, secondary pulley (output) speed, vehicle speed, input torque, stop lamp switch signal, transmission range switch signal, power voltage, target shift ratio, oil temperature, oil pressure, and manual mode signal.

Secondary Pressure Feedback Control

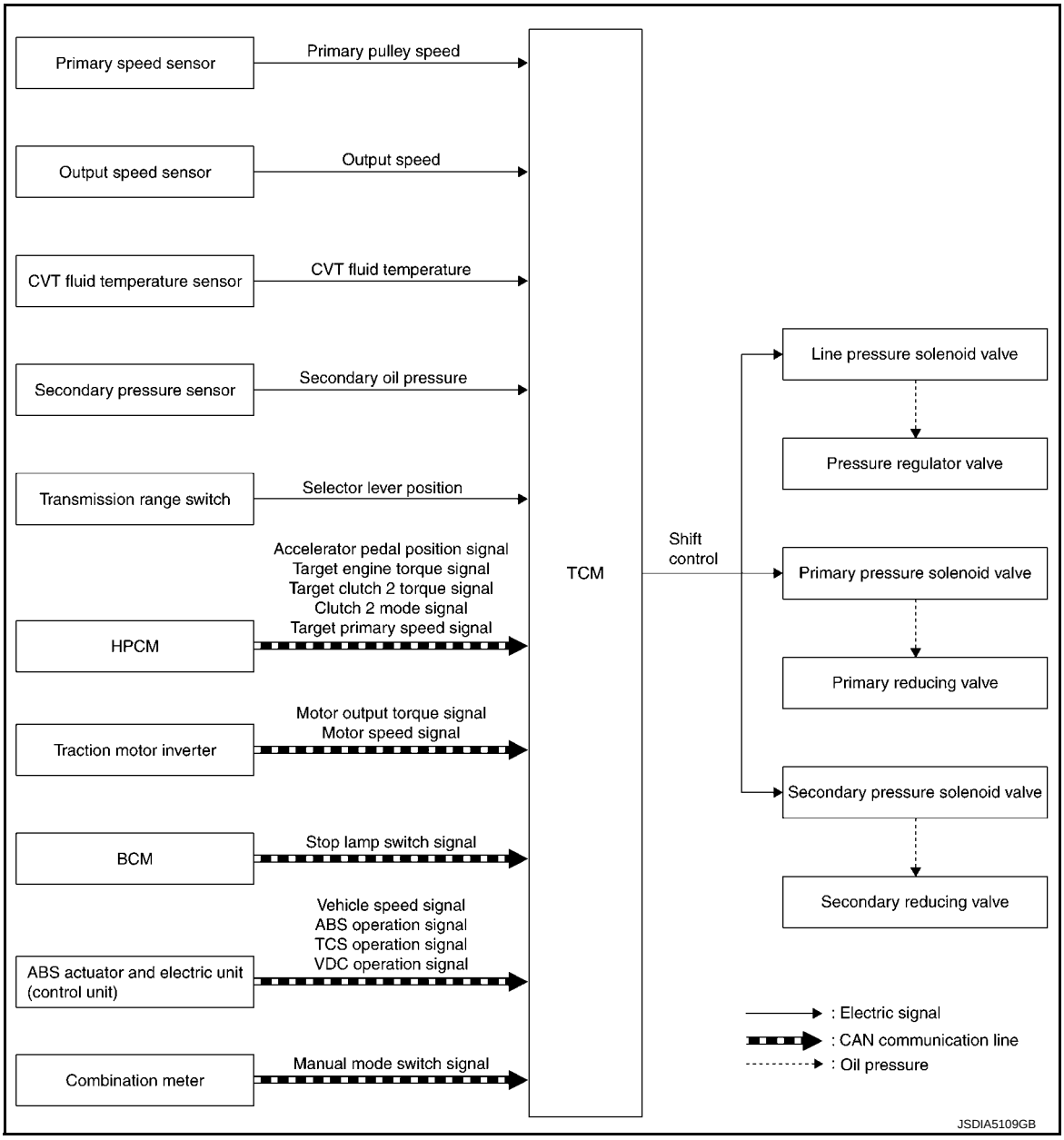
In normal oil pressure control and oil pressure control in shifting, highly accurate secondary pressure is determined by detecting the secondary pressure using an oil pressure sensor and by feedback control.

SHIFT CONTROL

SHIFT CONTROL : System Description

INFOID:0000000014907387

SYSTEM DIAGRAM



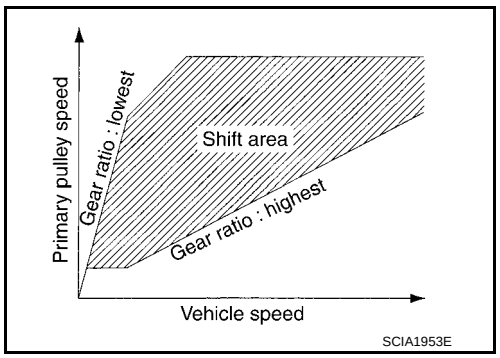
DESCRIPTION

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 output to the primary pressure solenoid valve and secondary pressure solenoid valve to control the line pressure input/output to the pulley, to determine the pulley (movable pulley) position and to control the gear position.

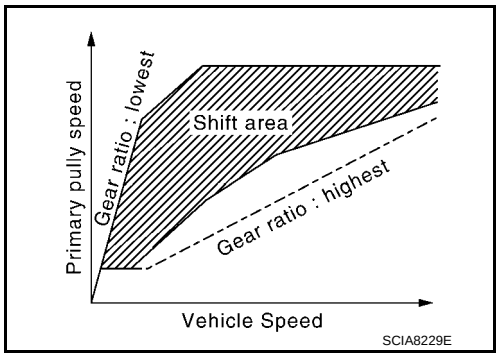
Shift Position Function

- D Position

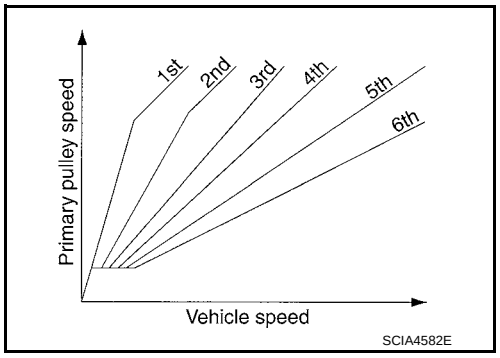
Gear shifting is performed in all shifting ranges from the lowest to the highest gear ratio.



- D Position (Sport Mode)
  The gear ratio is generally high by limiting the shifting range on the high side, and this always generates a large driving power.



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



- Manual Mode Information
  The TCM transmits the manual mode shift refusal signal to the combination meter if the TCM refuses the transmission from the driving status of vehicle when the selector lever shifts to UP side (+ side) or DOWN side (–side). The combination meter blinks shift indicator on the combination meter and sounds the buzzer to indicate the driver that the shifting is not performed when receiving this signal. However, the TCM does not transmit the manual mode shift refusal signal in the conditions as per the following.
- When the selector lever shifts to DOWN side (– side) while driving in M1.
- When the selector lever shifts to UP (+ side) side while driving in M6.

Blipping Control

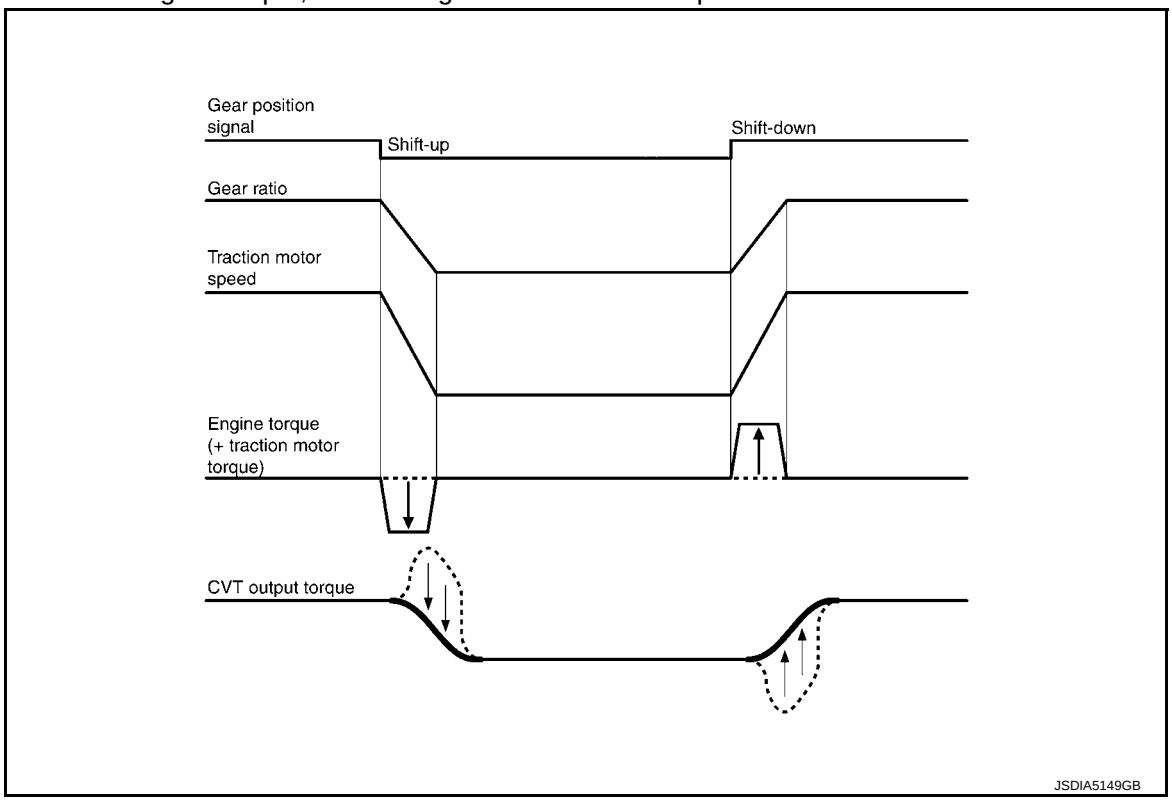
Using engine torque (+ traction motor torque), the blipping control enables a faster and more responsive gear shifting by compensating inertia torque generated from the rotational change during gear shifting in real time.

Operation

- The blipping control is activated when shifting up/down in manual mode.
  NOTE:
  The blipping control is not activated when the vehicle is in the following conditions:
  - When CAN communication is abnormal.
  - During the retard inhibit signal transmission from HPCM.
  - Engine coolant temperature is less than 20°C (68°F).
  - CVT fluid temperature is more than 120°C (248°F).
  - Vehicle speed is less than 20 km/h (13 MPH).

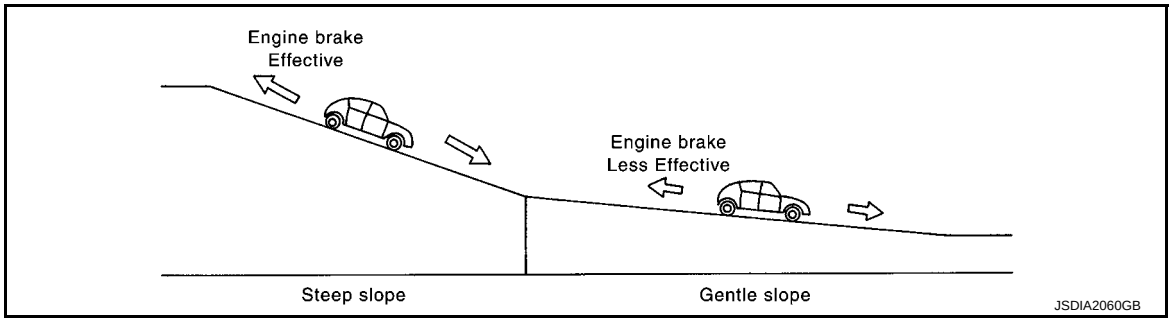
- When ABS, TCS or VDC is active.
- During wheel spin.

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



Hill Climbing And Descending Control

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



Control In Acceleration

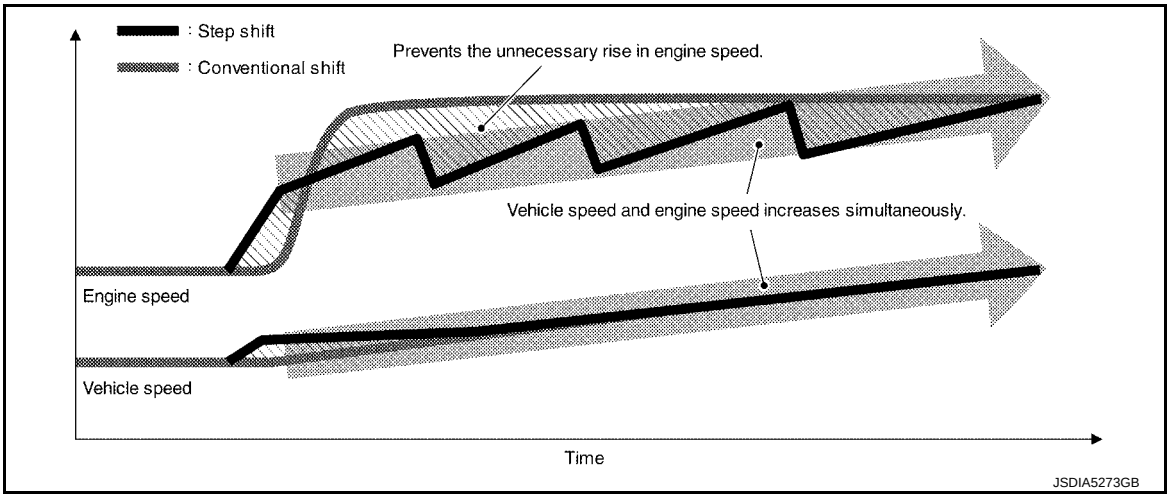
From change of the vehicle speed or accelerator pedal position, the acceleration request level of the driver or driving scene is evaluated. In start or acceleration during driving, the gear shift characteristics with linearity of revolution increase and vehicle speed increase are gained to improve the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

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.

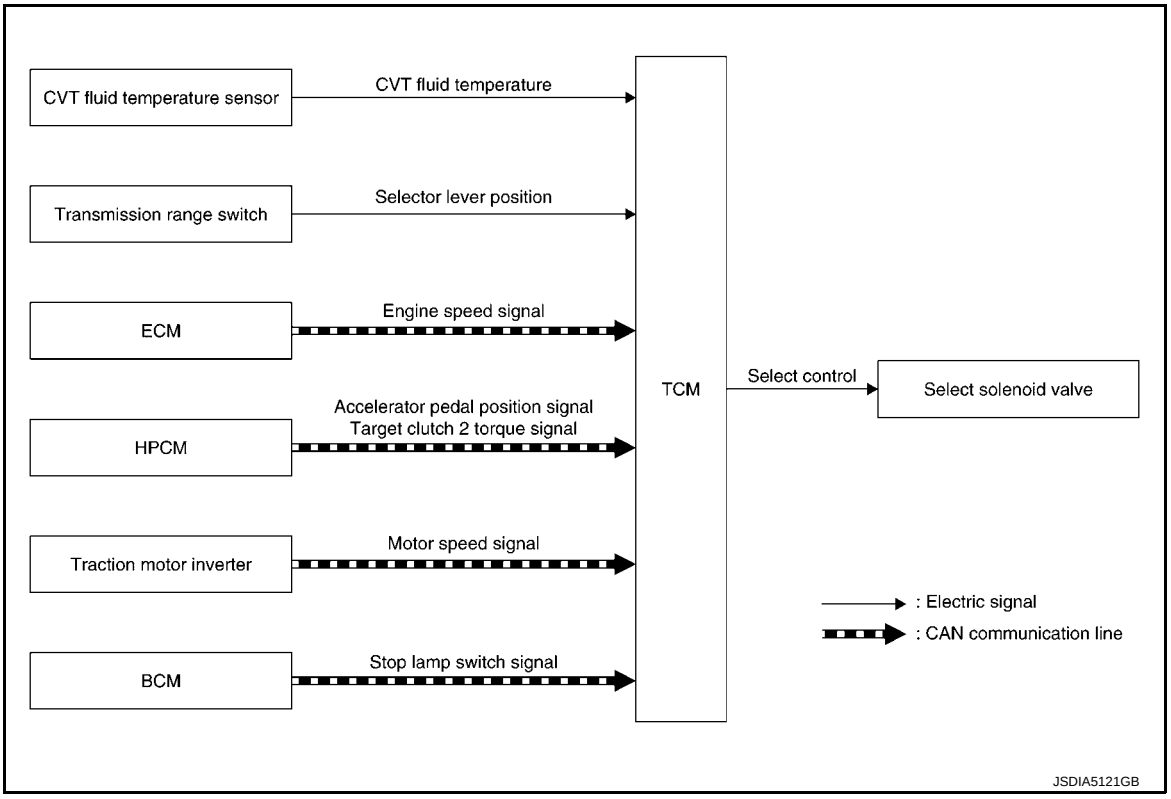


SELECT CONTROL

SELECT CONTROL : System Description

INFOID:0000000014907388

SYSTEM DIAGRAM



DESCRIPTION

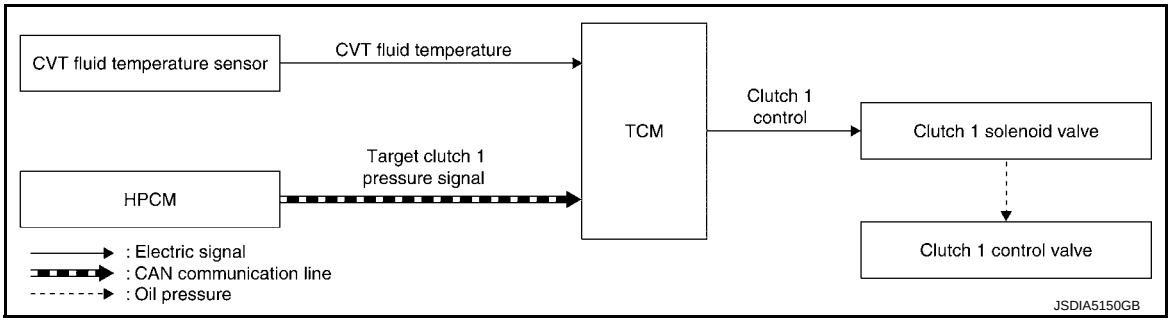
Based on CVT fluid temperature, engine speed, and target clutch 2 torque signal, the optimum operating pressure is set to reduce impact of a selector lever operation while shifting from “N” (“P”) to “D” (“R”) position.

CLUTCH 1 CONTROL

CLUTCH 1 CONTROL : System Description

INFOID:0000000014907389

SYSTEM DIAGRAM



DESCRIPTION

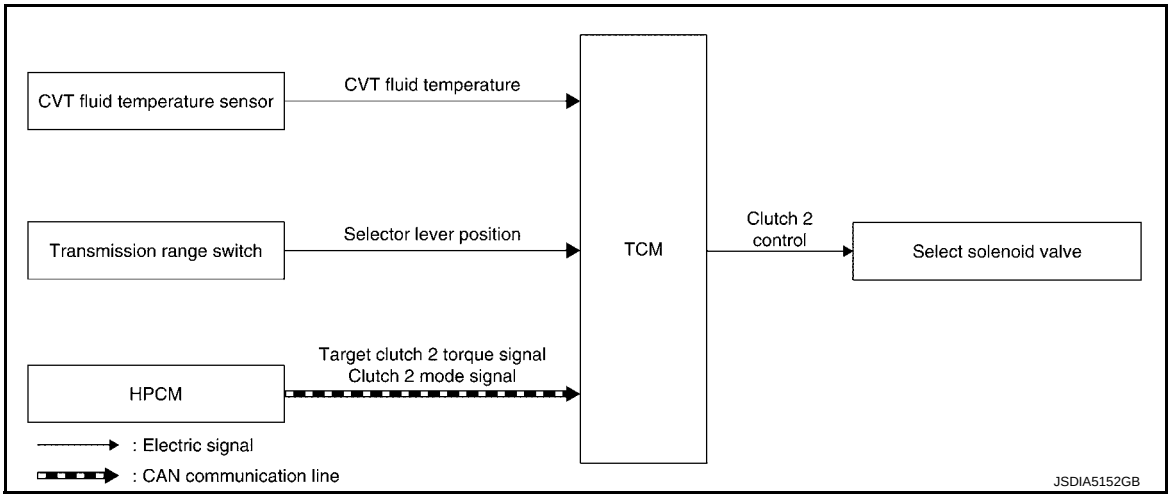
- TCM controls the clutch 1 solenoid valve according to a target clutch 1 pressure signal received from HPCM, and the clutch 1 solenoid valve engages/disengages clutch 1.
- For situations to engage/disengage clutch 1, refer to HBC-21, "HYBRID CONTROL SYSTEM : System Description".

CLUTCH 2 CONTROL

CLUTCH 2 CONTROL : System Description

INFOID:0000000014907390

SYSTEM DIAGRAM



DESCRIPTION

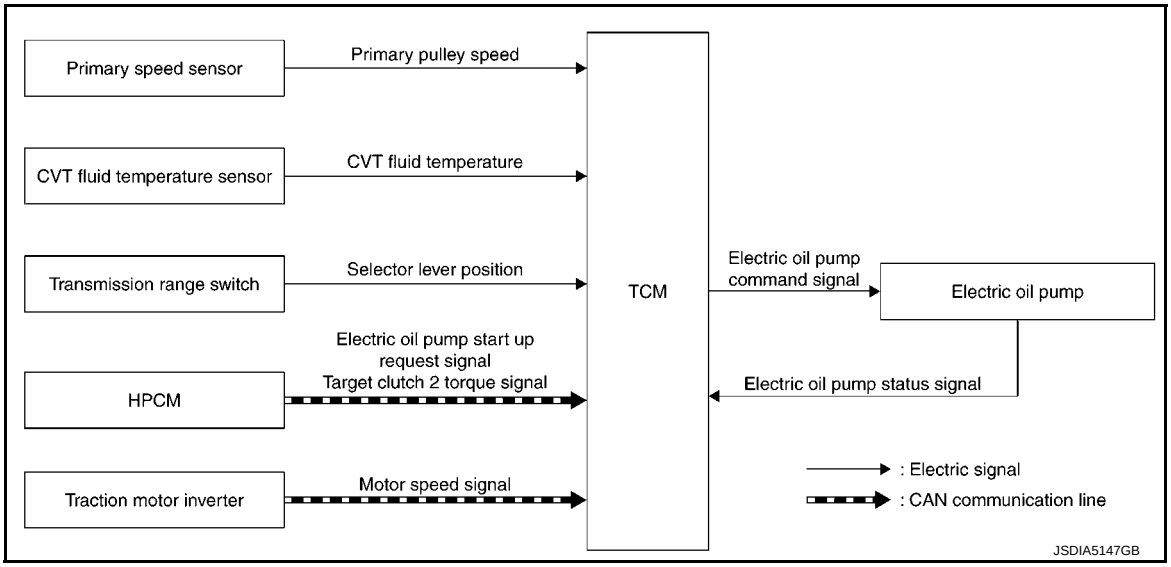
- TCM activates the select solenoid valve according to a clutch 2 mode signal received from HPCM, and the select solenoid valve controls the transfer torque of clutch 2.
- For situations to engage/disengage clutch 2, refer to HBC-21, "HYBRID CONTROL SYSTEM : System Description".

ELECTRIC OIL PUMP CONTROL

ELECTRIC OIL PUMP CONTROL : System Description

INFOID:0000000014907391

SYSTEM DIAGRAM



DESCRIPTION

The electric oil pump operates according to a signal transmitted from TCM via PWM (pulse width modulation) and supplies cooling oil necessary for cooling clutch 2.

Electric oil pump drive control

- TCM calculates the calorific value of clutch 2 based on the relative rotation speed and the transfer torque of clutch 2 and calculates the heat radiation amount of clutch 2 based on the rotation speed of the electric oil pump. TCM estimates the temperature of clutch 2 according to the difference between the calorific value and the heat radiation amount of clutch 2.
- TCM transmits a PWM signal to the electric oil pump to activate it when judging that the temperature of clutch 2 is high and it must be cooled.
- TCM stops transmitting a PWM signal to electric oil pump to deactivate it when judging that the temperature of clutch 2 is low and the cooling is not necessary.
- When the vehicle is started uphill, the calorific value of clutch 2 may increase depending on the situation. For this reason, HPCM interprets the situation of the vehicle and transmits an electric oil pump start up request signal to TCM. TCM activates the oil pump according to this signal.

TCM Output Signal

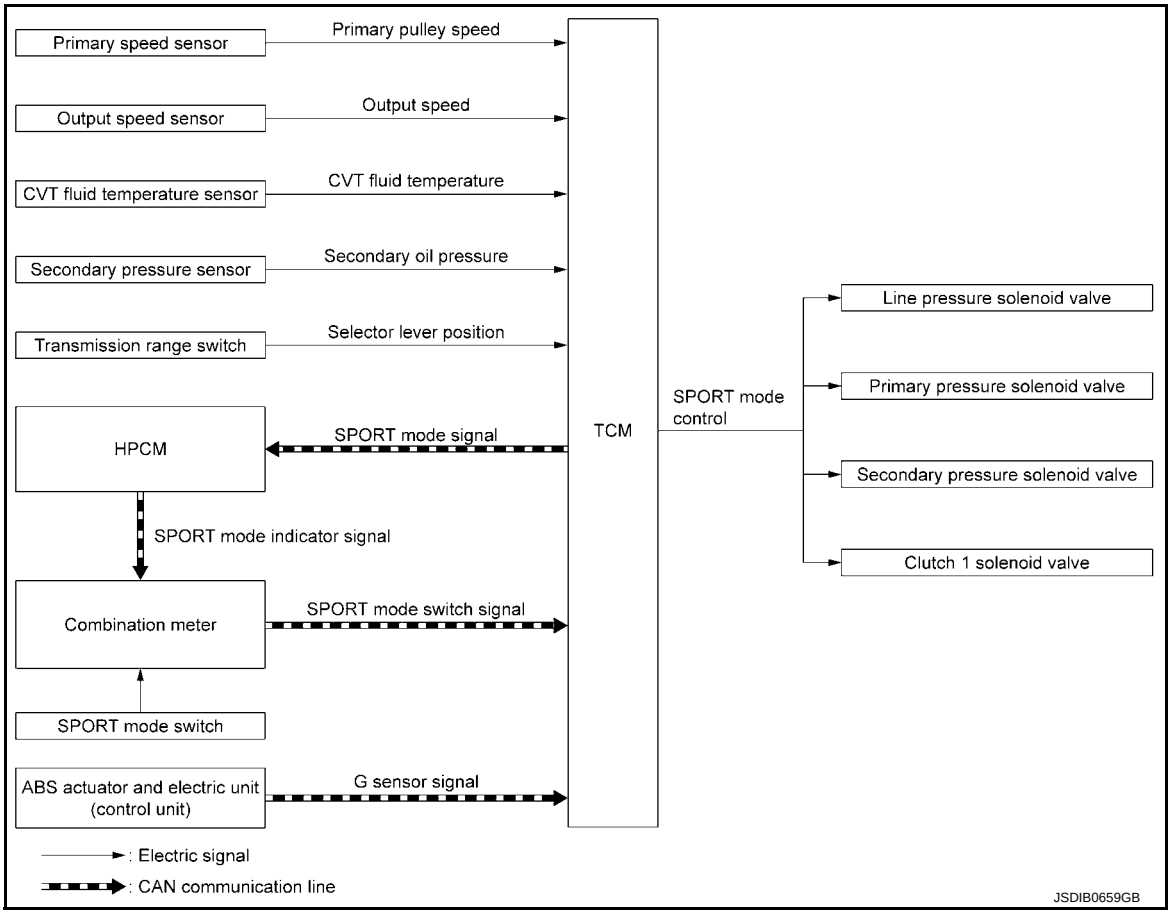
TCM output signal (Duty)	Description
0 – 4%	Disconnection or battery short-circuit
5 – 11%	Warm up electric oil pump
12 – 18%	Stop electric oil pump
19 – 89%	Activate electric oil pump
90 – 95%	Activate electric oil pump (Maximum power)
96 – 100%	Short to ground

SPORT MODE CONTROL

SPORT MODE CONTROL : System Description

INFOID:0000000014924160

SYSTEM DIAGRAM



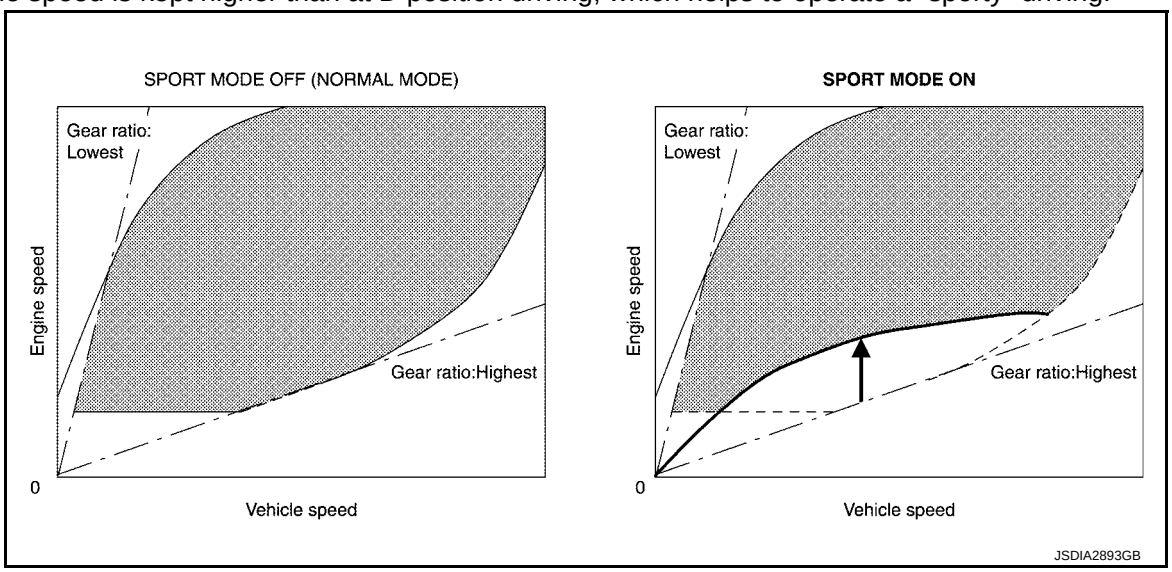
DESCRIPTION

- 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

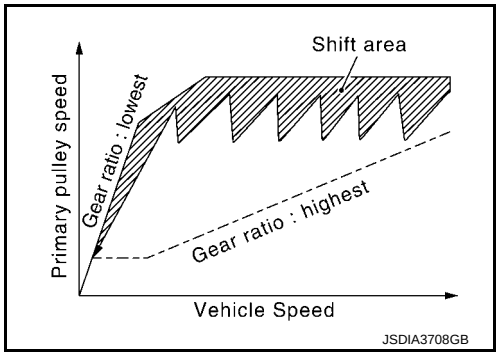
High Gear Ratio Limit

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



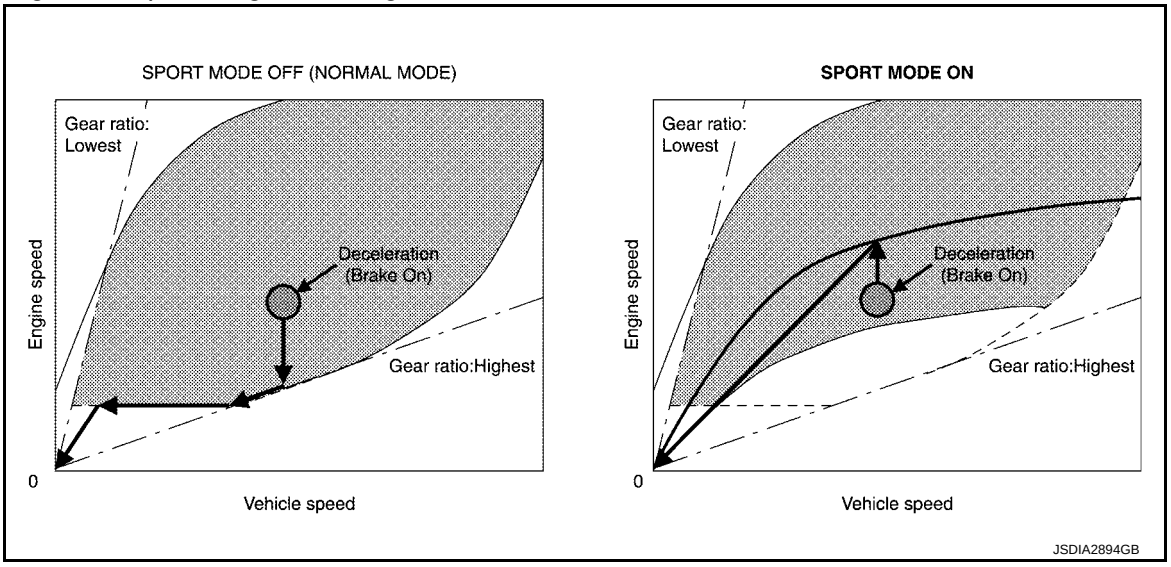
Step Shift

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



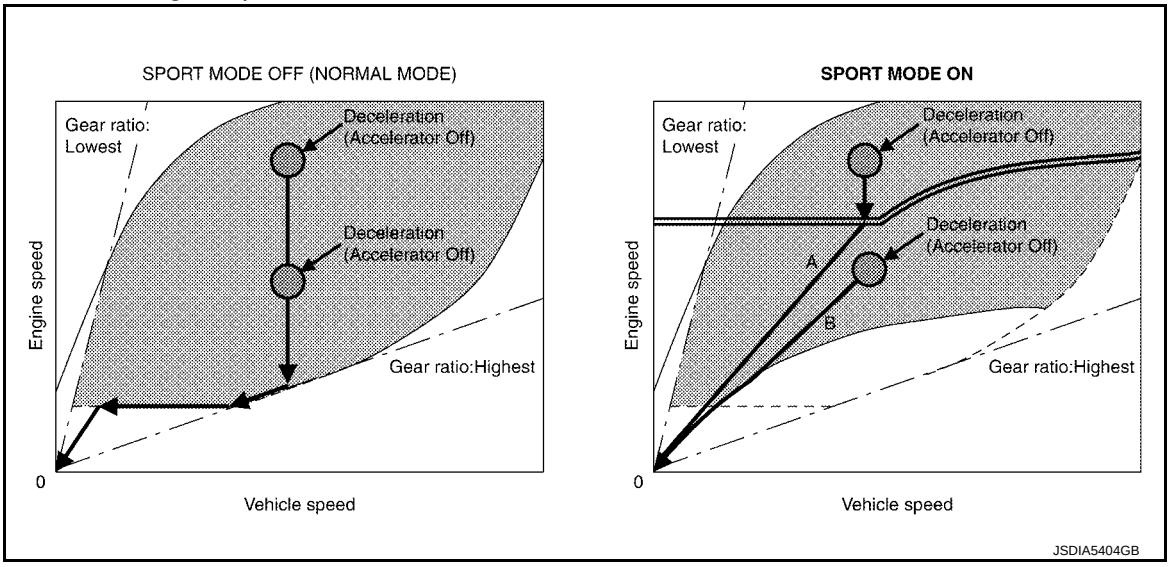
Braking Down Shift

- 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”.



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 CONTROL

ECO MODE CONTROL : System Description

INFOID:0000000014907392

- 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-26, "ECO MODE CONTROL : System Description".
- The gear shift line is not changed with the control mode change for the following conditions:

- When the selector lever is in “D” position.
- When the selector lever is in “M” position.

FAIL-SAFE

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

INFORMATION DISPLAY (COMBINATION METER)

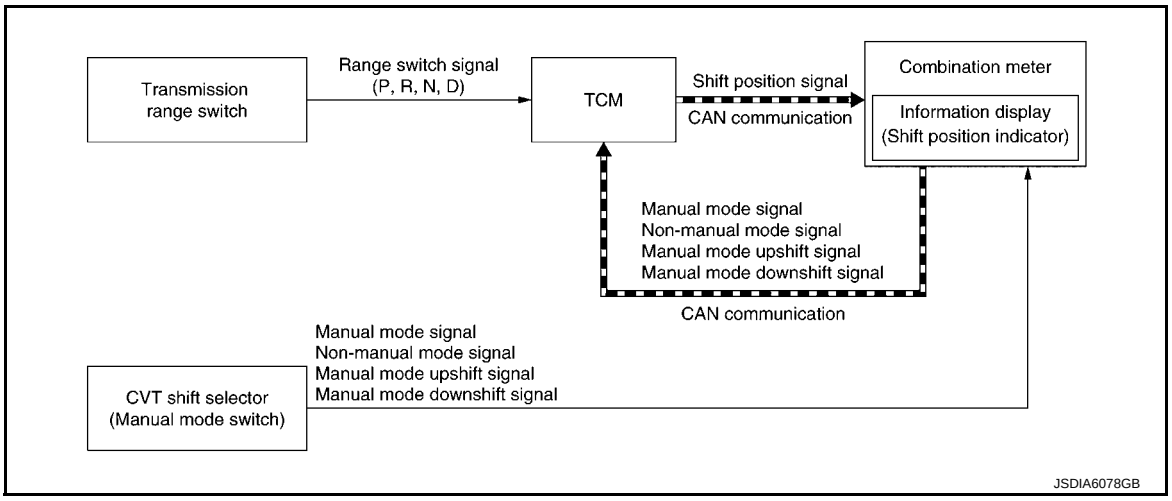
INFORMATION DISPLAY (COMBINATION METER) : Shift Position Indicator

INFOID:0000000014907393

PURPOSE

The shift position indicator displays the shift position of transaxle.

SYSTEM DIAGRAM



SIGNAL PATH

- The TCM judges the shift position by the transmission range switch signal, manual mode switch signal, non-manual mode switch signal, manual mode upshift signal, and manual mode downshift signal.
- The TCM transmits the shift position signal to the combination meter via CAN communication. The combination meter shows the shift position indicator on the information display, according to the signal.

LIGHTING CONDITION

Ignition switch: ON

SHUTOFF CONDITION

Ignition switch: Other than ON

WARNING/INDICATOR/CHIME LIST

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

INFOID:0000000014907394

Name	Design	Arrangement/Function
SPORT indicator lamp	SPORT	Regarding the arrangement. Refer to MWI-6, "METER SYSTEM : Design".
		Regarding the function. Refer to DMS-6, "SPORT Mode Indicator Lamp".
Malfunction indicator lamp (MIL)		Regarding the arrangement. Refer to MWI-6, "METER SYSTEM : Design".
		Regarding the function. Refer to EC-77, "DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp (MIL)".

WARNING/INDICATOR/CHIME LIST : Warning/Indicator (On Information Display)

INFOID:0000000014907395

Name	Function
ECO mode indicator	Refer to DMS-27, "INFORMATION DISPLAY (COMBINATION METER) : ECO Mode Indicator".
Shift position indicator	Refer to TM-50, "INFORMATION DISPLAY (COMBINATION METER) : Shift Position Indicator".

ON BOARD DIAGNOSTIC (OBD) SYSTEM

Diagnosis Description

INFOID:0000000014907396

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:0000000014907397

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-62, "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:0000000014907398

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-70, "DTC Index".

2 TRIP DETECTION DIAGNOSIS

When initial malfunction is detected, TCM memorizes DTC of the 1st trip. MIL does not light at this stage. <1 trip>
If the same malfunction is detected again in next driving, TCM memorizes DTC. When DTC is memorized, MIL lights. <2 trip>
“Trip” of the “2 trip detection diagnosis” indicates the driving mode that executes self-diagnosis during driving.

×: Check possible —: Check not possible

Item	DTC at the 1st trip		DTC		MIL	
	Display at the 1st trip	Display at the 2nd trip	Display at the 1st trip	Display at the 2nd trip	Illumination at the 1st trip	Illumination at the 2nd trip
1 trip detection diagnosis (Refer to TM-70, "DTC Index")	—	—	×	—	×	—
2 trip detection diagnosis (Refer to TM-70, "DTC Index")	×	—	—	×	—	×

DIAGNOSIS DESCRIPTION : DTC and DTC of 1st Trip

INFOID:0000000014907399

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 J2012/ISO 15031-6. 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-55, "CONSULT Function".
- If DTC of the 1st trip is detected, it is necessary to check the cause according to the “Work Flow”. Refer to TM-90, "Work Flow".

DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp (MIL)

INFOID:0000000014907400

- 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-77, "DIAGNOSIS DESCRIPTION : Malfunction Indicator Lamp (MIL)".

DIAGNOSIS DESCRIPTION : Counter System

INFOID:0000000014907401

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.

- 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 (68°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

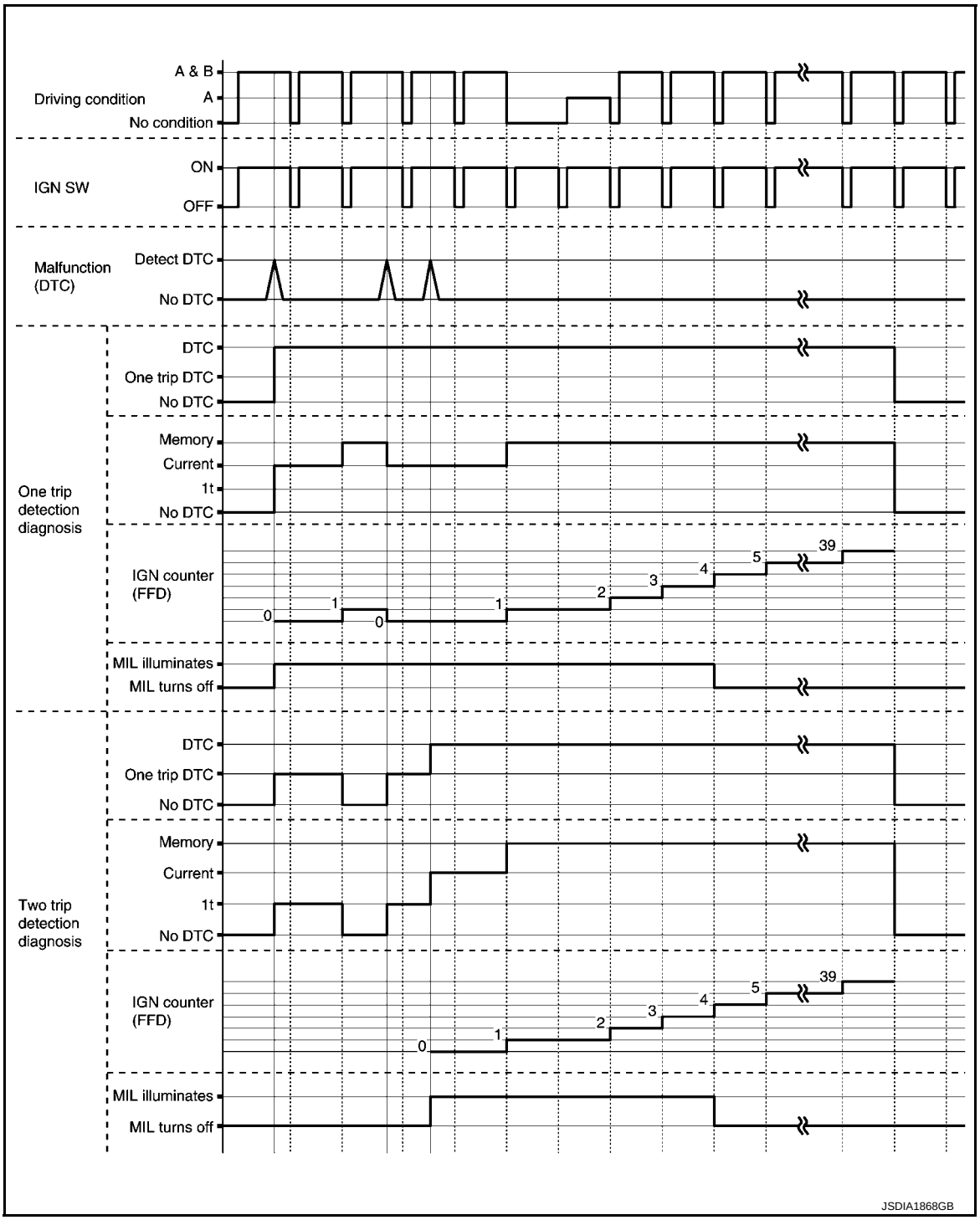
Driving condition B is the driving condition that performs all diagnoses once.
In specific, count-up is performed when all of the following conditions are satisfied.

- 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.

TIME CHART



CONSULT Function

INFOID:0000000014907402

CAUTION:

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

APPLICABLE ITEM

Conditions	Function
Work Support	The settings for ECU functions can be changed.
Self Diagnostic Results	The ECU self diagnostic results are displayed.
Data Monitor	The ECU input/output data is displayed in real time.
CAN Diagnosis Support Monitor	The result of transmit/receive diagnosis of CAN communication is displayed.
Active Test	The ECU activates outputs to test components.
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-70, "DTC Index".

DTC at 1st trip and method to read DTC

- DTC 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.)

Freeze Frame Data (FFD)

The following vehicle status is recorded when DTC is detected and is displayed on CONSULT.

Item name	Display content
ODOMETER (km or mile)	Total driving distance (odometer value) upon DTC detection is displayed.
IGN counter (039)	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-53, "DIAGNOSIS DESCRIPTION : Counter System". Numerical value is displayed indicating the number of times that ignition switch is turned ON after the DTC is detected. • 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 HEV system CAN. • Models with ABS are displayed.
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.

Monitored item	(Unit)	Remarks
ENG SPEED SIG	(rpm)	Displays the engine speed received through HEV system CAN.
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.
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.
PRI SPEED	(rpm)	Displays the primary pulley speed recognized by TCM.
SEC SPEED	(rpm)	Displays the secondary pulley speed recognized by TCM.
MOTOR SPEED	(rpm)	Displays the traction motor speed received through HEV system CAN.
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 HEV system CAN.
VENG TRQ	(Nm)	Display the engine torque recognized by TCM.
PRI TRQ	(Nm)	Display the input shaft torque of CVT.
SEC PRESSURE	(MPa, kg/cm2, or psi)	Displays the secondary pressure calculated from the signal voltage of the secondary pressure sensor.
PRI PRESSURE	(MPa, kg/cm2, or psi)	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 PLLY GR RATIO		Displays the target gear ratio of the pulley from processing of gear shift control.
LINE PRS	(MPa, kg/cm2, or psi)	Displays the target oil pressure of the line pressure solenoid valve calculated from oil pressure processing of gear shift control.
TRGT PRI PRESSURE	(MPa, kg/cm2, or psi)	Displays the target oil pressure of the primary pressure solenoid valve calculated from oil pressure processing of gear shift control.
TRGT CL2 PRESSURE	(MPa, kg/cm2, or psi)	Displays a TCM-calculated target oil pressure sent to the select solenoid valve, according to a signal from HPCM.
TRGT SEC PRESSURE	(MPa, kg/cm2, or psi)	Displays the target oil pressure of the secondary pressure solenoid valve calculated from oil pressure processing of gear shift control.
CL1 SOLENOID	(A)	Displays the command current from TCM to the clutch 1 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.
CL2 SOLENOID	(A)	Displays the command current* from TCM to the select solenoid valve. *: TCM calculates it according to a signal from HPCM.
CL1 SOLENOID MONITOR	(A)	Monitors the command current from TCM to the clutch 1 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.

Monitored item	(Unit)	Remarks
CL2 SOLENOID MONITOR	(A)	Monitors the command current* from TCM to the select solenoid valve and displays the monitored value. *: TCM calculates it according to a signal from HPCM.
D POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (D position).
N POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (N position).
R POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (R position).
P POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (P position).
L POSITION SW	(On/Off)	Displays the operation status of the transmission range switch (L position).
BRAKESW	(On/Off)	Displays the reception status of the stop lamp switch signal received through HEV system CAN.
IDLE SW	(On/Off)	Displays the reception status of the closed throttle position signal received through HEV system CAN.
SPORT MODE SW	(On/Off)	Displays the reception status of the sport mode switch signal received through HEV system CAN.
ECO MODE SW	(On/Off)	Displays the reception status of the ECO mode switch signal received through HEV system CAN.
STRDWNSW	(On/Off)	Displays the operation status of the paddle shifter (down switch).
STRUPSW	(On/Off)	Displays the operation status of the paddle shifter (up switch).
DOWNLVR	(On/Off)	Displays the operation status of the selector lever (down switch).
UPLVR	(On/Off)	Displays the operation status of the selector lever (up switch).
NONMMODE	(On/Off)	Displays if the selector lever position is not at the manual shift gate.
MMODE	(On/Off)	Displays if the selector lever position is at the manual shift gate.
SHIFT IND SIGNAL		Displays the transaxle value of shift position signal transmitted via HEV system CAN.
CVT LAMP	(On/Off)	Displays the transaxle status of the CVT warning lamp signal transmitted through HEV system CAN.
SPORT MODE IND	(On/Off)	Displays the transaxle status of the SPORT indicator lamp signal transmitted through HEV system CAN.
MANU MODE SIGNAL	(On/Off)	Displays the transaxle status of the manual mode signal transmitted through HEV system CAN.
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 HEV system CAN.
VDC ON	(On/Off)	Displays the reception status of the VDC operation signal received through HEV system CAN.
TCS ON	(On/Off)	Displays the reception status of the TCS operation signal received through HEV system CAN.
ABS FAIL SIGNAL	(On/Off)	Displays the reception status of the ABS malfunction signal received through HEV system CAN.
ABS ON	(On/Off)	Displays the reception status of the ABS operation signal received through HEV system CAN.
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”.
ENGBRKLVL	(On/Off)	• Displays the setting of “ENGINE BRAKE ADJ” in “Work Support”. • This monitor item does not use.
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.

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.
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.
CVT-B		• Displays CVT fluid temperature count. • This monitor item does not use.
CVT-A	(On/Off)	• Displays CVT fluid temperature count. • This monitor item does not use.

WORK SUPPORT

Item name	Description
CONFORM CVTF DETERIORTN	Checks the degradation level of the CVT fluid under severe conditions.
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”.
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.

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.

Engine brake adjustment

ENGINE BRAKE LEVEL
ON : Turn ON the engine brake control.
OFF : Turn OFF the engine brake control.

ACTIVE TEST

Item name	Description
CVT OIL COOLER FAN CIRCUIT*	Checks the operation of CVT oil cooler fan relay.

*: This item does not use.

ECU DIAGNOSIS INFORMATION

TCM

Reference Value

INFOID:0000000014907403

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.
PRI SPEED SEN	• While driving • Accelerator pedal: ON	Approximately matches the engine speed.
SEC REV SENSOR	While driving	VSP SENSOR × 40
ENG SPEED SIG	Engine running	Almost same reading as tachometer
SEC PRESSURE SEN	• After engine warm up • Selector lever: “N” position • At idle	1.05 – 1.18 V
PRI PRESSURE SEN	• After engine warm up • Selector lever: “N” position • At idle	0.88 – 1.01 V
ATF TEMP SEN	CVT fluid: Approx. 20°C (68°F)	2.01 – 2.05 V
	CVT fluid: Approx. 50°C (122°F)	1.45 – 1.50 V
	CVT fluid: Approx. 80°C (176°F)	0.90 – 0.94 V
VIGN SEN	Ignition switch: ON	10.0 – 16.0 V
PVIGN VOLT	Ignition switch: ON	10.0 – 16.0 V
VEHICLE SPEED	While driving	Almost same as the speedometer display.
PRI SPEED	• While driving • Accelerator pedal: ON	Approximately matches the engine speed.
SEC SPEED	While driving	VSP SENSOR × 40
MOTOR SPEED	• While driving • Accelerator pedal: ON	Approximately matches the engine speed.
PULLEY GEAR RATIO	• Selector lever: “D” position • While driving	2.631 – 0.378
	Selector lever: “R” position	5.604

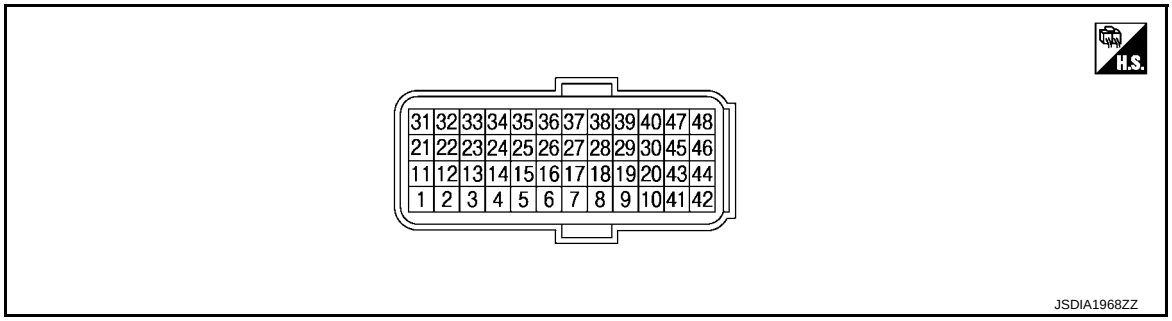
Monitor item	Condition	Value/Status (Approx.)
G SPEED	Vehicle is stopped	0.00 G
	During acceleration	The value changes to the positive side along with acceleration.
	During deceleration	The value changes to the positive side along with deceleration.
ACCEL POSI SEN 1	Release accelerator pedal	0 deg
	Depress accelerator pedal fully	80 deg
VENG TRQ	While driving	The value changes along with acceleration/ deceleration.
PRI TRQ	While driving	The value changes along with acceleration/ deceleration.
SEC PRESSURE	• After engine warm up • Selector lever: “N” position • At idle	0.9 MPa
PRI PRESSURE	• After engine warm up • Selector lever: “N” position • At idle	0.5 MPa
FLUID TEMP	Ignition switch ON.	Displays the CVT fluid temperature.
DSR REV	While driving	It varies along with the driving condition.
TGT PLLY GR RATIO	• While driving • Selector lever: “D” position	2.631 – 0.378
	Selector lever: “R” position	5.604
LINE PRS	• After engine warm up • Selector lever: “N” position • At idle	1.4 MPa
	• After engine warm up • Selector lever: “N” position • Depress accelerator pedal fully	4.930 – 5.430 MPa
TRGT PRI PRESSURE	• After engine warm up • Selector lever: “N” position • At idle	0.6 MPa
TARGET CL2 PRESSURE	• After engine warm up • Selector lever: “N” position • At idle	0 MPa
	• After engine warm up • Selector lever: “D” position • Depress brake pedal • Release accelerator pedal	0.033 – 0.246 MPa
TARGET SEC PRESSURE	• After engine warm up • Selector lever: “N” position • At idle	0.9 MPa
CL1 SOLENOID	—	—
ISOLT2	—	—
PRI SOLENOID	—	—
SEC SOLENOID CURRENT	—	—
CL2 SOLENOID	—	—
CL1 SOLENOID MONITOR	—	—
SOLMON2	—	—
PRI SOL MON	—	—
SEC SOL MON CURRENT	—	—
CL2 SOLENOID MONITOR	—	—

Monitor item	Condition	Value/Status (Approx.)
D POSITION SW	Selector lever: “D” position	On
	Other than the above	Off
N POSITION SW	Selector lever: “N” position	On
	Other than the above	Off
R POSITION SW	Selector lever: “R” position	On
	Other than the above	Off
P POSITION SW	Selector lever: “P” position	On
	Other than the above	Off
L POSITION SW*	Always	Off
BRAKESW	Depress brake pedal	On
	Release brake pedal	Off
IDLE SW	Release accelerator pedal	On
	Depress accelerator pedal fully	Off
SPORT MODE SW	Press the sport mode switch	On
	Other than the above	Off
ECO MODE SW	Press the ECO mode switch	On
	Other than the above	Off
STRDWNSW*	Always	Off
STRUPSW*	Always	Off
DOWNLVR	Selector lever: -side	On
	Other than the above	Off
UPLVR	Selector lever: +side	On
	Other than the above	Off
NONMMODE	Manual shift gate position (neutral, +side, -side)	Off
	Other than the above	On
MMODE	Manual shift gate position (neutral, +side, -side)	On
	Other than the above	Off
SHIFT IND SIGNAL	When the selector lever is positioned in between each position.	OFF
	Selector lever: P position	P
	Selector lever: R position	R
	Selector lever: N position	N
	Selector lever: D position	D
	Manual mode: 1st	1st
	Manual mode: 2nd	2nd
	Manual mode: 3rd	3rd
	Manual mode: 4th	4th
	Manual mode: 5th	5th
	Manual mode: 6th	6th
CVT LAMP	Approx. 2 seconds after ignition switch ON	On
	Other than the above	Off
SPORT MODE IND*	Always	Off

Monitor item	Condition	Value/Status (Approx.)
MANU MODE SIGNAL	Driving with manual mode	On
	Other than the above	Off
DS RANGE SIGNAL*	Always	Off
ECO MODE SIGNAL	Always	Off
VDC ON	VDC is activated	On
	Other than the above	Off
TCS ON	TCS is activated	On
	Other than the above	Off
ABS FAIL SIGNAL	When ABS malfunction signal is received	On
	Other than the above	Off
ABS ON	ABS is activated	On
	Other than the above	Off
RANGE	Selector lever: P and N positions	N/P
	Selector lever: R position	R
	Selector lever: D position	D
	Selector lever: M position	
M GEAR POS	Manual mode: 1st – 6th	1 to 6
G SEN SLOPE*	Always	0%
G SEN CALIBRATION	When G sensor calibration is completed	DONE
	When G sensor calibration is not completed	YET
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	Drive mode select switch: STANDARD mode	NOMAL
	Drive mode select switch: ECO mode	ECO
	Drive mode select switch: SPORT mode	SPROT
	Drive mode select switch: SNOW mode	SNOW
SNOW MODE	Always	Off
ECO MODE	Drive mode select switch: ECO mode	On
	Other than the above	Off
NORMAL MODE	Drive mode select switch: STANDARD mode	On
	Other than the above	Off
SPORT MODE	Drive mode select switch: SPORT mode	On
	Other than the above	Off
ELECTRIC OP DUTY	Electric oil pump is warm up	5 – 11%
	Electric oil pump is stopped	12 – 18%
	Electric oil pump is activated	19 – 95%
E-OP DUTY MON	Electric oil pump is stopped	5 – 11%
	Electric oil pump is activated	12 – 68%
CVT-B*	—	—
CVT-A*	—	—

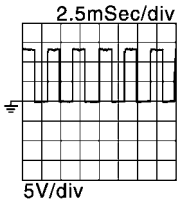
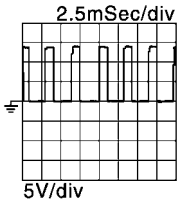
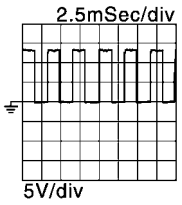
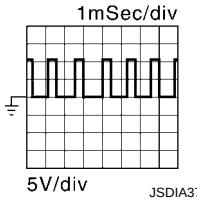
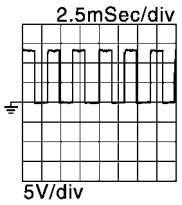
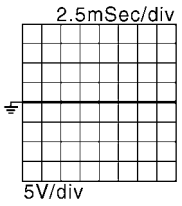
*: This monitor items does not use.

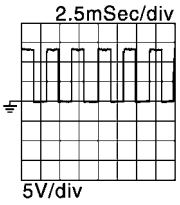
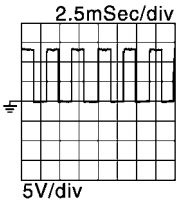
TERMINAL LAYOUT



INPUT/OUTPUT SIGNAL STANDARD

Terminal No. (Wire color)		Description		Condition		Value (Approx.)
+	–	Signal	Input/ Output			
2* (SB)	—	—	—	—		—
3* (LG)	—	—	—	—		—
4 (Y)	Ground	D position switch	Input	Ignition switch ON	Selector lever: “D” position	10 – 16 V
					Other than the above	0 V
5 (R)	Ground	N position switch	Input		Selector lever: “N” position	10 – 16 V
					Other than the above	0 V
6 (G)	Ground	R position switch	Input		Selector lever: “R” position	10 – 16 V
					Other than the above	0 V
7 (V)	Ground	P position switch	Input		Selector lever: “P” position	10 – 16 V
					Other than the above	0 V
11 (W)	Ground	Sensor ground	—	Always		0 V
12 (LG)	Ground	CVT fluid temperature sensor	Input	Ignition switch ON	CVT fluid: Approx. 20°C (68°F)	2.01 – 2.05 V
					CVT fluid: Approx. 50°C (122°F)	1.45 – 1.50 V
					CVT fluid: Approx. 80°C 176°F)	0.90 – 0.94 V
15* (B)	—	—	—	—		—
16 (R)	Ground	Secondary pressure sensor	Input	• After engine warm up • Selector lever: “N” position • At idle		1.05 – 1.18 V
17 (L)	Ground	Primary pressure sensor	Input	• After engine warm up • Selector lever: “N” position • At idle		0.88 – 1.01 V
23 (G)	—	CAN-L	Input/ Output	—		—
25 (W)	Ground	Electric oil pump command signal	Output	—		—
26 (P)	Ground	Sensor power supply	Output	Ignition switch: ON		5.0 V
				Ignition switch: OFF		0 V

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal	Input/ Output		
30 (BR)	Ground	Line pressure solenoid valve	Output	• After engine warm up • Selector lever: “N” position • At idle	 JSDIA1897GB
				• After engine warm up • Selector lever: “N” position • Depress accelerator pedal fully	 JSDIA1898GB
32 (P)	Ground	Electric oil pump status signal	Input	—	—
33 (L)	—	CAN-H	Input/ Output	—	—
34 (R)	Ground	Output speed sensor	Input	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	150 Hz  JSDIA1897GB
35 (LG)	Ground	Primary speed sensor	Input	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	1250 Hz  JSDIA3770GB
37 (BG)	Ground	Select solenoid valve	Output	• Engine started • Selector lever: “D” position • At idle	 JSDIA1897GB
38 (GR)	Ground	Clutch 1 solenoid valve	Output	• Selector lever: “D” position • While driving	 JSDIA1903GB

Terminal No. (Wire color)		Description		Condition	Value (Approx.)
+	–	Signal	Input/ Output		
39 (SB)	Ground	Secondary pressure solenoid valve	Output	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	 JSDIA1897GB
40 (V)	Ground	Primary pressure solenoid valve	Output	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	 JSDIA1897GB
41 (B)	Ground	Ground	Output	Always	0 V
42 (B)	Ground	Ground	Output	Always	0 V
45 (LG)	Ground	Battery power supply (memory backup)	Input	Always	10 – 16 V
46 (LG)	Ground	Battery power supply (memory backup)	Input	Always	10 – 16 V
47 (R)	Ground	Ignition power supply	Input	Ignition switch: ON	10 – 16 V
				Ignition switch: OFF	0 V
48 (R)	Ground	Ignition power supply	Input	Ignition switch: ON	10 – 16 V
				Ignition switch: OFF	0 V

*: This harness does not use.

Fail-safe

INFOID:0000000014907404

TCM has a fail-safe mode. The mode functions so that operation can be continued even if the signal circuit of the main electronically controlled input/output parts is damaged.
If the vehicle shows following behaviors including “poor acceleration”, a malfunction of the applicable system is detected by TCM and the vehicle may be in a fail-safe mode. At this time, check the DTC code and perform inspection and repair according to the malfunction diagnosis procedures.

Fail-safe function

DTC	Vehicle behavior	Conditions of vehicle
P062F	Not changed from normal driving	—
P0705	• Shift position indicator on combination meter is not displayed • Vehicle speed is creep speed	—
P0706	• Shift position indicator on combination meter is not displayed • Vehicle speed is creep speed	—

DTC	Vehicle behavior	Conditions of vehicle
P0712	• Start is slow • Acceleration is slow	Engine coolant temperature when engine start: Temp. ≥ 10°C (50°F)
	• Selector shock is large • 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 star: Temp. < −35°C (−31°F)
P0713	• Start is slow • Acceleration is slow	Engine coolant temperature when engine start: Temp. ≥ 10°C (50°F)
	• Selector shock is large • 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 star: Temp. < −35°C (−31°F)
P0715	• Start is slow • Acceleration is slow • Manual mode is not activated	—
P0746	Vehicle does not run	—
P0776	• Selector shock is large • Start is slow • Acceleration is slow • Vehicle speed is not increased	When a malfunction occurs on the low oil pressure side
	• Selector shock is large • Start is slow • Acceleration is slow	When a malfunction occurs on the high oil pressure side
P0778	• Selector shock is large • Start is slow • Acceleration is slow	—
P0779	• Selector shock is large • Start is slow • Acceleration is slow	—
P0826	Manual mode is not activated	—
P0841	Not changed from normal driving	—
P0847	Not changed from normal driving	—
P0848	Not changed from normal driving	—
P084C	Not changed from normal driving	—
P084D	Not changed from normal driving	—
P0863	Vehicle does not run	—
P0890	Vehicle does not run	—
P0962	• Selector shock is large • Start is slow • Acceleration is slow • Traction motor run prohibited	—
P0963	• Selector shock is large • Start is slow • Acceleration is slow • Traction motor run prohibited	—
P0965	• Selector shock is large • Start is slow • Acceleration is slow	When a malfunction occurs on the low oil pressure side
	Selector shock is large	When a malfunction occurs on the high oil pressure side

DTC	Vehicle behavior	Conditions of vehicle
P0966	• Selector shock is large • Start is slow • Acceleration is slow	—
P0967	• Selector shock is large • Start is slow • Acceleration is slow	—
P188E	Not changed from normal driving	—
P1890	Not changed from normal driving	—
P1891	Not changed from normal driving	—
P1892	Not changed from normal driving	—
P2765	• Engine torque restriction to 40 Nm • Manual mode is not activated	—
P2813	Vehicle does not run	When a malfunction occurs on the low oil pressure side
	Selector shock is large	When a malfunction occurs on the high oil pressure side
P2814	Vehicle does not run	—
P2815	After stop the vehicle, vehicle does not run	—
P281D	Vehicle does not run	—
P281E	Traction motor run prohibited	—
U0073	Vehicle does not run	—
U0100	• Selector shock is large • Start is slow • Acceleration is slow	—
U0110	Engine torque restriction to 40 Nm	When a traction motor and an engine drive
	Vehicle does not run	When a traction motor drive
U0140	Not changed from normal driving	—
U0155	Not changed from normal driving	—
U0164	Not changed from normal driving	—
U0293	Vehicle does not run	—
U0300	• Selector shock is large • Start is slow • Acceleration is slow	—
U1000	Vehicle does not run	—
U110E	Not changed from normal driving	—
U110F	Not changed from normal driving	—
U1110	Not changed from normal driving	—
U1117	Not changed from normal driving	—

Protection Control

INFOID:0000000014907405

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

CONTROL FOR WHEEL SPIN

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

TORQUE IS REDUCED WHEN DRIVING WITH THE REVERSE GEAR

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

CONTROL WHEN FLUID TEMPERATURE IS HIGH

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

REVERSE PROHIBIT CONTROL

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

DTC Inspection Priority Chart

INFOID:0000000014907406

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

Priority	DTC	Items (CONSULT screen terms)	Reference
1	P0863	CONTROL UNIT (CAN)	TM-157, "DTC Description"
	U0073	COMM BUS A OFF	TM-102, "DTC Description"
	U0100	LOST COMM (ECM A)	TM-103, "DTC Description"
	U0110	LOST COMM (DRIVE MOTOR A)	TM-104, "DTC Description"
	U0140	LOST COMM (BCM)	TM-105, "DTC Description"
	U0155	LOST COMM (IPC)	TM-106, "DTC Description"
	U0164	LOST COMM (HVAC)	TM-107, "DTC Description"
	U0293	LOST COMM (HPCM)	TM-108, "DTC Description"
	U0300	CAN COMM DATA	TM-109, "DTC Description"
	U1000	CAN COMM CIRC	TM-111, "DTC Description"
	U110E	LOST COMM (HCM)	TM-112, "DTC Description"
	U110F	LOST COMM (ECM)	TM-113, "DTC Description"
	U1110	LOST COMM (MG-INV)	TM-114, "DTC Description"
	U1117	LOST COMM (ABS)	TM-115, "DTC Description"

Priority	DTC	Items (CONSULT screen terms)	Reference
2	P0778	PC SOLENOID B	TM-140, "DTC Description"
	P0779	PC SOLENOID B	TM-142, "DTC Description"
	P0962	PC SOLENOID A	TM-160, "DTC Description"
	P0963	PC SOLENOID A	TM-162, "DTC Description"
	P0966	PC SOLENOID B	TM-166, "DTC Description"
	P0967	PC SOLENOID B	TM-168, "DTC Description"
	P1890	E-OIL PUMP RELAY	TM-171, "DTC Description"
	P1891	ELECTRIC OIL PUMP	TM-173, "DTC Description"
	P1892	ELECTRIC OIL PUMP	TM-176, "DTC Description"
	P2814	SELECT SOLENOID	TM-184, "DTC Description"
	P2815	SELECT SOLENOID	TM-186, "DTC Description"
	P281D	PRESS CONTROL SOL H	TM-188, "DTC Description"
	P281E	PRESS CONTROL SOL H	TM-190, "DTC Description"
3	P062F	EEPROM	TM-116, "DTC Description"
	P0705	T/M RANGE SENSOR A	TM-118, "DTC Description"
	P0706	T/M RANGE SENSOR A	TM-123, "DTC Description"
	P0712	FLUID TEMP SENSOR A	TM-129, "DTC Description"
	P0713	FLUID TEMP SENSOR A	TM-131, "DTC Description"
	P0715	INPUT SPEED SENSOR A	TM-133, "DTC Description"
	P0826	UP/DOWN SHIFT SWITCH	TM-144, "DTC Description"
	P0841	FLUID PRESS SEN/SW A	TM-147, "DTC Description"
	P0847	FLUID PRESS SEN/SW B	TM-149, "DTC Description"
	P0848	FLUID PRESS SEN/SW B	TM-151, "DTC Description"
	P084C	FLUID PRESS SEN/SW H	TM-153, "DTC Description"
	P084D	FLUID PRESS SEN/SW H	TM-155, "DTC Description"
	P0890	TCM	TM-158, "DTC Description"
	P2765	INPUT SPEED SENSOR B	TM-179, "DTC Description"
4	P0746	PC SOLENOID A	TM-136, "DTC Description"
	P0776	PC SOLENOID B	TM-138, "DTC Description"
	P0965	PC SOLENOID B	TM-164, "DTC Description"
	P188E	ELECTRIC OIL PUMP	TM-170, "DTC Description"
	P2813	SELECT SOLENOID	TM-182, "DTC Description"

DTC Index

INFOID:0000000014907407

NOTE:

- If multiple malfunction codes are detected at the same time, check each code according to the “DTC check priority list”. Refer to TM-69, "DTC Inspection Priority Chart".
- The ignition counter is displayed in “FFD”. Refer to TM-55, "CONSULT Function".

DTC*1, *2		Items (CONSULT screen terms)	Trip	MIL	Perma-nent DTC group*3	Hybrid system warning lamp	Reference
GST	CONSULT (TRANSMISSION)						
P062F	P062F	EEPROM	1	ON	B	ON	TM-116
P0705	P0705	T/M RANGE SENSOR A	2	ON	B	ON	TM-118
P0706	P0706	T/M RANGE SENSOR A	2	ON	B	ON	TM-123

DTC[*1, *2]		Items (CONSULT screen terms)	Trip	MIL	Permanent DTC group[*3]	Hybrid system warning lamp	Reference
GST	CONSULT (TRANSMISSION)						
P0711	P0711	FLUID TEMP SENSOR A	2	ON	A	ON	TM-126
P0712	P0712	FLUID TEMP SENSOR A	2	ON	B	ON	TM-129
P0713	P0713	FLUID TEMP SENSOR A	2	ON	B	ON	TM-131
P0715	P0715	INPUT SPEED SENSOR A	2	ON	B	ON	TM-133
P0746	P0746	PC SOLENOID A	2	ON	B	ON	TM-136
P0776	P0776	PC SOLENOID B	2	ON	B	ON	TM-138
P0778	P0778	PC SOLENOID B	2	ON	B	ON	TM-140
P0779	P0779	PC SOLENOID B	2	ON	B	ON	TM-142
—	P0826	UP/DOWN SHIFT SWITCH	1	—	—	—	TM-144
P0841	P0841	FLUID PRESS SEN/SW A	2	ON	B	ON	TM-147
P0847	P0847	FLUID PRESS SEN/SW B	2	ON	B	ON	TM-149
P0848	P0848	FLUID PRESS SEN/SW B	2	ON	B	ON	TM-151
P084C	P084C	FLUID PRESS SEN/SW H	2	ON	B	ON	TM-153
P084D	P084D	FLUID PRESS SEN/SW H	2	ON	B	ON	TM-155
P0863	P0863	CONTROL UNIT (CAN)	1	ON	B	ON	TM-157
P0890	P0890	TCM	1	ON	B	ON	TM-158
P0962	P0962	PC SOLENOID A	2	ON	B	ON	TM-160
P0963	P0963	PC SOLENOID A	2	ON	B	ON	TM-162
P0965	P0965	PC SOLENOID B	2	ON	B	ON	TM-164
P0966	P0966	PC SOLENOID B	2	ON	B	ON	TM-166
P0967	P0967	PC SOLENOID B	2	ON	B	ON	TM-168
—	P188E	ELECTRIC OIL PUMP	1	—	—	—	TM-170
—	P1890	E-OIL PUMP RELAY	1	—	—	—	TM-171
—	P1891	ELECTRIC OIL PUMP	1	—	—	—	TM-173
—	P1892	ELECTRIC OIL PUMP	1	—	—	—	TM-176
P2765	P2765	INPUT SPEED SENSOR B	2	ON	B	ON	TM-179
P2813	P2813	SELECT SOLENOID	2	ON	B	ON	TM-182
P2814	P2814	SELECT SOLENOID	2	ON	B	ON	TM-184
P2815	P2815	SELECT SOLENOID	2	ON	B	ON	TM-186
P281D	P281D	PRESS CONTROL SOL H	2	ON	B	ON	TM-188
P281E	P281E	PRESS CONTROL SOL H	2	ON	B	ON	TM-190
U0073	U0073	COMM BUS A OFF	1	ON	B	ON	TM-102
U0100	U0100	LOST COMM (ECM A)	1	ON	B	—	TM-103
U0110	U0110	LOST COMM (DRIVE MOTOR A)	1	ON	B	—	TM-104
—	U0140	LOST COMM (BCM)	1	—	—	—	TM-105
—	U0155	LOST COMM (IPC)	1	—	—	—	TM-106
—	U0164	LOST COMM (HVAC)	1	—	—	—	TM-107
U0293	U0293	LOST COMM (HPCM)	1	ON	B	—	TM-108
—	U0300	CAN COMM DATA	1	—	—	—	TM-109
—	U1000	CAN COMM CIRC	1	—	—	—	TM-111
—	U110E	LOST COMM (HCM)	1	—	—	—	TM-112
—	U110F	LOST COMM (ECM)	1	—	—	—	TM-113

DTC*1, *2		Items (CONSULT screen terms)	Trip	MIL	Permanent DTC group*3	Hybrid system warning lamp	Reference
GST	CONSULT (TRANSMISSION)						
—	U1110	LOST COMM (MG-INV)	1	—	—	—	TM-114
—	U1117	LOST COMM (ABS)	1	—	—	—	TM-115

*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-101, "Description".

Index of HPCM-detected DTC

INFOID:0000000014907408

When a DTC in the following table is detected by TCM, HPCM also detects a DTC.

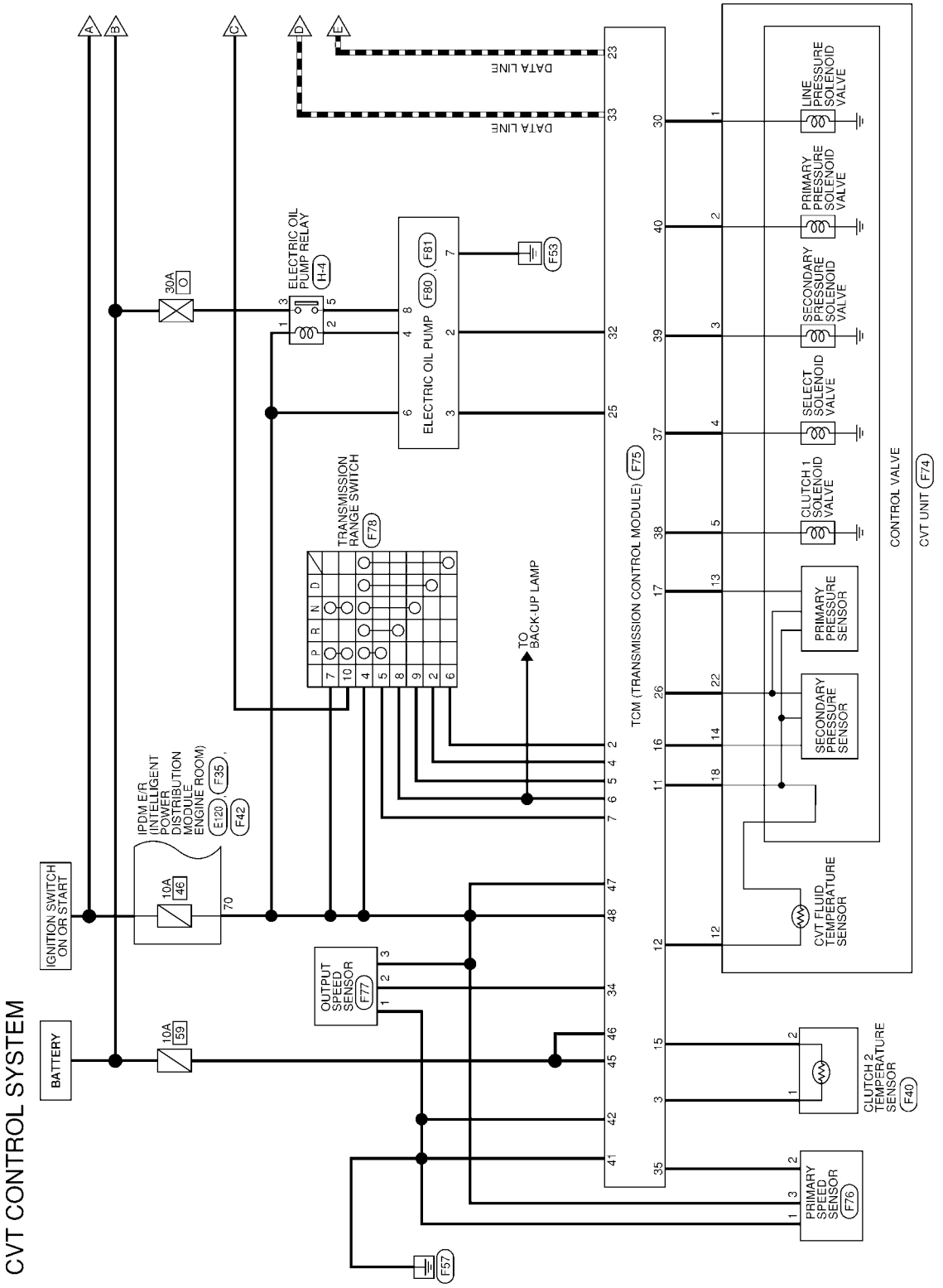
DTC	DTC of HPCM
P062F, P0705, P0706, P0712, P0713, P0715, P0776, P0778, P0779, P0841, P0841, P0847, P0848, P084C, P084D, P0965, P0966, P0967, P188E, P1890, P1891, P1892, P2765, P2813, P2815, P281E	P0701
P0746, P0863, P0890, P2813, P2814, P2815, P281E, U0073, U0293	P3185
P0962, P0963, P281D, P281E	P3186

WIRING DIAGRAM

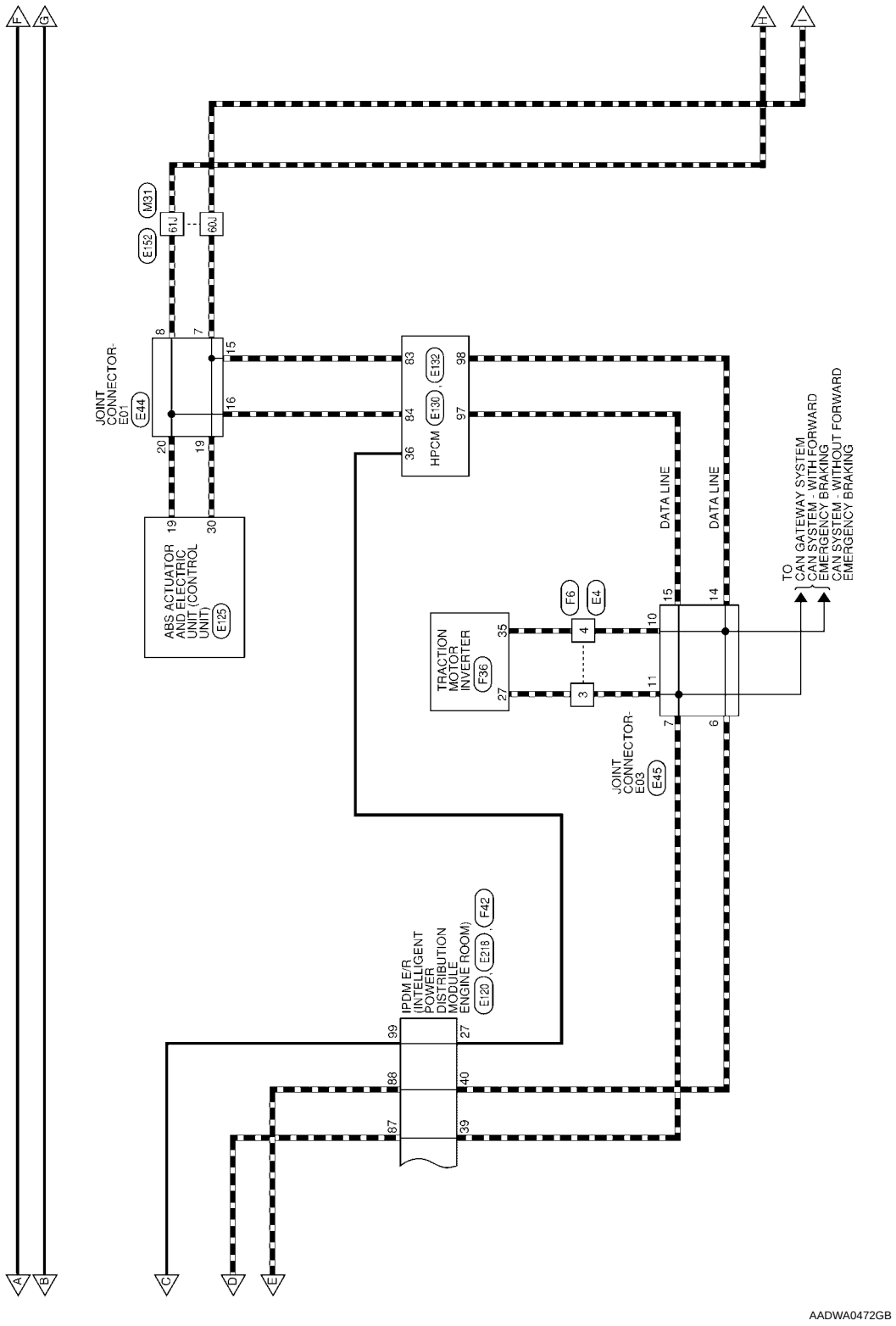
CVT CONTROL SYSTEM

Wiring diagram

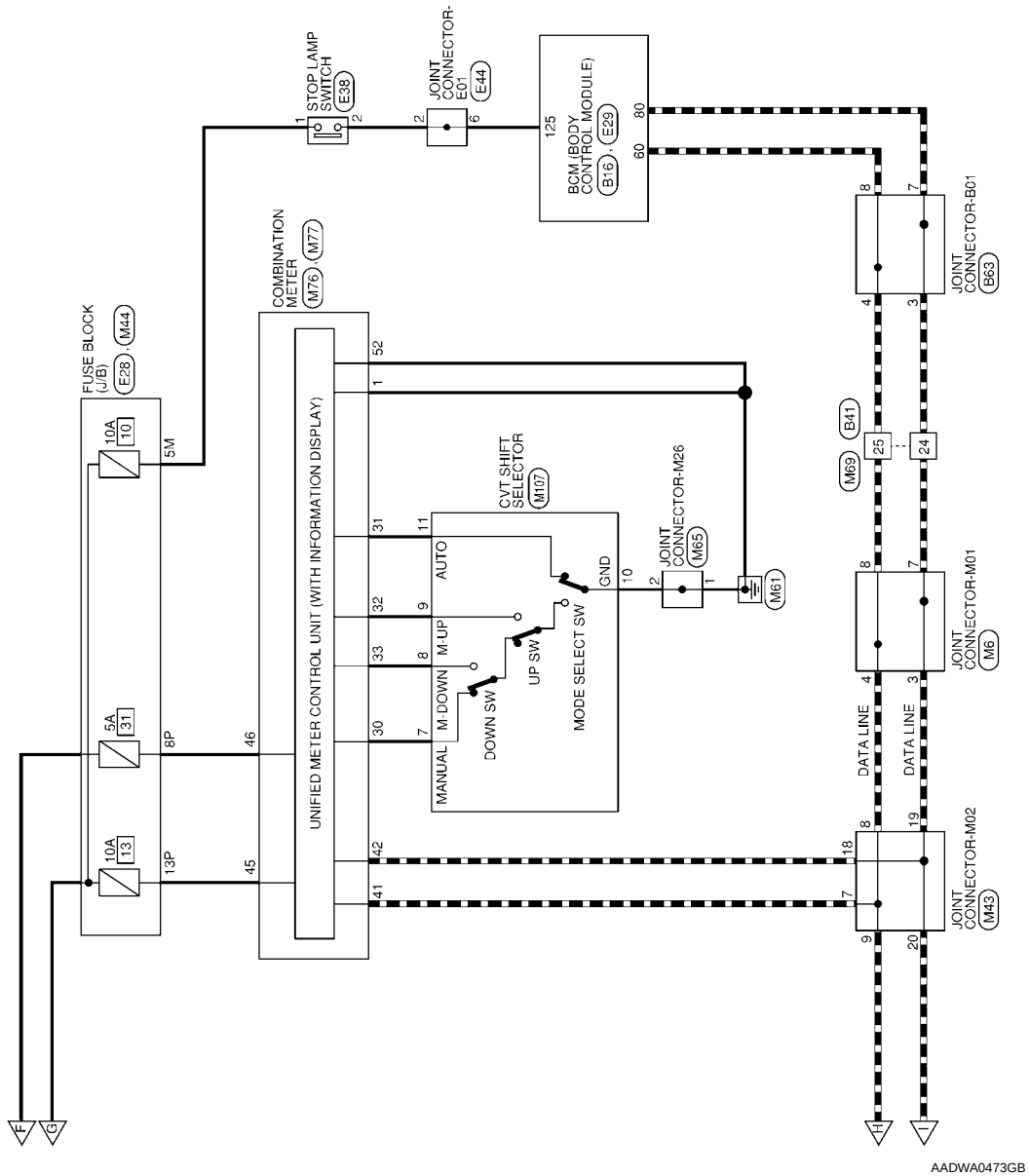
INFOID:0000000014629981



AADWA0471GB



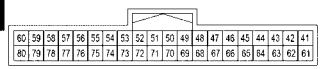
AADWA0472GB


STOP LAMP SWITCH E38
JOINT CONNECTOR-E01 E44
BCM (BODY CONTROL MODULE) B16, E29
COMBINATION METER M76, M77
FUSE BLOCK (J/B) E28, M44
UNIFIED METER CONTROL UNIT (WITH INFORMATION DISPLAY)
CVT SHIFT SELECTOR M107
AUTO
M-UP
M-DOWN
MANUAL
UP SW
DOWN SW
MODE SELECT SW
GND
JOINT CONNECTOR-M26
JOINT CONNECTOR-M65
JOINT CONNECTOR-B01 B63
JOINT CONNECTOR-M01 M6
JOINT CONNECTOR-M02 M43
DATA LINE
10A 10
5A 31
10A 13
5M
8P
13P
M61
B41
M69
AADWA0473GB

CVT CONTROL SYSTEM CONNECTORS

Connector No.	B16
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH40FG-NH
Connector Color	GREEN

H.S.

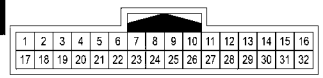


Terminal No.	Color of Wire	Signal Name
41	–	–
42	–	–
43	–	–
44	–	–
45	–	–
46	R	I SES BACKDOOR BUTTON SW
47	–	–
48	–	–
49	G	I NO TOUCH TGATE SENSOR
50	W	I RR DOOR SW
51	LG	I TGATE SW
52	R	I RL DOOR SW
53	SB	I AS DOOR2 SW
54	–	–
55	LA/G	I RR AUTOSTOP SW
56	Y	I TGATE OPENER SW
57	SB	I DR DOOR2 SW
58	–	–
59	–	–
60	L	CAN-H
61	BR	SES EXT REAR ANTENNA B
62	Y	SES INT MIDDLE ANTENNA B
63	L	SES INT MIDDLE ANTENNA A
64	G	SES EXT REAR ANTENNA A
65	–	–
66	–	–
67	–	–
68	–	–
69	–	–
70	–	–
71	–	–
72	–	–
73	–	–
74	–	–
75	–	–
76	–	–
77	V	I SHIFT LOCK RLY
78	–	–
79	LA/W	O STOP LAMP3
80	P	CAN-L

AADIA1403GB

Connector No.	B41
Connector Name	WIRE TO WIRE
Connector Type	TH32MW-NH
Connector Color	WHITE

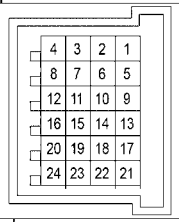
H.S.



Terminal No.	Color of Wire	Signal Name
1	SB	TO MAIN HARNESS
2	SB	TO MAIN HARNESS
3	L	TO MAIN HARNESS
4	L	TO MAIN HARNESS
5	R	TO MAIN HARNESS
6	Y	TO MAIN HARNESS
7	LG	TO MAIN HARNESS
8	BG	TO MAIN HARNESS
9	BR	TO MAIN HARNESS
10	Y	TO MAIN HARNESS
11	G	TO MAIN HARNESS
12	L	TO MAIN HARNESS
13	W	TO MAIN HARNESS
14	GR	TO MAIN HARNESS
15	Y	TO MAIN HARNESS
16	P	TO MAIN HARNESS
17	R	TO MAIN HARNESS
18	W	TO MAIN HARNESS
19	R	TO MAIN HARNESS
20	–	TO MAIN HARNESS
21	–	TO MAIN HARNESS
22	–	TO MAIN HARNESS
23	–	TO MAIN HARNESS
24	P	TO MAIN HARNESS
25	L	TO MAIN HARNESS
26	G	TO MAIN HARNESS
27	R	TO MAIN HARNESS
28	L	TO MAIN HARNESS
29	SHIELD	TO MAIN HARNESS
30	W	TO MAIN HARNESS
31	B	TO MAIN HARNESS
32	R	TO MAIN HARNESS

Connector No.	B63
Connector Name	JOINT CONNECTOR-B01
Connector Type	NH24FW-J
Connector Color	WHITE

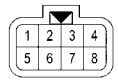
H.S.



Terminal No.	Color of Wire	Signal Name
1	L	CAN-H
2	Y	CAN-L
3	P	CAN-L
4	L	CAN-H
5	L	CAN-H
6	Y	CAN-L
7	P	CAN-L
8	L	CAN-H
9	L	CAN-H
10	Y	CAN-L
11	P	CAN-L
12	L	CAN-H
13	–	–
14	–	–
15	P	CAN-L
16	L	CAN-H
17	–	–
18	–	–
19	–	–
20	–	–
21	L	CAN-H
22	Y	CAN-L
23	P	CAN-L
24	L	CAN-H

Connector No.	E4
Connector Name	WIRE TO WIRE
Connector Type	RS08MGY-PR
Connector Color	YELLOW

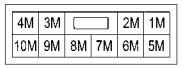
H.S.



Terminal No.	Color of Wire	Signal Name
1	Y	TO ENGINE CONTROL HARNESS
2	–	TO ENGINE CONTROL HARNESS
3	L	TO ENGINE CONTROL HARNESS
4	G	TO ENGINE CONTROL HARNESS
5	–	TO ENGINE CONTROL HARNESS
6	–	TO ENGINE CONTROL HARNESS
7	–	TO ENGINE CONTROL HARNESS
8	–	TO ENGINE CONTROL HARNESS

Connector No.	E28
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS10FW-CS
Connector Color	WHITE

H.S.



Terminal No.	Color of Wire	Signal Name
1M	–	–
2M	–	–
3M	–	–
4M	–	–
5M	V	BATTERY
6M	Y	O LIGHT POSITION REAR LH
7M	–	–
8M	–	–
9M	–	–
10M	–	–

CVT CONTROL SYSTEM CONNECTORS

Connector No.	E29
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH24FB-NH
Connector Color	BLACK

H.S.

132	131	130	129	128	127	126	125	124	123	122	121
144	143	142	141	140	139	138	137	136	135	134	133

Terminal No.	Color of Wire	Signal Name
121	–	–
122	–	–
123	–	–
124	–	–
125	LG	I BRAKE SW2
126	W	I BRAKE SW1
127	–	–
128	–	–
129	–	–
130	–	–
131	–	–
132	Y	O BUZZER (WITH I-KEY)
133	–	–
134	–	–
135	BR	O DI FR LEFT E
136	GR	O DI FR RIGHT E
137	–	–
138	–	–
139	G	O STCUT RL
140	–	–
141	–	–
142	–	–
143	–	–
144	–	–

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC
Connector Color	WHITE

H.S.

3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	V	BATTERY
2	LG	I BRAKE SW2
3	L	IGNITION
4	W	STOP LAMP SWITCH OUTPUT

Connector No.	E44
Connector Name	JOINT CONNECTOR-E01
Connector Type	NH24FG-J
Connector Color	GREEN

H.S.

4	3	2	1
8	7	6	5
12	11	10	9
16	15	14	13
20	19	18	17
24	23	22	21

Terminal No.	Color of Wire	Signal Name
1	V	SENSOR GROUND
2	LG	I BRAKE SW2
3	P	CAN-L
4	L	CAN-H
5	B	SENSOR GROUND
6	LG	I BRAKE SW2
7	P	CAN-L
8	L	CAN-H
9	W	SENSOR GROUND
10	Y	STOP LAMP SWITCH
11	P	CAN-L
12	L	CAN-H
13	–	–
14	R	STOP LAMP SWITCH
15	P	CAN-L
16	L	CAN-H

17	BR	EVAP CONTROL SYSTEM PRESSURE SENSOR
18	–	–
19	P	CAN-L
20	L	CAN-H
21	L	EVAP CONTROL SYSTEM PRESSURE SENSOR
22	–	–
23	–	–
24	–	–

Connector No.	E45
Connector Name	JOINT CONNECTOR-E03
Connector Type	NH24FW-J
Connector Color	WHITE

H.S.

4	3	2	1
8	7	6	5
12	11	10	9
16	15	14	13
20	19	18	17
24	23	22	21

Terminal No.	Color of Wire	Signal Name
1	B	GROUND
2	G	CAN-L
3	L	CAN-H
4	–	–
5	B	GROUND
6	G	HEV CAN-L
7	L	HEV CAN-H
8	–	–
9	B	GROUND
10	G	CAN-L
11	L	CAN-H
12	–	–
13	SHIELD	SHIELD
14	G	CAN-L
15	L	CAN-H
16	–	–
17	B	GROUND
18	G	HEV CAN-L
19	L	HEV CAN-H
20	–	–
21	B	GROUND
22	–	–
23	–	–
24	–	–

Connector No.	E120
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH24FGY-NH
Connector Color	GRAY

H.S.

30	29	28	27	26	25	24	23	22	21	20	19
42	41	40	39	38	37	36	35	34	33	32	31

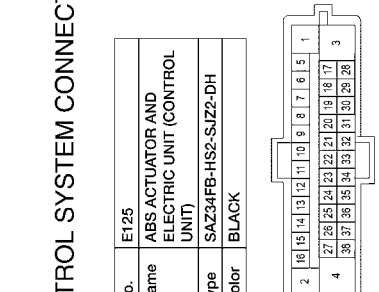
Terminal No.	Color of Wire	Signal Name
19	LG	O IGN ECM
20	–	–
21	–	–
22	P	CAN-L
23	–	–
24	L	CAN-H
25	–	–
26	–	–
27	SB	CABIN MOTOR 5
28	R	CABIN MOTOR 6
29	LG	CABIN MOTOR 7
30	Y	CABIN MOTOR 8
31	B	2ND SIGNAL GROUND
32	GR	LI PUSH SW
33	BR	I AUTO STOP WIPER
34	–	–
35	–	–
36	–	–
37	–	–
38	–	–
39	L	HEV CAN-H
40	G	HEV CAN-L
41	W	CABIN MOTOR 3
42	R	CABIN MOTOR 4

AADIA1404GB

CVT CONTROL SYSTEM CONNECTORS

Connector No.	E125
Connector Name	ABS ACTUATOR AND ELECTRIC UNIT (CONTROL UNIT)
Connector Type	SAZ34FB-HS2-SJZ2-DH
Connector Color	BLACK

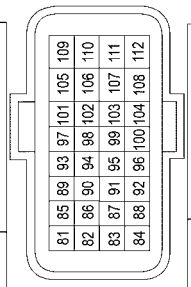
H.S.



Terminal No.	Color of Wire	Signal Name
1	BR	UB VR
2	B	GND MR
3	Y	UB MR
4	B	GND ECU
5	–	–
6	–	–
7	–	–
8	W	SIKS1 (S1)
9	BR	VDC OFF
10	G	SIKS2 (S2)
11	V	WSP FR
12	SB	WSS FR
13	BR	WSP RL
14	G	WSS RL
15	–	–
16	–	–
17	–	–
18	–	–
19	L	CAN- H
20	–	–
21	–	–
22	–	–
23	W	WSP FL
24	P	WSS FL
25	BG	WSP RR
26	LG	WSS RR
27	–	–
28	GR	WAU
29	–	–
30	P	CAN- L
31	B	VSSG (GND)
32	–	–
33	R	ASSM (VCC)
35	–	–
36	–	–
37	–	–
38	–	–

Connector No.	E130
Connector Name	HPCM
Connector Type	RH24FB-RZ8-L-RH
Connector Color	BLACK

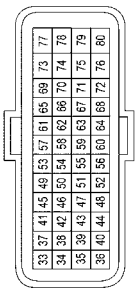
H.S.



Terminal No.	Color of Wire	Signal Name
81	R	12V BATTERY VOLTAGE
82	–	–
83	P	CAN-L
84	L	CAN-H
85	–	–
86	–	–
87	–	–
88	B	DC/DC CONVERTER VOLTAGE STABILIZER SIGNAL
89	–	–
90	–	–
91	–	–
92	–	–
93	Y	IGNITION SIGNAL
94	G	ASCD STEERING SWITCH
95	V	SENSOR GROUND
96	–	–
97	L	HEV SYSTEM CAN-H
98	G	HEV SYSTEM CAN-L
99	R	STOP LAMP SWITCH
100	W	BRAKE PEDAL POSITION SWITCH
101	–	–
102	SB	SENSOR POWER SUPPLY
103	BR	ACCELERATOR PEDAL POSITION SENSOR 2
104	LG	SENSOR GROUND
105	BR	POWER SUPPLY FOR HPCM
106	V	SENSOR POWER SUPPLY
107	–	–
108	B	HPCM GND
109	–	–
110	GR	ACCELERATOR PEDAL POSITION SENSOR 1
111	R	SENSOR GROUND
112	GR	HPCM GND

Connector No.	E132
Connector Name	HPCM
Connector Type	RH40FBR-RZ8-L-RH
Connector Color	BROWN

H.S.



Terminal No.	Color of Wire	Signal Name
33	–	–
34	–	–
35	–	–
36	SB	P/N SIGNAL
37	–	–
38	–	–
39	–	–
40	–	–
41	–	–
42	–	–
43	–	–
44	–	–
45	–	–
46	–	–
47	–	–
48	–	–
49	–	–
50	B	HPCM GROUND
51	SHIELD	SHIELD
52	–	–
53	–	–
54	B	HPCM GROUND
55	–	–
56	–	–
57	B	HPCM GROUND
58	–	–
59	–	–
60	–	–
61	–	–
62	–	–
63	LG	12V BATTERY TEMPERATURE SENSOR
64	–	–
65	–	–
66	–	–
67	–	–
68	–	–
69	B	12V BATTERY CURRENT SENSOR
70	W	SENSOR GROUND
71	–	–
72	BR	SENSER POWER SUPPLY
73	–	–
74	–	–
75	–	–
76	–	–
77	L	POWER SUPPLY FOR HPCM
78	–	–
79	GR	SHIFT LOCK SOLENOID
80	–	–

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CVT CONTROL SYSTEM CONNECTORS

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1J	–	TO MAIN HARNESS
2J	Y	TO MAIN HARNESS
3J	–	TO MAIN HARNESS
4J	–	TO MAIN HARNESS
5J	–	TO MAIN HARNESS
6J	–	TO MAIN HARNESS
7J	–	TO MAIN HARNESS
8J	–	TO MAIN HARNESS
9J	BR	TO MAIN HARNESS
10J	–	TO MAIN HARNESS
11J	–	TO MAIN HARNESS
12J	–	TO MAIN HARNESS
13J	–	TO MAIN HARNESS
14J	–	TO MAIN HARNESS
15J	–	TO MAIN HARNESS
16J	–	TO MAIN HARNESS
17J	–	TO MAIN HARNESS
18J	–	TO MAIN HARNESS
19J	–	TO MAIN HARNESS
20J	–	TO MAIN HARNESS
21J	GR	TO MAIN HARNESS
22J	SHIELD	TO MAIN HARNESS
23J	LG	TO MAIN HARNESS
24J	V	TO MAIN HARNESS
25J	L	TO MAIN HARNESS
26J	BR	TO MAIN HARNESS
27J	G	TO MAIN HARNESS
28J	R	TO MAIN HARNESS
29J	–	TO MAIN HARNESS
30J	V	TO MAIN HARNESS
31J	–	TO MAIN HARNESS
32J	–	TO MAIN HARNESS
33J	R	TO MAIN HARNESS
34J	L	TO MAIN HARNESS
35J	BG	TO MAIN HARNESS
36J	LG	TO MAIN HARNESS
37J	GR	TO MAIN HARNESS
38J	BR	TO MAIN HARNESS
39J	–	TO MAIN HARNESS
40J	–	TO MAIN HARNESS
41J	G	TO MAIN HARNESS
42J	W	TO MAIN HARNESS
43J	L	TO MAIN HARNESS
44J	B	TO MAIN HARNESS
45J	SB	TO MAIN HARNESS
46J	BR	TO MAIN HARNESS
47J	W	TO MAIN HARNESS
48J	W	TO MAIN HARNESS
49J	L	TO MAIN HARNESS
50J	P	TO MAIN HARNESS
51J	W	TO MAIN HARNESS
52J	R	TO MAIN HARNESS
53J	SB	TO MAIN HARNESS
54J	LG	TO MAIN HARNESS
55J	W	TO MAIN HARNESS
56J	BG	TO MAIN HARNESS
57J	R	TO MAIN HARNESS
58J	V	TO MAIN HARNESS
59J	BR	TO MAIN HARNESS
60J	P	TO MAIN HARNESS
61J	L	TO MAIN HARNESS
62J	P	TO MAIN HARNESS
63J	L	TO MAIN HARNESS
64J	R	TO MAIN HARNESS
65J	L	TO MAIN HARNESS
66J	BG	TO MAIN HARNESS
67J	–	TO MAIN HARNESS
68J	–	TO MAIN HARNESS
69J	G	TO MAIN HARNESS
70J	L	TO MAIN HARNESS
71J	–	TO MAIN HARNESS
72J	–	TO MAIN HARNESS
73J	–	TO MAIN HARNESS
74J	–	TO MAIN HARNESS
75J	–	TO MAIN HARNESS
76J	–	TO MAIN HARNESS
77J	–	TO MAIN HARNESS
78J	–	TO MAIN HARNESS
79J	SHIELD	TO MAIN HARNESS
80J	B	TO MAIN HARNESS
81J	W	TO MAIN HARNESS
82J	–	TO MAIN HARNESS
83J	–	TO MAIN HARNESS
84J	–	TO MAIN HARNESS
85J	–	TO MAIN HARNESS
86J	–	TO MAIN HARNESS
87J	–	TO MAIN HARNESS
88J	–	TO MAIN HARNESS
89J	–	TO MAIN HARNESS
90J	–	TO MAIN HARNESS
91J	LG	TO MAIN HARNESS
92J	L	TO MAIN HARNESS
93J	L	TO MAIN HARNESS
94J	L	TO MAIN HARNESS
95J	BR	TO MAIN HARNESS
96J	–	TO MAIN HARNESS
97J	GR	TO MAIN HARNESS
98J	P	TO MAIN HARNESS
99J	W	TO MAIN HARNESS
100J	Y	TO MAIN HARNESS

Connector No.	F6
Connector Name	WIRE TO WIRE
Connector Type	RS08FGY-PR
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	P	TO ENGINE ROOM HARNESS
2	–	TO ENGINE ROOM HARNESS
3	L	TO ENGINE ROOM HARNESS
4	G	TO ENGINE ROOM HARNESS
5	–	TO ENGINE ROOM HARNESS
6	–	TO ENGINE ROOM HARNESS
7	–	TO ENGINE ROOM HARNESS
8	–	TO ENGINE ROOM HARNESS

Connector No.	F35
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
65	–	–
66	W	O ACTUATOR1 1 (3FB1)
67	V	LI ECM ACT5 DRIVER
68	–	–
69	–	–
70	R	O IGN AT LPG
71	Y	O IGN REVERSE SW AC VALVE
72	LG	O ACTUATOR5 (3FBA)
73	G	O ACTUATOR1 2 (3FB)
74	–	–
75	R	O ACTUATOR3 (3FB3)
76	P	LI FUEL PUMP DRIVER
77	–	–
78	BR	O ACTUATOR2 (3FB2)
79	G	LI LIGHT REVERSE SW
80	–	–

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CVT CONTROL SYSTEM CONNECTORS

Connector No.	F36
Connector Name	TRACTION MOTOR INVERTER
Connector Type	SAZ36FB-HS4-1V-LH
Connector Color	BLACK

H.S.



Terminal No.	Color of Wire	Signal Name
1	–	–
2	V	TRACTION MOTOR RESOLVER SIGNAL S1
3	–	–
4	G	TRACTION MOTOR RESOLVER SIGNAL R1
5	–	–
6	–	–
7	R	POWER SUPPLY (IGN)
8	–	–
9	P	CONNECTION DETECTION (+)
10	LG	TRACTION MOTOR RESOLVER SIGNAL S3
11	–	–
12	Y	TRACTION MOTOR RESOLVER SIGNAL R2
13	–	–
14	–	–
15	–	–
16	–	–
17	W	CONNECTION DETECTION (-)
18	–	–
19	–	–
20	W	TRACTION MOTOR RESOLVER SIGNAL S2
21	–	–
22	–	–
23	–	–
24	–	–
25	–	–
26	–	–
27	L	HEV SYSTEM CAN-H
28	B	TRACTION MOTOR RESOLVER SIGNAL S4
29	–	–
30	–	–
31	–	–
32	–	–
33	–	–
34	–	–
35	G	HEV SYSTEM CAN-L
36	–	–
37	B	GND
38	P	POWER SUPPLY (BAT)
39	B	GND
40	P	POWER SUPPLY (BAT)

Connector No.	F40
Connector Name	CLUTCH 2 TEMPERATURE SENSOR
Connector Type	RH02FB
Connector Color	BLACK

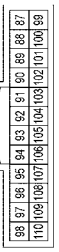
H.S.



Terminal No.	Color of Wire	Signal Name
1	LG	CLUTCH 2 TEMP SENSOR
2	B	SENSOR GND

Connector No.	F42
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Type	TH24FB-NH
Connector Color	BLACK

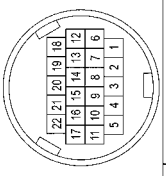
H.S.



Terminal No.	Color of Wire	Signal Name
87	L	HEV CAN-H
88	G	HEV CAN-L
89	W	MOTOR CABIN 3
90	R	MOTOR CABIN 4
91	–	–
92	BG	LI NP SW
93	P	LI ECM DRIVER
94	–	–
95	–	–
96	–	–
97	–	–
98	–	–
99	BG	MOTOR CABIN 5
100	GR	MOTOR CABIN 6
101	LG	MOTOR CABIN 7
102	Y	MOTOR CABIN 8
103	W	HOOD SW2
104	–	–
105	–	–
106	BR	LO FAN RELAY2(PWM)
107	–	–
108	–	–
109	–	–
110	–	–

Connector No.	F74
Connector Name	CVT UNIT
Connector Type	RK22FGY
Connector Color	GRAY

H.S.



Terminal No.	Color of Wire	Signal Name
1	BR	LINEAR SOL 1
2	V	LINEAR SOL 2
3	SB	LINEAR SOL 3
4	BG	LINEAR SOL 4
5	GR	LINEAR SOL 5
6	G	R1
7	B	S4
8	W	S2
9	LG	S3
10	V	S1
11	Y	R2
12	LG	ATF TEMP SENSOR
13	L	OIL PRES SENS (PRI)
14	R	OIL PRES SENS (SEC)
15	–	–
16	–	–
17	–	–
18	W	SENS GND
19	–	–
20	–	–
21	–	–
22	P	SENS SPLY +5 (5V)

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CVT CONTROL SYSTEM CONNECTORS

Connector No.	F75
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Type	RH40FB-RZ8-L-LH
Connector Color	BLACK

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	–	–
2	SB	L RANGE SW
3	LG	CLUTCH 2 TEMP SENSOR
4	Y	D RANGE SW
5	R	N RANGE SW
6	G	R RANGE SW
7	V	P RANGE SW
8	–	–
9	–	–
10	–	–
11	W	SENSOR GND
12	LG	CVT FLUID TEMP SENS
13	–	–
14	–	–
15	B	SENSOR GND
16	R	SEC PRESS SENS
17	L	PRI PRESS SENS
18	–	–
19	–	–
20	–	–
21	–	–
22	–	–
23	G	HEV CAN–L
24	LG	INPUT SPEED SENS
25	W	EOP SIG
26	P	SENS PWR SUPPLY
27	–	–
28	–	–
29	–	–
30	BR	LINE PRESS SOL VALVE
31	–	–
32	P	EOP STATE
33	L	HEV CAN–H
34	R	OUTPUT SPEED SENS
35	LG	PRI SPEED SENS
36	–	–
37	BG	SELECT SOL VALVE
38	GR	TCC SOL VALVE
39	SB	SEC PRESS SOL VALVE
40	V	PRI PRESS SOL VALVE
41	B	GND
42	B	GND
43	–	–
44	–	–
45	LG	BATT
46	LG	BATT
47	R	VIGN
48	R	VIGN

Connector No.	F76
Connector Name	PRIMARY SPEED SENSOR
Connector Type	RK03FB
Connector Color	BLACK

H.S.

3	2	1

Terminal No.	Color of Wire	Signal Name
1	B	GROUND
2	LG	PRI SPEED SENS
3	Y	VIGN

Connector No.	F77
Connector Name	OUTPUT SPEED SENSOR
Connector Type	RK03FB
Connector Color	BLACK

H.S.

3	2	1

Terminal No.	Color of Wire	Signal Name
1	LG	GROUND
2	R	OUTPUT SPEED SENS
3	Y	VIGN

Connector No.	F78
Connector Name	TRANSMISSION RANGE SWITCH
Connector Type	YDX06FB-HS4
Connector Color	BLACK

H.S.

6	5	4	3	2	1
10	9	8	7		

Terminal No.	Color of Wire	Signal Name
1	–	–
2	Y	D RANGE SW
3	–	–
4	R	VIGN
5	V	P RANGE SW
6	SB	L RANGE SW
7	Y	VIGN
8	G	R RANGE SW
9	R	N RANGE SW
10	BG	LI NP SW

Connector No.	F80
Connector Name	ELECTRIC OIL PUMP
Connector Type	RH06FB-1V
Connector Color	BLACK

H.S.

3	2	1
6	5	4

Terminal No.	Color of Wire	Signal Name
1	–	–
2	P	EOP STATE
3	W	EOP SIG
4	BG	P RLY
5	–	–
6	R	START IG

Connector No.	F81
Connector Name	ELECTRIC OIL PUMP
Connector Type	SJZ02FB
Connector Color	BLACK

H.S.

8	7

Terminal No.	Color of Wire	Signal Name
7	B	+BEOP
8	R	P GND

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CVT CONTROL SYSTEM CONNECTORS

Connector No.	M6
Connector Name	JOINT CONNECTOR-M01
Connector Type	NH24FGY-J
Connector Color	GRAY

H.S.

Terminal No.	Color of Wire	Signal Name
1	GR	IGNITION
2	R	IGNITION
3	P	CAN-L
4	L	CAN-H
5	–	–
6	–	–
7	P	CAN-L
8	L	CAN-H
9	GR	IGNITION
10	R	IGNITION
11	P	CAN-L
12	L	CAN-H
13	P	CAN-L
14	L	CAN-H
15	P	CAN-L
16	L	CAN-H
17	P	CAN-L
18	L	CAN-H
19	P	CAN-L
20	L	CAN-H
21	P	CAN-L
22	L	CAN-H
23	P	CAN-L
24	L	CAN-H

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1J	–	TO ENGINE ROOM HARNESS
2J	R	TO ENGINE ROOM HARNESS
3J	–	TO ENGINE ROOM HARNESS
4J	–	TO ENGINE ROOM HARNESS
5J	–	TO ENGINE ROOM HARNESS
6J	–	TO ENGINE ROOM HARNESS
7J	–	TO ENGINE ROOM HARNESS
8J	–	TO ENGINE ROOM HARNESS
9J	W	TO ENGINE ROOM HARNESS
10J	–	TO ENGINE ROOM HARNESS
11J	–	TO ENGINE ROOM HARNESS
12J	–	TO ENGINE ROOM HARNESS
13J	–	TO ENGINE ROOM HARNESS
14J	–	TO ENGINE ROOM HARNESS
15J	–	TO ENGINE ROOM HARNESS
16J	–	TO ENGINE ROOM HARNESS
17J	–	TO ENGINE ROOM HARNESS
18J	–	TO ENGINE ROOM HARNESS
19J	–	TO ENGINE ROOM HARNESS
20J	–	TO ENGINE ROOM HARNESS
21J	LA/L	TO ENGINE ROOM HARNESS
22J	SHIELD	TO ENGINE ROOM HARNESS
23J	LG	TO ENGINE ROOM HARNESS
24J	V	TO ENGINE ROOM HARNESS
25J	L	TO ENGINE ROOM HARNESS
26J	BR	TO ENGINE ROOM HARNESS
27J	G	TO ENGINE ROOM HARNESS
28J	Y	TO ENGINE ROOM HARNESS
29J	L	TO ENGINE ROOM HARNESS
30J	V	TO ENGINE ROOM HARNESS
31J	–	TO ENGINE ROOM HARNESS
32J	–	TO ENGINE ROOM HARNESS
33J	R	TO ENGINE ROOM HARNESS
33J	Y	TO ENGINE ROOM HARNESS - (WITH DRIVER ASSISTNACE SYSTEM)
34J	L	TO ENGINE ROOM HARNESS
35J	BG	TO ENGINE ROOM HARNESS
36J	GR	TO ENGINE ROOM HARNESS
37J	Y	TO ENGINE ROOM HARNESS
38J	LA/BR	TO ENGINE ROOM HARNESS
39J	–	TO ENGINE ROOM HARNESS
40J	–	TO ENGINE ROOM HARNESS
41J	LA/R	TO ENGINE ROOM HARNESS
42J	W	TO ENGINE ROOM HARNESS
43J	L	TO ENGINE ROOM HARNESS
44J	B	TO ENGINE ROOM HARNESS
45J	SB	TO ENGINE ROOM HARNESS
46J	BR	TO ENGINE ROOM HARNESS
47J	W	TO ENGINE ROOM HARNESS
48J	R	TO ENGINE ROOM HARNESS
49J	SB	TO ENGINE ROOM HARNESS
50J	GR	TO ENGINE ROOM HARNESS
51J	W	TO ENGINE ROOM HARNESS
52J	R	TO ENGINE ROOM HARNESS
53J	BR	TO ENGINE ROOM HARNESS
54J	LG	TO ENGINE ROOM HARNESS
55J	LA/Y	TO ENGINE ROOM HARNESS
56J	LA/V	TO ENGINE ROOM HARNESS
57J	LA/R	TO ENGINE ROOM HARNESS
58J	W	TO ENGINE ROOM HARNESS
59J	BR	TO ENGINE ROOM HARNESS
60J	P	TO ENGINE ROOM HARNESS
61J	L	TO ENGINE ROOM HARNESS
62J	R	TO ENGINE ROOM HARNESS
63J	L	TO ENGINE ROOM HARNESS
64J	R	TO ENGINE ROOM HARNESS
65J	L	TO ENGINE ROOM HARNESS
66J	BG	TO ENGINE ROOM HARNESS
67J	–	TO ENGINE ROOM HARNESS
68J	–	TO ENGINE ROOM HARNESS
69J	G	TO ENGINE ROOM HARNESS
70J	L	TO ENGINE ROOM HARNESS
71J	–	TO ENGINE ROOM HARNESS
72J	–	TO ENGINE ROOM HARNESS
73J	–	TO ENGINE ROOM HARNESS
74J	–	TO ENGINE ROOM HARNESS
75J	–	TO ENGINE ROOM HARNESS
76J	–	TO ENGINE ROOM HARNESS
77J	–	TO ENGINE ROOM HARNESS
78J	–	TO ENGINE ROOM HARNESS
79J	SHIELD	TO ENGINE ROOM HARNESS
80J	B	TO ENGINE ROOM HARNESS
81J	W	TO ENGINE ROOM HARNESS
82J	–	TO ENGINE ROOM HARNESS
83J	–	TO ENGINE ROOM HARNESS
84J	–	TO ENGINE ROOM HARNESS
85J	–	TO ENGINE ROOM HARNESS
86J	–	TO ENGINE ROOM HARNESS
87J	–	TO ENGINE ROOM HARNESS
88J	–	TO ENGINE ROOM HARNESS
89J	–	TO ENGINE ROOM HARNESS
90J	–	TO ENGINE ROOM HARNESS
91J	–	TO ENGINE ROOM HARNESS
92J	Y	TO ENGINE ROOM HARNESS
93J	G	TO ENGINE ROOM HARNESS
94J	L	TO ENGINE ROOM HARNESS
95J	P	TO ENGINE ROOM HARNESS
96J	–	TO ENGINE ROOM HARNESS
97J	SB	TO ENGINE ROOM HARNESS
98J	P	TO ENGINE ROOM HARNESS
99J	LA/R	TO ENGINE ROOM HARNESS
100J	R	TO ENGINE ROOM HARNESS

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CVT CONTROL SYSTEM CONNECTORS

Connector No.	M43
Connector Name	JOINT CONNECTOR-M02
Connector Type	NH20FG-DC
Connector Color	GREEN

H.S.

9	8	7	6	5	4	3	2	1
20	19	18	17	16	15	14	13	12	11	10

Terminal No.	Color of Wire	Signal Name
1	–	–
2	–	–
3	L	CAN-H
4	L	CAN-H
5	L	CAN-H
6	–	–
7	L	CAN-H
8	L	CAN-H
9	L	CAN-H
10	–	–
11	–	–
12	–	–
13	–	–
14	G	CAN-L
15	G	CAN-L
16	G	CAN-L
17	–	–
18	P	CAN-L
19	P	CAN-L
20	P	CAN-L

4P	LG	REAR WINDOW DEFOGGER RELAY OUTPUT
5P	GR	REAR WINDOW DEFOGGER RELAY OUTPUT
6P	LA/R	REAR WINDOW DEFOGGER RELAY CONTROL
7P	Y	IGNITION
8P	V	IGNITION
9P	L	BATTERY
10P	LG	IGNITION
11P	–	–
12P	–	–
13P	G	BATTERY
14P	–	–
15P	L	BATTERY
16P	LA/W	FRONT BLOWER MOTOR RELAY CONTROL

Connector No.	M65
Connector Name	JOINT CONNECTOR-M26
Connector Type	SAC08JW
Connector Color	WHITE

H.S.

8	7	6	5	4	3	2	1

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

Connector No.	M69
Connector Name	WIRE TO WIRE
Connector Type	TH32FW-NH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	SB	TO BODY HARNESS
2	BR	TO BODY HARNESS
3	L	TO BODY HARNESS
4	BR	TO BODY HARNESS
5	R	TO BODY HARNESS
6	Y	TO BODY HARNESS
7	LG	TO BODY HARNESS
8	BG	TO BODY HARNESS
9	BR	TO BODY HARNESS
10	Y	TO BODY HARNESS
11	G	TO BODY HARNESS
12	L	TO BODY HARNESS
13	W	TO BODY HARNESS
14	GR	TO BODY HARNESS
15	Y	TO BODY HARNESS
16	P	TO BODY HARNESS
17	R	TO BODY HARNESS
18	W	TO BODY HARNESS
19	R	TO BODY HARNESS
20	–	TO BODY HARNESS
21	–	TO BODY HARNESS
22	–	TO BODY HARNESS
23	–	TO BODY HARNESS
24	P	TO BODY HARNESS
25	L	TO BODY HARNESS
26	BR	TO BODY HARNESS
27	R	TO BODY HARNESS
28	L	TO BODY HARNESS
29	SHIELD	TO BODY HARNESS
30	W	TO BODY HARNESS
31	B	TO BODY HARNESS
32	R	TO BODY HARNESS

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1P	R	IGNITION
2P	G	IGNITION
3P	Y	IGNITION RELAY CONTROL

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CVT CONTROL SYSTEM CONNECTORS

Connector No.	M76
Connector Name	COMBINATION METER
Connector Type	TH40FW-NH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	B	GND
2	–	–
3	–	–
4	–	–
5	–	–
6	–	–
7	BG	SECURITY
8	–	–
9	GR	ECO MODE SW
10	–	–
11	–	–
12	–	–
13	–	–
14	–	–
15	L	OUTSIDE TEMP SENSOR
16	–	–
17	BG	SATELLITE SW GND
18	SB	TRIP RESET SW
19	–	–
20	Y	OUTSIDE TEMP GND
21	L	GND (STRG SW GND)
22	Y	STRG SW A
23	GR	STRG SW B
24	BR	WASHER SW
25	V	BRAKE OIL SW
26	G	PKB SW
27	–	–
28	Y	DR BELT SW
29	R	SPORT MODE SW
30	LG	M RANGE
31	SB	NOT M RANGE
32	BG	AT SHIFT UP
33	BR	AT SHIFT DOWN
34	–	–
35	–	–
36	GR	ILL UP SW
37	V	ILL DOWN SW
38	G	8P/R OUTPUT
39	W	2P/R OUTPUT
40	–	–

Connector No.	M77
Connector Name	COMBINATION METER
Connector Type	TH12FW-NH
Connector Color	WHITE

H.S.

41	42	43	44	45	46
47	48	49	50	51	52

Terminal No.	Color of Wire	Signal Name
41	L	CAN-H
42	P	CAN-L
43	R	ILL CONT OUT
44	LA/B	FUEL SENSOR GND
45	G	BATTERY
46	V	IGNITION
47	SB	M-CAN H
48	LG	M-CAN L
49	–	–
50	–	–
51	LA/L	FUEL SENSOR
52	B	G1

Connector No.	M107
Connector Name	CVT SHIFT SELECTOR
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

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

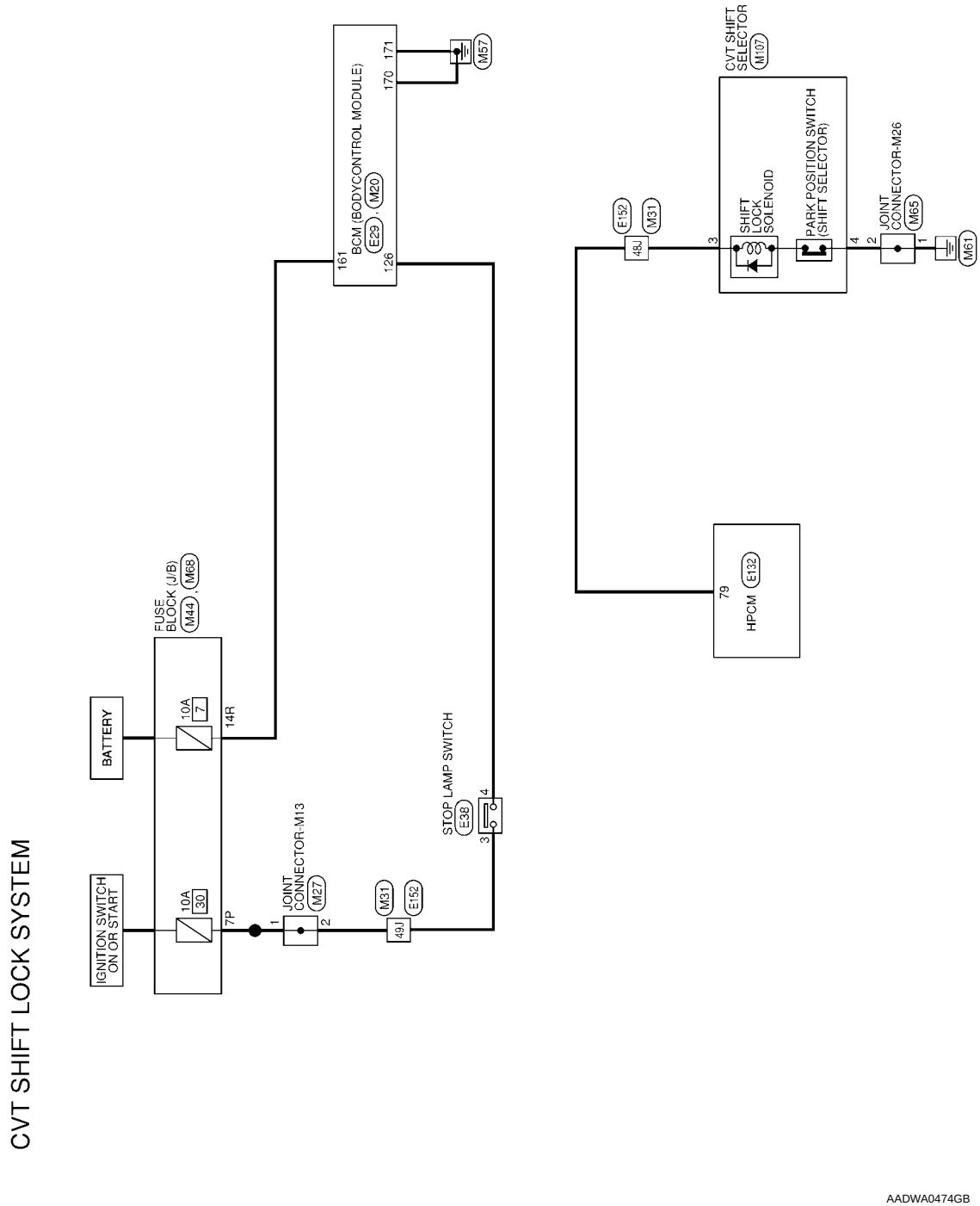
Terminal No.	Color of Wire	Signal Name
1	P	O/D OFF SW
2	B	GROUND
3	R	–
4	B	GROUND
5	G	ILL CONT OUT
6	B	GROUND
7	LG	M RANGE
8	BR	AT SHIFT DOWN
9	BG	AT SHIFT UP
10	B	GROUND
11	SB	NOT M RANGE
12	L	O PWR ATDVC
13	G	I AT LOCKED IN PARK SW
14	–	–
15	–	–
16	–	–

AADIA1411GB

CVT SHIFT LOCK SYSTEM

Wiring diagram

INFOID:0000000014629982



AADWA0474GB

CVT SHIFT LOCK SYSTEM CONNECTORS

Connector No.	E29
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	TH24FB-NH
Connector Color	BLACK

H.S.

132	131	130	129	128	127	126	125	124	123	122	121
144	143	142	141	140	139	138	137	136	135	134	133

Terminal No.	Color of Wire	Signal Name
121	–	–
122	–	–
123	–	–
124	–	–
125	LG	BRAKE SW2
126	W	BRAKE SW1
127	–	–
128	–	–
129	–	–
130	–	–
131	–	–
132	Y	BUZZER (WITH I-KEY)
133	–	–
134	–	–
135	BR	DI FR LEFT E
136	GR	DI FR RIGHT E
137	–	–
138	–	–
139	G	STCUT RL
140	–	–
141	–	–
142	–	–
143	–	–
144	–	–

Connector No.	E38
Connector Name	STOP LAMP SWITCH
Connector Type	M04FW-LC
Connector Color	WHITE

H.S.

3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	V	BATTERY
2	LG	I BRAKE SW2
3	L	IGNITION
4	W	STOP LAMP SWITCH OUTPUT

Connector No.	E132
Connector Name	HPCM
Connector Type	RH40FBR-RZ8-L-RH
Connector Color	BROWN

H.S.

33	37	41	45	49	53	57	61	65	69	73	77
34	38	42	46	50	54	58	62	66	70	74	78
35	39	43	47	51	55	59	63	67	71	75	79
36	40	44	48	52	56	60	64	68	72	76	80

Terminal No.	Color of Wire	Signal Name
33	–	–
34	–	–
35	–	–
36	SB	P/N SIGNAL
37	–	–
38	–	–
39	–	–
40	–	–
41	–	–
42	–	–
43	–	–
44	–	–
45	–	–
46	–	–
47	–	–
48	–	–
49	–	–
50	B	HPCM GROUND
51	SHIELD	SHIELD
52	–	–
53	–	–
54	B	HPCM GROUND
55	–	–
56	–	–
57	B	HPCM GROUND
58	–	–
59	–	–
60	–	–
61	–	–
62	–	–
63	LG	12V BATTERY TEMPERATURE SENSOR
64	–	–
65	–	–
66	–	–
67	–	–
68	–	–
69	V	12V BATTERY CURRENT SENSOR
70	W	SENSOR GROUND
71	–	–
72	BR	SENSER POWER SUPPLY
73	–	–
74	–	–
75	–	–
76	–	–
77	L	POWER SUPPLY FOR HPCM
78	–	–
79	GR	SHIFT LOCK SOLENOID
80	–	–

AADIA1412GB

CVT SHIFT LOCK SYSTEM CONNECTORS

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Type	TH80FW-CS16-TM4
Connector Color	WHITE

H.S.

Terminal No.	Color of Wire	Signal Name
1J	–	TO MAIN HARNESS
2J	Y	TO MAIN HARNESS
3J	–	TO MAIN HARNESS
4J	–	TO MAIN HARNESS
5J	–	TO MAIN HARNESS
6J	–	TO MAIN HARNESS
7J	–	TO MAIN HARNESS
8J	–	TO MAIN HARNESS
9J	BR	TO MAIN HARNESS
10J	–	TO MAIN HARNESS
11J	–	TO MAIN HARNESS
12J	–	TO MAIN HARNESS
13J	–	TO MAIN HARNESS
14J	–	TO MAIN HARNESS
15J	–	TO MAIN HARNESS
16J	–	TO MAIN HARNESS
17J	–	TO MAIN HARNESS
18J	–	TO MAIN HARNESS
19J	–	TO MAIN HARNESS
20J	–	TO MAIN HARNESS
21J	GR	TO MAIN HARNESS
22J	SHIELD	TO MAIN HARNESS
23J	LG	TO MAIN HARNESS
24J	V	TO MAIN HARNESS
25J	L	TO MAIN HARNESS
26J	BR	TO MAIN HARNESS
27J	G	TO MAIN HARNESS
28J	R	TO MAIN HARNESS
29J	L	TO MAIN HARNESS
30J	V	TO MAIN HARNESS
31J	–	TO MAIN HARNESS
32J	–	TO MAIN HARNESS
33J	R	TO MAIN HARNESS
34J	L	TO MAIN HARNESS
35J	BG	TO MAIN HARNESS
36J	LG	TO MAIN HARNESS
37J	GR	TO MAIN HARNESS
38J	BR	TO MAIN HARNESS
39J	–	TO MAIN HARNESS
40J	–	TO MAIN HARNESS
41J	G	TO MAIN HARNESS
42J	W	TO MAIN HARNESS
43J	L	TO MAIN HARNESS
44J	B	TO MAIN HARNESS
45J	SB	TO MAIN HARNESS
46J	BR	TO MAIN HARNESS
47J	W	TO MAIN HARNESS
48J	W	TO MAIN HARNESS
49J	L	TO MAIN HARNESS
50J	P	TO MAIN HARNESS
51J	W	TO MAIN HARNESS
52J	R	TO MAIN HARNESS
53J	SB	TO MAIN HARNESS
54J	LG	TO MAIN HARNESS
55J	W	TO MAIN HARNESS
56J	BG	TO MAIN HARNESS
57J	R	TO MAIN HARNESS
58J	V	TO MAIN HARNESS
59J	BR	TO MAIN HARNESS
60J	P	TO MAIN HARNESS
61J	L	TO MAIN HARNESS
62J	P	TO MAIN HARNESS
63J	L	TO MAIN HARNESS
64J	R	TO MAIN HARNESS
65J	L	TO MAIN HARNESS
66J	BG	TO MAIN HARNESS
67J	–	TO MAIN HARNESS
68J	–	TO MAIN HARNESS
69J	G	TO MAIN HARNESS
70J	L	TO MAIN HARNESS
71J	–	TO MAIN HARNESS
72J	–	TO MAIN HARNESS
73J	–	TO MAIN HARNESS
74J	–	TO MAIN HARNESS
75J	–	TO MAIN HARNESS
76J	–	TO MAIN HARNESS
77J	–	TO MAIN HARNESS
78J	–	TO MAIN HARNESS
79J	SHIELD	TO MAIN HARNESS
80J	B	TO MAIN HARNESS
81J	W	TO MAIN HARNESS
82J	–	TO MAIN HARNESS
83J	–	TO MAIN HARNESS
84J	–	TO MAIN HARNESS
85J	–	TO MAIN HARNESS
86J	–	TO MAIN HARNESS
87J	–	TO MAIN HARNESS
88J	–	TO MAIN HARNESS
89J	–	TO MAIN HARNESS
90J	–	TO MAIN HARNESS
91J	–	TO MAIN HARNESS
92J	LG	TO MAIN HARNESS
93J	L	TO MAIN HARNESS
94J	L	TO MAIN HARNESS
95J	BR	TO MAIN HARNESS
96J	–	TO MAIN HARNESS
97J	GR	TO MAIN HARNESS
98J	P	TO MAIN HARNESS
99J	W	TO MAIN HARNESS
100J	Y	TO MAIN HARNESS

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Type	NS16FBR-CS
Connector Color	BROWN

H.S.

167	166	165	164									163	162	161		
176	175	174	173	172	171	170	169	168								

Terminal No.	Color of Wire	Signal Name
161	W	PWR ECU
162	SB	PWM ROOMLAMP 1
163	L	AS LOCK OR UNLOCK D
164	–	–
165	V	DR OR FR LOCK D
166	–	–
167	LA/V	PWR DOORLOCK1
168	BG	PWR FLASHERS
169	GR	PWR STOP LAMP
170	B	GND1
171	B	GND2
172	G	FR OR DR UNLOCK D
173	–	–
174	–	–
175	R	PWR DOORLOCK2
176	LG	PWR WIPER

Connector No.	M27
Connector Name	JOINT CONNECTOR-M13
Connector Type	SAC08JW
Connector Color	WHITE

H.S.

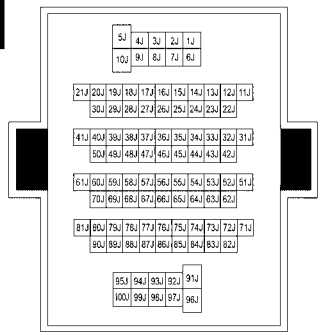
Terminal No.	Color of Wire	Signal Name
1	SB	IGNITION
2	SB	IGNITION
3	SB	IGNITION
4	Y	IGNITION
5	SB	IGNITION
6	SB	IGNITION
7	SB	IGNITION
8	SB	IGNITION

AADIA1413GB

CVT SHIFT LOCK SYSTEM CONNECTORS

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Type	TH80MW-CS16-TM4
Connector Color	WHITE

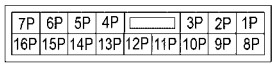
H.S.



Terminal No.	Color of Wire	Signal Name
1J	–	TO ENGINE ROOM HARNESS
2J	R	TO ENGINE ROOM HARNESS
3J	–	TO ENGINE ROOM HARNESS
4J	–	TO ENGINE ROOM HARNESS
5J	–	TO ENGINE ROOM HARNESS
6J	–	TO ENGINE ROOM HARNESS
7J	–	TO ENGINE ROOM HARNESS
8J	–	TO ENGINE ROOM HARNESS
9J	W	TO ENGINE ROOM HARNESS
10J	–	TO ENGINE ROOM HARNESS
11J	–	TO ENGINE ROOM HARNESS
12J	–	TO ENGINE ROOM HARNESS
13J	–	TO ENGINE ROOM HARNESS
14J	–	TO ENGINE ROOM HARNESS
15J	–	TO ENGINE ROOM HARNESS
16J	–	TO ENGINE ROOM HARNESS
17J	–	TO ENGINE ROOM HARNESS
18J	–	TO ENGINE ROOM HARNESS
19J	–	TO ENGINE ROOM HARNESS
20J	–	TO ENGINE ROOM HARNESS
21J	LA/L	TO ENGINE ROOM HARNESS
22J	SHIELD	TO ENGINE ROOM HARNESS
23J	LG	TO ENGINE ROOM HARNESS
24J	V	TO ENGINE ROOM HARNESS
25J	L	TO ENGINE ROOM HARNESS
26J	BR	TO ENGINE ROOM HARNESS
27J	G	TO ENGINE ROOM HARNESS
28J	Y	TO ENGINE ROOM HARNESS
29J	L	TO ENGINE ROOM HARNESS
30J	V	TO ENGINE ROOM HARNESS
31J	–	TO ENGINE ROOM HARNESS
32J	–	TO ENGINE ROOM HARNESS
33J	R	TO ENGINE ROOM HARNESS
33J	Y	TO ENGINE ROOM HARNESS - (WITH DRIVER ASSISTNACE SYSTEM)
34J	L	TO ENGINE ROOM HARNESS
35J	BG	TO ENGINE ROOM HARNESS
36J	GR	TO ENGINE ROOM HARNESS
37J	Y	TO ENGINE ROOM HARNESS
38J	LA/BR	TO ENGINE ROOM HARNESS
39J	–	TO ENGINE ROOM HARNESS
40J	–	TO ENGINE ROOM HARNESS
41J	LA/R	TO ENGINE ROOM HARNESS
42J	W	TO ENGINE ROOM HARNESS
43J	L	TO ENGINE ROOM HARNESS
44J	B	TO ENGINE ROOM HARNESS
45J	SB	TO ENGINE ROOM HARNESS
46J	BR	TO ENGINE ROOM HARNESS
47J	W	TO ENGINE ROOM HARNESS
48J	R	TO ENGINE ROOM HARNESS
49J	SB	TO ENGINE ROOM HARNESS
50J	GR	TO ENGINE ROOM HARNESS
51J	W	TO ENGINE ROOM HARNESS
52J	R	TO ENGINE ROOM HARNESS
53J	BR	TO ENGINE ROOM HARNESS
54J	LG	TO ENGINE ROOM HARNESS
55J	LA/Y	TO ENGINE ROOM HARNESS
56J	LA/V	TO ENGINE ROOM HARNESS
57J	LA/R	TO ENGINE ROOM HARNESS
58J	W	TO ENGINE ROOM HARNESS
59J	BR	TO ENGINE ROOM HARNESS
60J	P	TO ENGINE ROOM HARNESS
61J	L	TO ENGINE ROOM HARNESS
62J	R	TO ENGINE ROOM HARNESS
63J	L	TO ENGINE ROOM HARNESS
64J	R	TO ENGINE ROOM HARNESS
65J	L	TO ENGINE ROOM HARNESS
66J	BG	TO ENGINE ROOM HARNESS
67J	–	TO ENGINE ROOM HARNESS
68J	–	TO ENGINE ROOM HARNESS
69J	G	TO ENGINE ROOM HARNESS
70J	L	TO ENGINE ROOM HARNESS
71J	–	TO ENGINE ROOM HARNESS
72J	–	TO ENGINE ROOM HARNESS
73J	–	TO ENGINE ROOM HARNESS
74J	–	TO ENGINE ROOM HARNESS
75J	–	TO ENGINE ROOM HARNESS
76J	–	TO ENGINE ROOM HARNESS
77J	–	TO ENGINE ROOM HARNESS
78J	–	TO ENGINE ROOM HARNESS
79J	SHIELD	TO ENGINE ROOM HARNESS
80J	B	TO ENGINE ROOM HARNESS
81J	W	TO ENGINE ROOM HARNESS
82J	–	TO ENGINE ROOM HARNESS
83J	–	TO ENGINE ROOM HARNESS
84J	–	TO ENGINE ROOM HARNESS
85J	–	TO ENGINE ROOM HARNESS
86J	–	TO ENGINE ROOM HARNESS
87J	–	TO ENGINE ROOM HARNESS
88J	–	TO ENGINE ROOM HARNESS
89J	–	TO ENGINE ROOM HARNESS
90J	–	TO ENGINE ROOM HARNESS
91J	–	TO ENGINE ROOM HARNESS
92J	Y	TO ENGINE ROOM HARNESS
93J	G	TO ENGINE ROOM HARNESS
94J	L	TO ENGINE ROOM HARNESS
95J	P	TO ENGINE ROOM HARNESS
96J	–	TO ENGINE ROOM HARNESS
97J	SB	TO ENGINE ROOM HARNESS
98J	P	TO ENGINE ROOM HARNESS
99J	LA/R	TO ENGINE ROOM HARNESS
100J	R	TO ENGINE ROOM HARNESS

Connector No.	M44
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FW-CS
Connector Color	WHITE

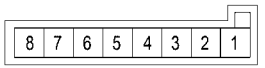
H.S.



Terminal No.	Color of Wire	Signal Name
1P	R	IGNITION
2P	G	IGNITION
3P	Y	IGNITION RELAY-2 CONTROL
4P	LG	REAR WINDOW DEFOGGER RELAY OUTPUT
5P	GR	REAR WINDOW DEFOGGER RELAY OUTPUT
6P	LA/R	REAR WINDOW DEFOGGER RELAY CONTROL
7P	Y	IGNITION
8P	V	IGNITION
9P	L	BATTERY
10P	LG	IGNITION
11P	–	–
12P	–	–
13P	G	BATTERY
14P	–	–
15P	L	BATTERY
16P	LA/W	FRONT BLOWER MOTOR RELAY CONTROL

Connector No.	M65
Connector Name	JOINT CONNECTOR-M26
Connector Type	SAC08JW
Connector Color	WHITE

H.S.



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

AADIA1414GB

CVT SHIFT LOCK SYSTEM CONNECTORS

Connector No.	M68
Connector Name	FUSE BLOCK (J/B)
Connector Type	NS16FBR-CS
Connector Color	BROWN

H.S.

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

8	BR	AT SHIFT DOWN
9	BG	AT SHIFT UP
10	B	GROUND
11	SB	NOT M RANGE
12	L	O PWR ATDVC
13	G	I AT LOCKED IN PARK SW
14	-	-
15	-	-
16	-	-

Terminal No.	Color of Wire	Signal Name
1R	V	ILLUMINATION +
2R	G	IGNITION
3R	V	BATTERY
4R	-	-
5R	-	-
6R	LA/L	ACCESSORY
7R	LA/V	BATTERY
8R	-	-
9R	-	-
10R	GR	BATTERY
11R	-	-
12R	-	-
13R	-	-
14R	W	BATTERY
15R	W	BATTERY
16R	GR	ACCESSORY

Connector No.	M107
Connector Name	CVT SHIFT SELECTOR
Connector Type	TH16FW-NH
Connector Color	WHITE

H.S.

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

Terminal No.	Color of Wire	Signal Name
1	-	-
2	-	-
3	R	-
4	B	GROUND
5	G	ILL CONT OUT
6	B	GROUND
7	LG	M RANGE

AADIA1415GB

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORK FLOW

Work Flow

INFOID:0000000014907409

NOTE:
"DTC" includes DTC at the 1st trip.

1.OBTAIN INFORMATION ABOUT SYMPTOM

Refer to TM-91, "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-199, "Symptom Table" can be used effectively.

3. Check the relevant information including STI, etc.

Do malfunction information and DTC exist?

Malfunction information and DTC exist.>>GO TO 3.
Malfunction information exists but no DTC.>>GO TO 4.
No malfunction information, but DTC exists.>>GO TO 5.

3.REPRODUCE MALFUCTION SYSTEM

Check the malfunction described by the customer on the vehicle.
Check if the behavior is fail safe or normal operation. Refer to TM-66, "Fail-safe".
Interview sheet can be used effectively when reproduce malfunction conditions. Refer to TM-91, "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-66, "Fail-safe".
Interview sheet can be used effectively when reproduce malfunction conditions. Refer to TM-91, "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-69, "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-54, "Intermittent Incident" to check.

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

Use TM-199, "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:0000000014907410

DESCRIPTION

There are many operating conditions that may cause a malfunction of the transmission parts. By understanding those conditions properly, a quick and exact diagnosis can be achieved.
In general, perception of a problem varies depending on individuals. Ask the customer about his/her concerns carefully. It is important to understand the phenomenon or status. To systemize all the information for the diagnosis, prepare the question sheet referring to the question points.
In some cases, multiple conditions that appear simultaneously may cause a DTC to be detected.

KEY POINTS

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

SEF907L

Worksheet Sample

Question sheet

Customer's name	MR/MS	Registration number		Initial year registration	Year Month day
		Vehicle type		Chassis No.	
Storage date	Year Month day	Engine		Mileage	km/mile
Symptom	☐ Vehicle does not start. (☐ R position ☐ D position ☐ M position)				
	☐ Upshifting does not occur. ☐ Downshifting does not occur.				
	☐ Hybrid system warning lamp is on. ☐ Does not to READY.				
	☐ Lock-up malfunction				
	☐ Shift point is too high. ☐ Shift point is too low.				
	☐ Shift shock (☐ N⇒D ☐ Lock-up ☐ R, D, and M position)				
	☐ Slip (☐ N⇒D ☐ Lock-up ☐ R, D, and M position)				
	☐ Noise ☐ Vibration				
	When selector lever position is shifted, shift pattern does not change.				
	☐ Other ( )				
First occurrence	☐ Recently (as from month of year)				

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
Frequency of occurrence		☐ Always ☐ Under certain conditions ☐ Sometimes (time(s)/day)			
Climate conditions		Irrelevant			
	Weather	☐ Clear ☐ Cloud ☐ Rain ☐ Snow ☐ Others)			
	Temperature	☐ Hot ☐ Warm ☐ Cool ☐ Cold ☐ Temperature (Approx. °C/°F)			
	Relative humidity	☐ High ☐ Moderate ☐ Low			
Transaxle condition		☐ In cold-start ☐ During warm-up (approx. °C/°F) ☐ After warm-up ☐Engine speed: rpm			
Road conditions		☐ Urban area ☐ Suburb area ☐ Highway ☐ Mountainous road (uphill or downhill)			
Operating condition, etc.		Irrelevant ☐ When engine starts ☐ During idling ☐ During driving ☐ During acceleration ☐ At constant speed driving ☐ During deceleration ☐ During cornering (RH curve or LH curve) ☐ READY (stop the vehicle)			
Other conditions					

ADDITIONAL SERVICE WHEN REPLACING TCM

Description

INFOID:0000000014907411

Perform the following work when the TCM is replaced. For work procedure, refer to TM-93, "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.

RESOLVER OFFSET
- After replacing the traction motor inverter, it is required to Initializes offset values of traction motor resolver by using CONSULT.

Work Procedure

INFOID:0000000014907412

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. Reconnect all the connectors.
3. Turn ignition switch ON.
4. Select “Work Support” in “TRANSMISSION”.
5. Select “READ IP CHARA - REPLACEMENT TCM”.
6. Import data according to the instructions on the CONSULT screen.

NOTE:
If TCM data cannot be saved on CONSULT, replace TCM and transaxle assembly simultaneously. Refer to TM-97, "Description".

>> 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 “TRANSMISSION”.
   NOTE:
   If “TRANSMISSION” 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 THE TCM

1. Turn ignition switch OFF and wait for 10 seconds.
2. Replace the TCM. Refer to TM-213, "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:
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.

>> GO TO 6.

6. PERFORM RESOLVER OFFSET

Perform “RESOLVER OFFSET”. Refer to TMS-56, "Description".

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY

Description

INFOID:0000000014907413

Perform the following work after the transaxle assembly is replaced. For work procedure, refer to TM-95, "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.

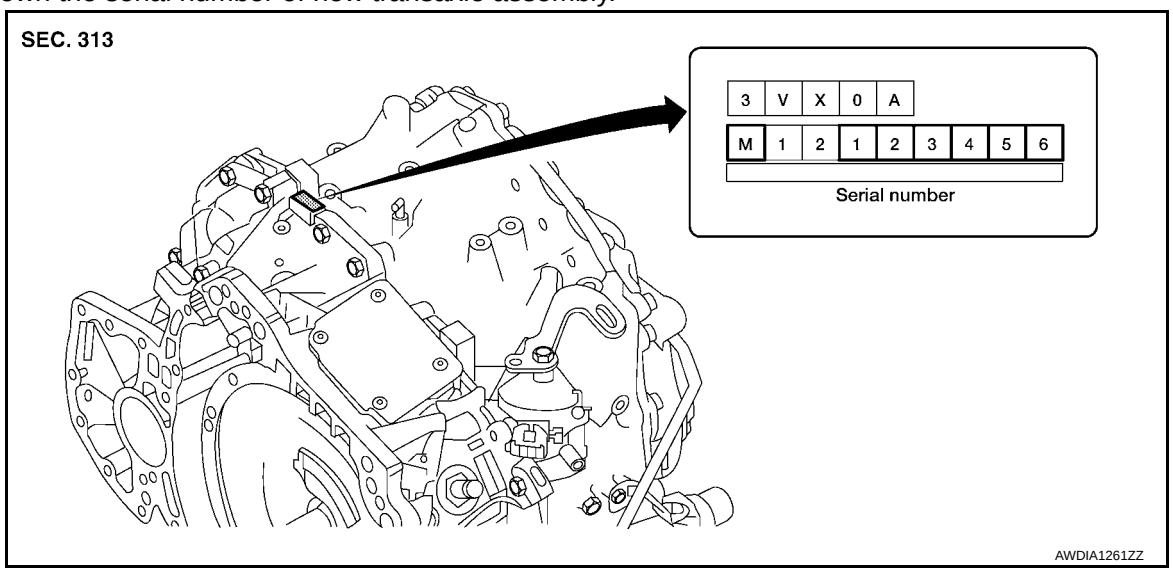
RESOLVER OFFSET
- After replacing the traction motor inverter, it is required to Initializes offset values of traction motor resolver by using CONSULT.

Work Procedure

INFOID:0000000014907414

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.

3. ERASE CVT FLUID DEGRADATION LEVEL DATA

With CONSULT

1. Select “WORK SUPPORT” in “TRANSMISSION”.
2. Select “CONFORM CVTF DETERIORTN”.
3. Touch “Clear”.

>> GO TO 4.

4. PERFORM RESOLVER OFFSET

Perform “RESOLVER OFFSET”. Refer to TMS-56, "Description".

>> GO TO 5.

5. PERFORM CLUTCH 1 ZERO POSITION LEARNING

Refer to HBC-105, "Description".

>> WORK END

ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY

Description

INFOID:0000000014907415

When replacing TCM and transaxle assembly simultaneously, perform the following work. For work procedure, refer to TM-97, "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.

RESOLVER OFFSET
- After replacing the traction motor inverter, it is required to Initializes offset values of traction motor resolver by using CONSULT.

Work Procedure

INFOID:0000000014907416

1. SAVE TCM DATA (VEHICLE SPECIFICATIONS)

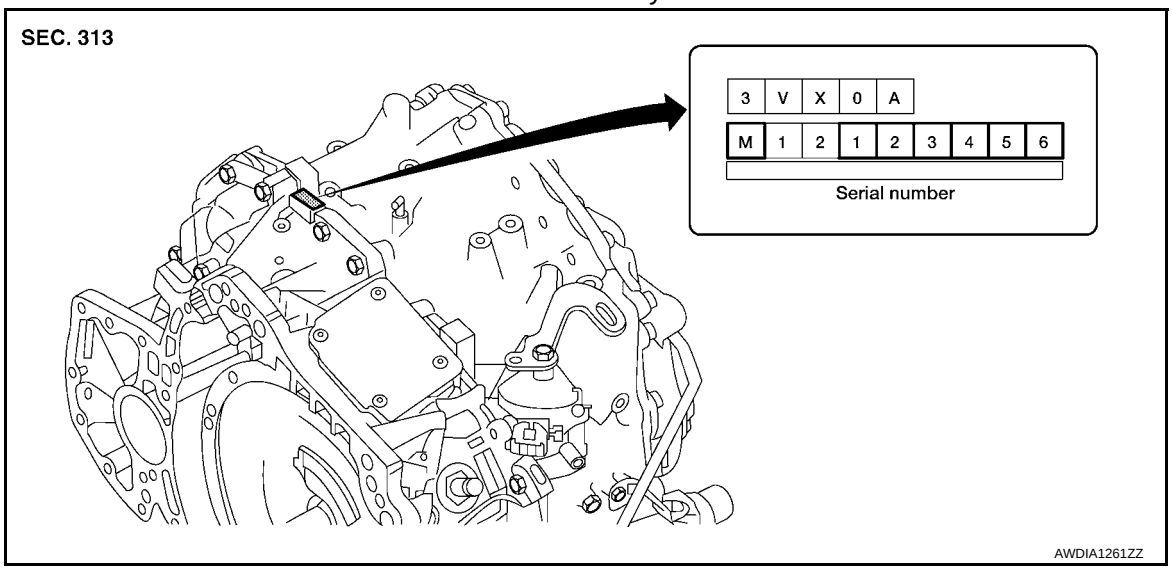
With CONSULT
1. Turn ignition switch OFF.
2. Reconnect all the connectors.
3. Turn ignition switch ON.
4. Select “Re/programming, Configuration”.
5. Select “TRANSMISSION”.
   NOTE:
   If “TRANSMISSION” is not displayed and TCM data cannot be saved on CONSULT, GO TO 2.
6. Select “Programming”.
7. Save TCM data on CONSULT according to the CONSULT display.

>> GO TO 2.

2. REPLACE THE TCM AND TRANSMISSION

1. Turn ignition switch OFF and wait for 10 seconds.
2. Replace TCM and transaxle assembly. Refer to TM-213, "Removal and Installation" (TCM), TM-244, "Removal and Installation" (Transaxle assembly).
   NOTE:

Write down the serial number of new 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. 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 5.

5. PERFORM RESOLVER OFFSET

Perform “RESOLVER OFFSET”. Refer to TMS-56, "Description".

>> GO TO 6.

6. PERFORM CLUTCH 1 ZERO POSITION LEARNING

Refer to HBC-105, "Description".

>> WORK END

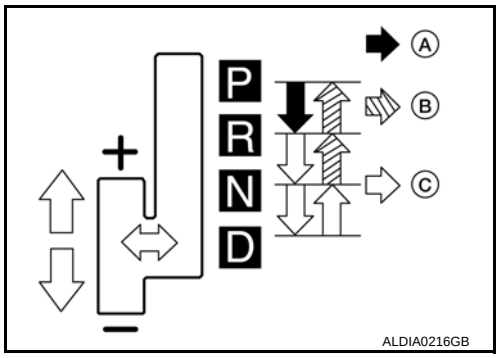
CVT POSITION

Inspection

INFOID:0000000014629992

INSPECTION

1. Move shift selector to “P” position, and turn ignition switch ON (engine stop).
2. Check that shift selector can be moved from “P” position when brake pedal is depressed. Also check that shift selector can be moved from “P” position only when brake pedal is depressed.
3. Move shift selector and check for excessive effort, sticking, noise or rattle.
4. Check that shift selector stops at each position with the feel of engagement when it is moved through all the positions. Check that the actual position of shift selector matches the position shown by shift position indicator and manual lever on the transaxle.
5. The method of operating shift selector to individual positions correctly should be as shown.
   - (A): Press shift selector handle button to operate shift selector, while depressing the brake pedal.
   - (B): Press shift selector handle button to operate shift selector.
   - (C): Shift selector can be operated without pressing shift selector handle button.



6. When shift selector handle button is pressed in “P”, “R”, “N” or “D” position without applying forward/backward force to shift selector, check shift selector handle button operation for sticking.
7. Check that back-up lamps illuminate only when shift selector is placed in the “R” position.
8. Check that back-up lamps do not illuminate when shift selector is pushed toward the “R” position when in the “P” or “N” position.
   CAUTION:
   Check the lighting without pressing shift button.
9. Check that the engine can only be started with shift selector in the “P” and “N” positions.
10. Check that transaxle is locked completely when shift selector is in “P” position.
11. Check the operation of manual mode.
    1. When shift selector is set to manual shift gate, make sure manual mode is displayed on combination meter.
    2. Move shift selector to "+" and "-" sides, and make sure set shift position changes.

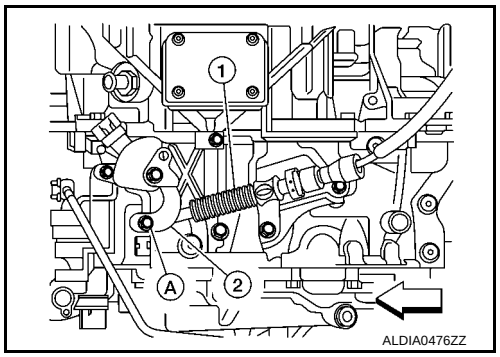
Adjustment

INFOID:0000000014629993

ADJUSTMENT

1. Apply the parking brake.
   CAUTION:
   Make sure the vehicle cannot move with the parking brake applied.
2. Loosen the control cable nut (A) and place the manual lever (2) in "P" position.

   ⇦ : Front



3. Move the shift selector in “P” position.
4. Adjust control cable (1) as follows.
   - From the transmission end push the control cable (1) in with a load of 9.8 N (approximately 1 kg, 2.2 lb).
   - Release the cable and temporarily tighten the control cable nut (A).

   NOTE:
   Do not move the manual lever (2). Make sure the manual lever (2) stays in the "P" position.
5. Tighten the control cable nut (A) to specified torque. Refer to TM-210, "Exploded View".

CAUTION:
Secure manual lever (2) when tightening control cable nut (A).

6. Check the operation of the CVT.

HOW TO ERASE PERMANENT DTC

Description

INFOID:0000000014629994

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-170, "Description".

DTC/CIRCUIT DIAGNOSIS

U0073 COMMUNICATION BUS A OFF

DTC Description

INFOID:0000000014907417

DTC DETECTION LOGIC

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

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

POSSIBLE CAUSE

Harness or connector (CAN communication line is error)

FAIL-SAFE

Vehicle does not run

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 >> Refer to TM-102, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907418

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U0100 LOST COMMUNICATION (ECM A)

DTC Description

INFOID:0000000014907419

DTC DETECTION LOGIC

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

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

POSSIBLE CAUSE

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

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow

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 >> Refer to TM-103, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907420

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U0110 LOST COMMUNICATION (DRIVE MOTOR A)

DTC Description

INFOID:0000000014907421

DTC DETECTION LOGIC

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

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0110	LOST COMM (DRIVE MOTOR A) (Lost communication with drive motor control module A)	Diagnosis condition	When the ignition switch is ON
		Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from traction motor inverter
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- Traction motor inverter
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

- When a traction motor and an engine drive
- Engine torque restriction to 40 Nm
- When a traction motor drive
- Vehicle does not run

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 “U0110” detected?

YES >> Refer to TM-104, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907422

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U0140 LOST COMMUNICATION (BCM)

DTC Description

INFOID:0000000014907423

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

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

Is “U0140” detected?

YES >> Refer to TM-105, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907424

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U0155 LOST COMMUNICATION (IPC)

DTC Description

INFOID:0000000014907425

DTC DETECTION LOGIC

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

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

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

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

Is “U0155” detected?

YES >> Refer to TM-106, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907426

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U0164 LOST COMMUNICATION (HVAC)

DTC Description

INFOID:0000000014907427

DTC DETECTION LOGIC

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

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

POSSIBLE CAUSE

- A/C auto amp.
- Harness or connector (CAN communication line is open or shorted)

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

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

Is “U0164” detected?

YES >> Refer to TM-107, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907428

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U0293 LOST COMMUNICATION (HPCM)

DTC Description

INFOID:0000000014907429

DTC DETECTION LOGIC

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

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U0293	LOST COMM (HPCM) (Lost Communication With Hybrid Powertrain Control Module)	Diagnosis condition	When the ignition switch is ON
		Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from HPCM
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

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

FAIL-SAFE

Vehicle does not run

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 “U0293” detected?

YES >> Refer to TM-108, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907430

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U0300 CAN COMMUNICATION DATA

DTC Description

INFOID:0000000014907431

DTC DETECTION LOGIC

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

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

POSSIBLE CAUSE

Control unit other than TCM

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow

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 >> Refer to TM-109, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907432

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

DTC Description

INFOID:0000000014907433

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

DTC DETECTION LOGIC

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

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

POSSIBLE CAUSE

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

FAIL-SAFE

Vehicle does not run

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 >> Refer to TM-111, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907434

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U110E LOST COMMUNICATION (HPCM)

DTC Description

INFOID:0000000014907435

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U110E	LOST COMM (HCM) (Lost Communication With HPCM)	Diagnosis condition	When the ignition switch is ON
		Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from HPCM
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- HPCM
- 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 “U110E” detected?

YES >> Refer TM-114, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907436

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U110F LOST COMMUNICATION (ECM)

DTC Description

INFOID:0000000014907437

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U110F	LOST COMM (ECM) (Lost Communication With ECM)	Diagnosis condition	When the ignition switch is ON
		Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from ECM
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

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

FAIL-SAFE

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 “U110F” detected?

YES >> Refer TM-114, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907438

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U1110 LOST COMMUNICATION (TRACTION MOTOR INVERTER)

DTC Description

INFOID:0000000014907439

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
U1110	LOST COMM (MG-INV) (Lost Communication With traction motor inverter)	Diagnosis condition	When the ignition switch is ON
		Signal	CAN communication signal
		Threshold	TCM is unable to receive the CAN communications signal from traction motor inverter
		Diagnosis delay time	Continuously for 2 seconds or more

POSSIBLE CAUSE

- Traction motor inverter
- 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 “U1110” detected?

YES >> Refer TM-114, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907440

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

U1117 LOST COMMUNICATION (ABS)

DTC Description

INFOID:0000000014907441

DTC DETECTION LOGIC

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

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

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

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

Is “U1117” detected?

YES >> Refer TM-115, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907442

For the diagnosis procedure, refer to LAN-26, "Trouble Diagnosis Flow Chart".

P062F EEPROM

DTC Description

INFOID:0000000014907443

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

DTC DETECTION LOGIC

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

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

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION

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

Is “P062F” detected?

YES >> Refer to TM-116, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907444

1.REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

>> WORK END

P0701 TRANSMISSION CONTROL SYSTEM

DTC Description

INFOID:0000000014907445

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0701	T/M CONTROL SYSTEM (Transmission Control System)	Diagnosis condition	—
		Signal	—
		Threshold	Detects malfunction when power source is not supplied to TCM
		Diagnosis delay time	—

POSSIBLE CAUSE

- Harness or connector (TCM power supply circuit is open or shorted.)
- TCM

FAIL-SAFE

Not applicable

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. Maintain the following conditions for 10 seconds or more.

Selector lever : “D” position

3. Perform “Self Diagnosis Results” in “EV/HEV”.

Is “P0701” detected?

YES >> Refer to TM-117, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907446

1.CHECK TCM DETECTS DTC

Refer to TM-72, "Index of HPCM-detected DTC".

Is DTC detected?

YES >> Refer to TM-70, "DTC Index".
NO >> GO TO 2.

2.MAIN POWER SUPPLY AND GROUND CIRCUIT

Check main power supply and ground circuit. Refer to TM-193, "Diagnosis Procedure".

Is the inspection result normal?

YES >> Replace TCM. Refer to TM-213, "Removal and Installation".
NO >> Repair or replace damaged parts.

P0705 TRANSMISSION RANGE SENSOR A

DTC Description

INFOID:0000000014907447

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)]	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	Transmision range switch signal
		Threshold	Two or more range signals simultaneously stay ON continuously
		Diagnosis delay time	Maintained for 2 seconds

POSSIBLE CAUSE

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

FAIL-SAFE

- Shift position indicator on combination meter is not displayed
- Vehicle speed is creep speed

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION

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

Is “P0705” detected?

YES >> Refer to TM-118, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907448

1.CHECK TCM INPUT SIGNALS

With CONSULT

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

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

Monitor item	Test condition	Condition
P POSITION SW	Selector lever: “P” position	On
	Other than the above	Off

Without CONSULT

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

+ TCM		–	Test condition	Voltage
Connector	Terminal			
F75	4	Ground	Selector lever: “D” position	10 – 16 V
			Other than the above	Approx. 0 V
	5		Selector lever: “N” position	10 – 16 V
			Other than the above	Approx. 0 V
	6		Selector lever: “R” position	10 – 16 V
			Other than the above	Approx. 0 V
	7		Selector lever: “P” position	10 – 16 V
			Other than the above	Approx. 0 V

Is the inspection result normal?

YES >> 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.

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	Not existed
		5	
		6	
		7	

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 10.
NO >> Repair or replace malfunctioning parts.

4. CHECK N POSITION SW CIRCUIT (PART 1)

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

TCM			Continuity
Connector	Terminal		
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 10.
NO >> Repair or replace malfunctioning parts.

6. CHECK R 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	6	2	Not existed
		4	
		5	
		7	

Is the inspection result normal?

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

7.CHECK R POSITION SW CIRCUIT (PART 2)

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

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

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair or replace malfunctioning parts.

8.CHECK P POSITION SW CIRCUIT (PART1)

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

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

Is the inspection result normal?

YES >> GO TO 9.
NO >> Repair or replace malfunctioning parts.

9.CHECK P POSITION SW CIRCUIT (PART 2)

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

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

Is the inspection result normal?

YES >> GO TO 10.
NO >> Repair or replace malfunctioning parts.

10.CHECK TRANSMISSION RANGE SWITCH

Check transmission range switch. Refer to TM-121, "Component Inspection".

Is the check result normal?

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

Component Inspection

INFOID:0000000014907449

1.CHECK TRANSMISSION RANGE SWITCH

Check continuity between transmission range switch connector terminals.

Transmission range switch Terminal	Condition	Continuity
1 – 2	Manual lever: “P” and “N” positions	Existed
	Other than the above	Not existed
3 – 4	Manual lever: “P” position	Existed
	Other than the above	Not existed
3 – 5	Manual lever: “R” position	Existed
	Other than the above	Not existed
3 – 6	Manual lever: “N position	Existed
	Other than the above	Not existed
3 – 7	Manual lever: “D” position	Existed
	Other than the above	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace transmission range switch. Refer to TM-215, "Removal and Installation".

P0706 TRANSMISSION RANGE SENSOR A

DTC Description

INFOID:0000000014907450

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

Harness or connector (CAN communication line is error)

FAIL-SAFE

- Shift position indicator on combination meter is not displayed
- Vehicle speed is creep speed

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

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

Is “P0706” detected?

YES >> Refer to TM-123, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907451

1.ADJUSTMENT OF CONTROL CABLE

Adjust control cable. Refer to TM-99, "Adjustment".

>> GO TO 2.

2.PERFORM DTC CONFIRMATION PROCEDURE

With CONSULT

1. Turn ignition switch ON.
2. Select “Self Diagnostic Results” in “TRANSMISSION”.
3. Touch “Erase”.
4. Perform “DTC CONFIRMATION PROCEDURE". Refer to TM-123, "DTC Description".

Is “P0706” detected?

YES >> GO TO 3.

NO >> INSPECTION END

3.CHECK POWER CIRCUIT

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

+		–	Voltage
Transmission range switch			
Connector	Terminal		
F78	3	Ground	10 – 16 V

Is the inspection result normal?

YES >> GO TO 4.
NO >> GO TO 7.

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

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

Transmission range switch		TCM		Continuity
Connector	Terminal	Connector	Terminal	
F78	4	F75	7	Existed
	5		6	
	6		5	
	7		4	

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	4	Ground	Not existed
	5		
	6		
	7		

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-125, "Component Inspection".

Is the inspection result normal?

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

7.DETECT MALFUNCTIONING ITEMS

Check the following items:

- Harness open circuit or short circuit between ignition switch and IPDM E/R. Refer to PG-44, "Wiring Diagram - IGNITION POWER SUPPLY -".
- Harness open circuit or short circuit between IPDM E/R connector terminal 70 and transmission range switch connector terminal 3.
- 10A fuse (No. 83, located in the IPDM E/R). Refer to PG-118, "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:0000000014907452

1. CHECK TRANSMISSION RANGE SWITCH

Check continuity between transmission range switch connector terminals.

Transmission range switch	Condition	Continuity
Terminal		
1 – 2	Manual lever: “P” and “N” positions	Existed
	Other than the above	Not existed
3 – 4	Manual lever: “P” position	Existed
	Other than the above	Not existed
3 – 5	Manual lever: “R” position	Existed
	Other than the above	Not existed
3 – 6	Manual lever: “N position	Existed
	Other than the above	Not existed
3 – 7	Manual lever: “D” position	Existed
	Other than the above	Not existed

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace transmission range switch. Refer to TM-215, "Removal and Installation".

P0711 TRANSMISSION FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000015207747

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)	Diagnosis condition	—
		Signal	CVT fluid temperature sensor signal
		Threshold	When any of 1 or 2 is satisfied: 1. When the temperature does not increase to the specified temperature within a specified time after all of the following conditions are satisfied: - TCM power supply voltage: More than 11 V - CAN communication is normal - Motor speed: 450 rpm or more - Accelerator pedal position: 3 deg. or more - Vehicle speed: 10 km/h (7 MPH) or more - U0100, U0110, U0293, P0705, P0706, P0712, P0713, and P2765 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 42°C (107°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.
		Diagnosis delay time	—

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. 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
0°C (32°F) – 9°C (48.2°F)	7 minutes or more
Other than the above	— (Go to 3.)

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.
5. Check the first trip DTC.

Is “P0711” detected?

YES >> Go to TM-128, "Diagnosis Procedure".
NO >> GO TO 3.

3. 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 Terminal	Condition	Resistance (Approx.)
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 CVT fluid temperature sensor. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

Diagnosis Procedure

INFOID:0000000015207748

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

Is the inspection result normal?

YES >> GO TO 2.
NO >> Replace transaxle assembly. Refer to TM-244, "Removal and Installation"

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

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

TCM		CVT unit		Continuity
Connector	Terminal	Connector	Terminal	
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.

P0712 TRANSMISSION FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000014907453

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

- Engine coolant temperature when engine start: Temp. ≥ 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

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 >> Refer to TM-129, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907454

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.
NO >> Repair or replace malfunctioning part.

2.CHECK CVT FLUID TEMPERATURE SENSOR

Check resistance between CVT unit connector terminals.

CVT unit Terminal	Condition	Resistance (Approx.)
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 >> Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P0713 TRANSMISSION FLUID TEMPERATURE SENSOR A

DTC Description

INFOID:0000000014907455

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0713	FLUID TEMP SENSOR A (Transmission Fluid Temperature Sensor A Circuit High)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • Vehicle speed: More than 10 km/h (6 MPH)
		Signal	CVT fluid temperature sensor signal
		Threshold	Fluid temperature sensor detection voltage: 2.48 V or more
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

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

FAIL-SAFE

- Engine coolant temperature when engine start: Temp. ≥ 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

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 >> Refer to TM-131, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907456

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.

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.)
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 >> INSPECTION END
NO >> Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P0715 INPUT SPEED SENSOR A

DTC Description

INFOID:0000000014907457

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0715	INPUT SPEED SENSOR A (Input/Turbine Speed Sensor A Circuit)	Diagnosis condition	When any of 1, 2 or 3 is satisfied: 1. 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: 400 rpm or more 2. 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 3. When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Range: D - Motor speed: 300 rpm or more - Primary pulley speed: 300 rpm or more - Secondary pulley seed: 300 rpm or more - Differences between motor speed and primary pulley speed: More than 1,000 rpm - DTC other than the applicable DTC is not detected. - Vehicle speed: 20 km/h (12.5 MPH) or more
		Signal	—
		Threshold	When the following conditions are satisfied: • TCM power supply voltage: More than 11 V • After range change completion, it spends 2 seconds or more.
		Diagnosis delay time	—

POSSIBLE CAUSE

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

FAIL-SAFE

- Start is slow
- Acceleration is slow
- Manual mode is not activated

DTC CONFIRMATION PROCEDURE

CAUTION:

Be careful of the driving speed.

1. PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION

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

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

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

Is “P0715” detected?

YES >> Refer to TM-134, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907458

1.CHECK PRIMARY SPEED SENSOR POWER CIRCUIT

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

+		–	Voltage
Primary speed sensor			
Connector	Terminal		
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.

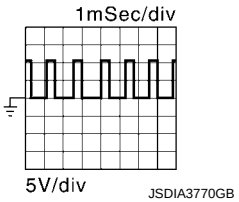
Primary speed sensor		—	Continuity
Connector	Terminal		
F76	2	Ground	Not existed

Is the inspection result normal?

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	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	1250 Hz  JSDIA3770GB

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace primary speed sensor. Refer to TM-226, "Removal and Installation".

6. DETECT MALFUNCTIONING ITEMS

Check the following items:

- Harness open circuit or short circuit between ignition switch and IPDM E/R. Refer to PG-44, "Wiring Diagram - IGNITION POWER SUPPLY -".
- Harness open circuit or short circuit between IPDM E/R connector terminal 70 and primary speed sensor connector terminal 3.
- 10A fuse (No.83, located in the IPDM E/R). Refer to PG-118, "IPDM E/R Terminal Arrangement".
- IPDM E/R

Is the check result normal?

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

P0746 PRESSURE CONTROL SOLENOID A

DTC Description

INFOID:0000000014907459

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
P0746	PC SOLENOID A (Pressure Control Solenoid A Performance/Stuck Off)	1	Diagnosis condition	When all of the following conditions are satisfied: • Motor speed: More than 600 rpm • Primary pulley speed: More than 450 rpm • Idle is not being detected. • Acceleration/deceleration speed: –0.49 m/s^2 (–0.05 G) or more • The primary pulley speed experienced 300 rpm or more and the secondary pulley speed experienced 250 rpm or more at least once. • Secondary pulley speed: More than 150 rpm • TCM power supply voltage: More than 11 V
			Signal	—
			Threshold	The following condition is detected twice or more (1 second or more later after detection of the first) in the same DC • Status with the shifting ratio of the primary pulley speed/secondary pulley ratio exceeding 2.981 is 0.2 sec or more continuously
			Diagnosis delay time	—
		2	Diagnosis condition	When all of the following conditions are satisfied: • Motor speed: More than 600 rpm • Primary pulley speed: More than 450 rpm • Idle is not being detected. • Acceleration/deceleration speed: –0.49 m/s^2 (–0.05 G) or more • The primary pulley speed experienced 300 rpm or more and the secondary pulley speed experienced 250 rpm or more at least once. • Secondary pulley speed: More than 150 rpm • TCM power supply voltage: More than 11 V
			Signal	—
			Threshold	The following condition is detected twice or more (1 second or more later after detection of the first) in the same DC • Status with the shifting ratio of the primary pulley speed/secondary pulley ratio exceeding 3.781 is 0.1 sec or more continuously.
			Diagnosis delay time	—

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

POSSIBLE CAUSE

- Line pressure solenoid valve
- Control valve assembly

FAIL-SAFE

Vehicle does not run

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.

Is “P0746”detected?

YES >> Refer to TM-137, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907460

1.REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

>> WORK END

P0776 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000014907461

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

Secondary pressure solenoid valve

FAIL-SAFE

- When a malfunction occurs on the low oil pressure side
  - Selector shock is large
  - Start is slow
  - Acceleration is slow
  - 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

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 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 >> Refer to TM-139, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907462

1.REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

>> WORK END

P0778 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000014907463

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0778	PC SOLENOID B (Pressure Control Solenoid “B” Electrical)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 0.48 second

POSSIBLE CAUSE

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

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow

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

Is “P0778” detected?

YES >> Refer to TM-140, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907464

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 SECONDARY PRESSURE SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance
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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P0779 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000014907465

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0779	PC SOLENOID B (Pressure control solenoid B Intermittent)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P0778 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open or shorted to power supply
		Diagnosis delay time	Maintained for 0.2 seconds

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

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 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 >> Refer to TM-142, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907466

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?

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

2.CHECK SECONDARY PRESSURE SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit	—	Condition	Resistance
Terminal			
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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P0826 UP AND DOWN SHIFT SW

DTC Description

INFOID:0000000014907467

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

Manual mode is not activated

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION (PART 1)

With CONSULT

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

Is “P0826” detected?

YES >> Go to TM-145, "Diagnosis Procedure".
NO >> GO TO 3.

3.CHECK DTC DETECTION (PART 2)

With CONSULT

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

Is “P0826” detected?

YES >> Go to TM-145, "Diagnosis Procedure".
NO >> GO TO 4.

4.CHECK DTC DETECTION (PART 3)

With CONSULT

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

Is “P0826” detected?

YES >> Go to TM-145, "Diagnosis Procedure".
NO >> GO TO 5.

5.CHECK DTC DETECTION (PART 4)

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

Is “P0826” detected?

YES >> Go to TM-145, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907468

1.CHECK DTC (COMBINATION METER)

With CONSULT
1. Turn ignition switch ON.
2. Select “Self Diagnostic Results” in “METER/M&A”.

Is any DTC detected?

YES >> Check DTC detected item. Refer to MWI-32, "DTC Index".
NO >> GO TO 2.

2.CHECK MANUAL MODE SWITCH POWER SUPPLY CIRCUIT

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

+		–	Condition	Voltage (Approx.)
CVT shift selector				
Connector	Terminal			
M107	7	Ground	Ignition switch: ON	12 V
			Ignition switch: OFF	0 V
	8		Ignition switch: ON	12 V
			Ignition switch: OFF	0 V
	9		Ignition switch: ON	12 V
			Ignition switch: OFF	0 V
	11		Ignition switch: ON	12 V
			Ignition switch: OFF	0 V

Is the inspection result normal?

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

3.CHECK MANUAL MODE SWITCH

1. Turn ignition switch OFF.
2. Check manual mode switch. Refer to TM-146, "Component Inspection".

Is the inspection result normal?

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

4.CHECK CIRCUIT BETWEEN CVT SHIFT SELECTOR AND COMBINATION METER

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

CVT shift selector		Combination meter		Continuity
Connector	Terminal	Connector	Terminal	
M107	7	M76	30	Existed
	8		33	
	9		32	
	11		31	

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

CVT shift selector		—	Continuity
Connector	Terminal		
M107	7	Ground	Not existed
	8		
	9		
	11		

Is the inspection result normal?

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

5.CHECK GROUND CIRCUIT

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

CVT shift selector		—	Continuity
Connector	Terminal		
M107	10	Ground	Existed

Is the inspection result normal?

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

Component Inspection

INFOID:0000000014907469

1.MANUAL MODE SWITCH

Check continuity between CVT shift selector connector terminals.

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

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace the CVT shift selector assembly due to malfunction in manual mode switch. Refer to TM-206, "Removal and Installation".

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

DTC Description

INFOID:0000000014907470

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0841	FLUID PRESS SEN/SW A (Transmission Fluid Pressure Sensor/ Switch “A” Circuit Range/Performance)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • DTC other than the applicable DTC is not detected. • Primary pulley speed: 300 rpm or more • Secondary pulley speed: 324 rpm or more • Target speed for shifting: Less than 0.1 seconds • Pulley ratio: 0.5 – 1.0
		Signal	—
		Threshold	Primary pulley pressure is outside the specified value
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

CAUTION:

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 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 >> Refer to TM-148, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907471

1. REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

>> WORK END

P0847 TRANSMISSION FLUID PRESSURE SEN/SW B

DTC Description

INFOID:0000000014907472

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION

With CONSULT

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

FLUID TEMP : –20°C (–4°F)

5. Check the first trip DTC.

With GST

1. Start the engine and wait for at least 10 seconds.
   CAUTION:
   When the ambient temperature is less than –20°C (–4°F) and the engine is cold, warm up the engine for approximately 5 minutes.
2. Check the first trip DTC.

Is “P0847”detected?

YES >> Refer to TM-149, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907473

1.CHECK TCM INPUT SIGNALS

1. Turn ignition switch OFF.

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

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F75	16	Ground	• After engine warm up • Selector lever: “N” position • At idle	1.05 – 1.18 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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

P0848 TRANSMISSION FLUID PRESSURE SEN/SW B

DTC Description

INFOID:0000000014907474

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION

With CONSULT

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

FLUID TEMP : More than –20°C (–4°F)

5. Check the first trip DTC.

With GST

1. Start the engine and wait for at least 10 seconds.
   CAUTION:
   When the ambient temperature is less than –20°C (–4°F) and the engine is cold, warm up the engine for approximately 5 minutes.
2. Check the first trip DTC.

Is “P0848”detected?

YES >> Refer to TM-152, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907475

1.CHECK TCM INPUT SIGNALS

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

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F75	16	Ground	• After engine warm up • Selector lever: “N” position • At idle	1.05 – 1.18 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. 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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

P084C TRANSMISSION FLUID PRESSURE SEN/SW H

DTC Description

INFOID:0000000014907476

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION

With CONSULT

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

FLUID TEMP : More than –20°C (–4°F)

5. Check the first trip DTC.

With GST

1. Start the engine and wait for at least 10 seconds.
   CAUTION:
   When the ambient temperature is less than –20°C (–4°F) and the engine is cold, warm up the engine for approximately 5 minutes.
2. Check the first trip DTC.

Is “P084C”detected?

YES >> Refer to TM-153, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907477

1.CHECK TCM INPUT SIGNALS

1. Turn ignition switch OFF.

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

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F75	17	Ground	• After engine warm up • Selector lever: “N” position • At idle	0.88 – 1.01 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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

P084D TRANSMISSION FLUID PRESSURE SEN/SW H

DTC Description

INFOID:0000000014907478

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

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

FAIL-SAFE

Not changed from normal driving

DTC CONFIRMATION PROCEDURE

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION

With CONSULT

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

FLUID TEMP : More than –20°C (–4°F)

5. Check the first trip DTC.

With GST

1. Start the engine and wait for at least 10 seconds.
   CAUTION:
   When the ambient temperature is less than –20°C (–4°F) and the engine is cold, warm up the engine for approximately 5 minutes.
2. Check the first trip DTC.

Is “P084D”detected?

YES >> Refer to TM-155, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907479

1.CHECK TCM INPUT SIGNALS

1. Turn ignition switch OFF.

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

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F75	17	Ground	• After engine warm up • Selector lever: “N” position • At idle	0.88 – 1.01 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. 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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".
NO >> Repair or replace malfunctioning parts.

P0863 TCM COMMUNICATION

DTC Description

INFOID:0000000014907480

DTC DETECTION LOGIC

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

POSSIBLE CAUSE

TCM

FAIL-SAFE

Vehicle does not run

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 >> Refer to TM-157, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907481

1.REPLACE TCM

Replace TCM. Refer to TM-213, "Removal and Installation".

>> WORK END

P0890 TCM

DTC Description

INFOID:0000000014907482

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0890	TCM (Transmission Control Module Power Relay Sense Circuit Low)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	Battery voltage: Less than 8.4 V
		Diagnosis delay time	Maintained for 0.2 seconds

POSSIBLE CAUSE

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

FAIL-SAFE

Vehicle does not run

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-158, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907483

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

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

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

Is the inspection result normal?

YES >> Replace the TCM. Refer to TM-213, "Removal and Installation".
NO >> GO TO 2.

2.DETECT MALFUNCTIONING ITEMS

Check the following items:

- Open or short circuit of harness between battery positive terminal and TCM connector terminals 45, and 46.
- 10A fuse (No.49).

Is the inspection result normal?

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

P0962 PRESSURE CONTROL SOLENOID A

DTC Description

INFOID:0000000014907484

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0962	PC SOLENOID A (Pressure Control Solenoid A Control Circuit Low)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 0.2 seconds

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
- Traction motor run prohibited

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 >> Refer to TM-160, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907485

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 LINE PRESSURE SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance
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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P0963 PRESSURE CONTROL SOLENOID A

DTC Description

INFOID:0000000014907486

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0963	PC SOLENOID A (Pressure Control Solenoid A Control Circuit High)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P0962 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open
		Diagnosis delay time	Maintained for 0.2 second

POSSIBLE CAUSE

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

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow
- Traction motor run prohibited

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 >> Refer to TM-162, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907487

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 LINE PRESSURE SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance
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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P0965 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000014907488

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
P0965	PC SOLENOID B (Pressure Control Solenoid B Control Circuit Range Performance)	1	Diagnosis condition	When all of the following conditions are satisfied: • DTC other than the applicable DTC is not detected. • Motor speed: More than 500 rpm • Selector lever: Other than P/N position • CVT fluid temperature: More than -20°C (-4°F) • TCM power supply: More than 11 V • The difference between instruction pressure of primary pressure and 10-msec-ago instruction primary pressure is 0 MPa or more • Instruction pressure of primary pressure: 0.86 MPa or more • Instruction pressure of primary pressure - primary pressure: More than 1.2 MPa
			Signal	—
			Threshold	When all of the following conditions are satisfied and this state is maintained for 1 second: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • Motor speed: More than 500 rpm • Instruction pressure of primary pressure: More than 2 MPa • Primary pressure: 0.4 MPa or less
			Diagnosis delay time	Maintained for 10 seconds
		2	Diagnosis condition	When all of the following conditions are satisfied: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • TCM power supply: More than 11 V • The difference between instruction pressure of primary pressure and 10-msec-ago instruction primary pressure is 0 MPa or more • Primary pressure - instruction pressure of primary pressure: More than 1.2 MPa
			Signal	—
			Threshold	When all of the following conditions are satisfied and this state is maintained for 5.5 seconds: • DTC other than the applicable DTC is not detected. • CVT fluid temperature: More than -20°C (-4°F) • Selector lever: Other than P/N position • Primary pressure - instruction pressure of primary pressure: 1.2 MPa or more
			Diagnosis delay time	Maintained for 10 seconds

POSSIBLE CAUSE

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

FAIL-SAFE

- When a malfunction occurs on the low oil pressure side

- Selector shock is large
- Start is slow
- Acceleration is slow

• 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.

>> 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 >> Refer to TM-165, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907489

1.REPLACE TRANSAXLE ASSEMBLY

Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

>> WORK END

P0966 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000014907490

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0966	PC SOLENOID B (Pressure Control Solenoid B Control Circuit Low)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 0.48 second

POSSIBLE CAUSE

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

FAIL-SAFE

- Selector shock is large
- Start is slow
- Acceleration is slow

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 >> Refer to TM-166, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907491

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 PRIMARY PRESSURE SOLENOID VLAVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance
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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P0967 PRESSURE CONTROL SOLENOID B

DTC Description

INFOID:0000000014907492

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P0967	PC SOLENOID B (Pressure Control Solenoid B Control Circuit High)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P0966 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open
		Diagnosis delay time	Maintained for 0.2 seconds

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

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 >> Refer to TM-168, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907493

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 PRIMARY PRESSURE SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance
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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P188E ELECTRIC OIL PUMP

DTC Description

INFOID:0000000014907494

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P188E	ELECTRIC OIL PUMP (Electric Oil Pump)	Diagnosis condition	—
		Signal	—
		Threshold	When any of 1 or 2 is satisfied: 1. Duty 83 % ≤ state signal < Duty 90 % 2. When all of the following conditions are satisfied: - Pre-charge not in operation. - Warm up not in operation. - Duty 5 % < state signal ≤ Duty 68 % - TCM requests electric oil pump ON and electric oil pump is in the normal stop state or TCM requests electric oil pump OFF and electric oil pump is in the normal rotating state.
		Diagnosis delay time	Maintained for 2 seconds

POSSIBLE CAUSE

Electric oil pump

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. Maintain the following conditions for 5 seconds or more.

CVT fluid temperature	: 20°C (68°F) or more
Vehicle state	: “READY” position

3. Check DTC.

Is “P188E” detected?

YES >> Refer to TM-170, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907495

1.REPLACE ELECTRIC OIL PUMP

Replace electric oil pump. Refer to TM-241, "Removal and Installation".

>> WORK END

P1890 ELECTRIC OIL PUMP RELAY

DTC Description

INFOID:0000000014907496

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P1890	E-OIL PUMP RELAY (Electric Oil Pump Relay)	Diagnosis condition	—
		Signal	—
		Threshold	Duty 90% ≤ state signal < Duty 97 %
		Diagnosis delay time	Maintained for 1 second or more

POSSIBLE CAUSE

Electric oil pump relay

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. Turn ignition switch ON and wait for 5 seconds or more.
2. Check DTC.

Is “P1890” detected?

YES >> Refer to TM-171, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907497

1.CHECK ELECTRIC OIL PUMP RELAY POWER CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between electric oil pump relay harness connector terminals and ground.

+		−	Condition	Voltage
Electric oil pump relay				
Connector	Terminal			
H-4	1	Ground	Ignition switch ON	10 – 16 V
			Ignition switch OFF	0 V
	3		Always	10 – 16 V

Is the inspection result normal?

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

2.DETECT MALFUNCTIONING ITEMS

Check the following items:
- Open or short circuit of electric oil pump relay battery power supply circuit.
- Open or short circuit of electric oil pump relay ignition power supply circuit.

- Open or short circuit of electric oil pump ignition power supply circuit.
- 10A fuse (No.46, located in the IPDM E/R). Refer to PG-118, "IPDM E/R Terminal Arrangement".
- 30A fusible link (No.O).

Is the inspection result normal?

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

3. CHECK CIRCUIT BETWEEN ELECTRIC OIL PUMP RELAY AND ELECTRIC OIL PUMP

1. Disconnect the electric oil pump harness connector.
2. Check the continuity between electric oil pump relay harness connector terminal and electric oil pump harness connector terminal.

+		–		Continuity
Electric oil pump relay		Electric oil pump		
Connector	Terminal	Connector	Terminal	
H-4	2	F80	4	Existed
	5	F81	8	

3. Check for the continuity between the electric oil pump relay harness connector terminal and ground.

Electric oil pump relay		—	Continuity
Connector	Terminal		
H-4	2	Ground	Not existed
	5		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4. ELECTRIC OIL PUMP RELAY

Check the electric oil pump relay. Refer to TM-172, "Component Inspection (Electric Oil Pump Relay)".

Is the inspection result normal?

YES >> Replace the electric oil pump. Refer to TM-241, "Removal and Installation".
NO >> Replace the electric oil pump relay. Refer to TM-15, "CVT CONTROL SYSTEM : Component Parts Location".

Component Inspection (Electric Oil Pump Relay)

INFOID:0000000014907498

1. ELECTRIC OIL PUMP RELAY

1. Remove the electric oil pump relay. Refer to TM-15, "CVT CONTROL SYSTEM : Component Parts Location".
2. Apply voltage of 12 V between the electric oil pump relay connector terminals 1 and 2.
   CAUTION:
   - **Never cause shorting between terminals.**
   - **When applying voltage, put a fuse between terminals.**
3. Check continuity between the electric oil pump relay connector terminals 3 and 5.

Electric oil pump relay	Condition	Continuity
Terminal		
3 – 5	Apply voltage between terminals 1 and 2.	Existed
	Do not apply voltage between terminals 1 and 2.	Not existed

Is the check result normal?

YES >> INSPECTION END
NO >> Replace the electric oil pump relay. Refer to TM-15, "CVT CONTROL SYSTEM : Component Parts Location".

P1891 ELECTRIC OIL PUMP

DTC Description

INFOID:0000000014907499

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P1891	E-OIL PUMP (Electric Oil Pump)	Diagnosis condition	—
		Signal	—
		Threshold	Duty 0% ≤ state signal < Duty 5 %
		Diagnosis delay time	Maintained for 1 second or more

POSSIBLE CAUSE

Harness or connector

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. Turn ignition switch ON and wait for 5 seconds or more.
2. Check DTC.

Is “P1891” detected?

YES >> Refer to to TM-173, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907500

1.CHECK ELECTRIC OIL PUMP RELAY POWER CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between electric oil pump relay harness connector terminals and ground.

+		−	Condition	Voltage
Electric oil pump relay				
Connector	Terminal			
H-4	1	Ground	Ignition switch ON	10 – 16 V
			Ignition switch OFF	0 V
	3		Always	10 – 16 V

Is the inspection result normal?

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

2.DETECT MALFUNCTIONING ITEMS

Check the following items:
- Open or short circuit of electric oil pump relay battery power supply circuit.
- Open or short circuit of electric oil pump relay ignition power supply circuit.

- Open or short circuit of electric oil pump ignition power supply circuit.
- 10A fuse (No.46, located in the IPDM E/R). Refer to PG-118, "IPDM E/R Terminal Arrangement".
- 30A fusible link (No.O).

Is the inspection result normal?

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

3. CHECK CIRCUIT BETWEEN ELECTRIC OIL PUMP RELAY AND ELECTRIC OIL PUMP

1. Disconnect the electric oil pump harness connector.
2. Check the continuity between electric oil pump relay harness connector terminal and electric oil pump harness connector terminal.

+		–		Continuity
Electric oil pump relay		Electric oil pump		
Connector	Terminal	Connector	Terminal	
H-4	2	F80	4	Existed
	5	F81	8	

3. Check for the continuity between the electric oil pump relay harness connector terminal and ground.

Electric oil pump relay		—	Continuity
Connector	Terminal		
H-4	2	Ground	Not existed
	5		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4. CHECK CIRCUIT BETWEEN ELECTRIC OIL PUMP AND TCM

1. Disconnect the TCM harness connector.
2. Check the continuity between electric oil pump harness connector terminal and TCM harness connector terminal.

+		–		Continuity
Electric oil pump		TCM		
Connector	Terminal	Connector	Terminal	
F80	2	F75	32	Existed
	3		25	

3. Check for the continuity between the electric oil pump harness connector terminal and ground.

Electric oil pump		—	Continuity
Connector	Terminal		
F80	2	Ground	Not existed
	3		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5. CHECK CIRCUIT BETWEEN ELECTRIC OIL PUMP AND GROUND

Check for the continuity between the electric oil pump harness connector terminal and ground.

Electric oil pump		—	Continuity
Connector	Terminal		
F81	7	Ground	Existed

Is the inspection result normal?

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

P1892 ELECTRIC OIL PUMP

DTC Description

INFOID:0000000014907501

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P1892	E-OIL PUMP (Electric Oil Pump)	Diagnosis condition	—
		Signal	—
		Threshold	Duty 97% ≤ state signal ≤ Duty 100 %
		Diagnosis delay time	Maintained for 1 second or more

POSSIBLE CAUSE

Harness or connector

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. Turn ignition switch ON and wait for 5 seconds or more.
2. Check DTC.

Is “P1892” detected?

YES >> Refer to to TM-176, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907502

1.CHECK ELECTRIC OIL PUMP RELAY POWER CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between electric oil pump relay harness connector terminals and ground.

+		–	Condition	Voltage
Electric oil pump relay				
Connector	Terminal			
H-4	1	Ground	Ignition switch ON	10 – 16 V
			Ignition switch OFF	0 V
	3		Always	10 – 16 V

Is the inspection result normal?

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

2.DETECT MALFUNCTIONING ITEMS

Check the following items:
- Open or short circuit of electric oil pump relay battery power supply circuit.
- Open or short circuit of electric oil pump relay ignition power supply circuit.

- Open or short circuit of electric oil pump ignition power supply circuit.
- 10A fuse (No.46, located in the IPDM E/R). Refer to PG-118, "IPDM E/R Terminal Arrangement".
- 30A fusible link (No.O).

Is the inspection result normal?

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

3. CHECK CIRCUIT BETWEEN ELECTRIC OIL PUMP RELAY AND ELECTRIC OIL PUMP

1. Disconnect the electric oil pump harness connector.
2. Check the continuity between electric oil pump relay harness connector terminal and electric oil pump harness connector terminal.

+		–		Continuity
Electric oil pump relay		Electric oil pump		
Connector	Terminal	Connector	Terminal	
H-4	2	F80	4	Existed
	5	F81	8	

3. Check for the continuity between the electric oil pump relay harness connector terminal and ground.

Electric oil pump relay		—	Continuity
Connector	Terminal		
H-4	2	Ground	Not existed
	5		

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace the malfunctioning parts.

4. CHECK CIRCUIT BETWEEN ELECTRIC OIL PUMP AND TCM

1. Disconnect the TCM harness connector.
2. Check the continuity between electric oil pump harness connector terminal and TCM harness connector terminal.

+		–		Continuity
Electric oil pump		TCM		
Connector	Terminal	Connector	Terminal	
F80	2	F75	32	Existed
	3		25	

3. Check for the continuity between the electric oil pump harness connector terminal and ground.

Electric oil pump		—	Continuity
Connector	Terminal		
F80	2	Ground	Not existed
	3		

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace the malfunctioning parts.

5. CHECK CIRCUIT BETWEEN ELECTRIC OIL PUMP AND GROUND

Check for the continuity between the electric oil pump harness connector terminal and ground.

Electric oil pump		—	Continuity
Connector	Terminal		
F81	7	Ground	Existed

Is the inspection result normal?

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

P2765 INPUT SPEED SENSOR B

DTC Description

INFOID:0000000014907503

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P2765	INPUT SPEED SENSOR B (Input/Turbine Speed Sensor B Circuit)	Diagnosis condition	When any of 1, 2 or 3 is satisfied: 1. When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Secondary pulley speed: Less than 150 rpm - Primary pulley speed: 1,000 rpm or more 2. When all of the following conditions are satisfied and this state is maintained for 0.5 seconds: - 10-msec-ago secondary pulley speed: 1000 rpm or more - Now secondary pulley speed: 0 rpm 3. When all of the following conditions are satisfied and this state is maintained for 5 seconds: - Range: D - Motor speed: 300 rpm or more - Primary pulley speed: 300 rpm or more - Secondary pulley speed: 300 rpm or more - Input speed: 300 rpm or more - The difference between engine speed and primary pulley speed is 1,000 rpm or less - The difference between engine speed and input speed is 1,000 rpm or less - The difference between primary pulley speed and input speed is 1,000 rpm or less - DTC other than the applicable DTC is not detected. - When any of following items are satisfied: • Primary pulley speed/secondary pulley speed: More than 2.9 • Primary pulley speed/secondary pulley speed: Less than 0.3
		Signal	—
		Threshold	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • After range change completion, it spends 2 seconds or more.
		Diagnosis delay time	Maintained for 5 seconds

POSSIBLE CAUSE

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

FAIL-SAFE

- Engine torque restriction to 40 Nm
- Manual mode is not activated

DTC CONFIRMATION PROCEDURE

CAUTION:
Be careful of the driving speed.

1.PREPARATION BEFORE WORK

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

>> GO TO 2.

2.CHECK DTC DETECTION

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

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

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

Is “P2765” detected?

YES >> Refer to to TM-180, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907504

1.CHECK OUTPUT SPEED SENSOR POWER CIRCUIT

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

+		–	Voltage
Output speed sensor			
Connector	Terminal		
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.

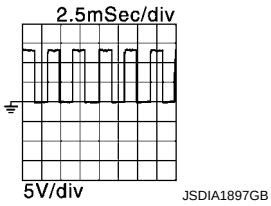
Output speed sensor		—	Continuity
Connector	Terminal		
F77	2	Ground	Not existed

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.

+ TCM		–	Condition	Frequency (Approx.)
Connector	Terminal			
F75	34	Ground	• Selector lever: “M1” position • Vehicle speed: 20 km/h (12 MPH)	150 Hz 

Is the inspection result normal?

YES >> INSPECTION END
NO >> Replace output speed sensor. Refer to TM-227, "Removal and Installation".

6. DETECT MALFUNCTIONING ITEMS

Check the following items:
- Harness open circuit or short circuit between ignition switch and IPDM E/R. Refer to PG-44, "Wiring Diagram - IGNITION POWER SUPPLY -".
- Harness open circuit or short circuit between IPDM E/R connector terminal 70 and output speed sensor connector terminal 3.
- 10A fuse (No.83, located in the IPDM E/R). Refer to PG-118, "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 Description

INFOID:0000000014907505

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition		
P2813	SELECT SOLENOID (Select solenoid)	1	Diagnosis condition	—
			Signal	—
			Threshold	When all the following conditions are established • DTC other than the applicable DTC is not detected. • TCM power supply voltage: More than 11 V • Motor speed - Primary pulley speed [*Reverse Gear Ratio (at R range)] • Selector lever: Other than P/N position • Vehicle speed: Less than 10 km/h (6 MPH) • Clutch 2 state: Not close • Motor speed (at Engine speed: 250 rpm or more): Less than 700 rpm • Motor speed (at Engine speed: Less than 250 rpm): Less than 400 rpm • Motor speed: More than 100 rpm • After clutch 2 state change from close to open, it spends specified times or more.
			Diagnosis delay time	Maintained for 3 seconds
		2	Diagnosis condition	—
			Signal	—
			Threshold	When all of the following conditions are satisfied: • DTC other than the applicable DTC is not detected. • TCM power supply voltage: More than 11 V • When all of the following conditions are satisfied and this state is maintained for 0.25 seconds: - Motor speed - Primary pulley speed: 2600 rpm or more - Selector lever: D - Accelerator pedal position: More than 6.27 deg - After Selector lever change D, it spends specified times or more. - Instruction clutch 2 torque: Less than 85 Nm - Motor speed - Instruction Motor speed (at clutch 1 close): 600 rpm or more
			Diagnosis delay time	Maintained for 30 seconds

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
- When a malfunction occurs on the high oil pressure side
- Vehicle does not run

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.PRECONDITIONING

Fuel level is 1/4 or more.

>> GO TO 3.

3.CHECK DTC DETECTION 1

1. Start the engine.
2. Repeat D position creep start and a stop more than five times.
3. Check the first trip DTC.

Is “P2813”detected?

YES >> Refer to TM-183, "Diagnosis Procedure".
NO >> GO TO 4.

4.CHECK DTC DETECTION 2

1. Start the engine.
2. Maintain the following condition for 50 seconds or more.

Selector lever : “D” position

3. Maintain the following conditions. (Keep 5 seconds or more after the selector lever shifted.)

Selector lever : “D” → “N” position, “N” → “D” position

Does vehicle not run while the check?

YES >> Refer to TM-183, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907506

1.CHECK ECM (ECM)

Perform “Self Diagnostic Results” in “ECM”.

Is any DTC detected?

YES >> Refer to EC-109, "DTC Index".
NO >> Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P2814 SELECT SOLENOID

DTC Description

INFOID:0000000014907507

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P2814	SELECT SOLENOID (Select solenoid)	Diagnosis condition	TCM power supply voltage: 11 V or more
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground
		Diagnosis delay time	Maintained for 0.2 seconds

POSSIBLE CAUSE

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

FAIL-SAFE

Vehicle does not run

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 “P2814” detected?

YES >> Refer to TM-184, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907508

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 SELECT SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance
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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P2815 SELECT SOLENOID

DTC Description

INFOID:0000000014907509

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P2815	SELECT SOLENOID (Select solenoid)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P2814 is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open
		Diagnosis delay time	Maintained for 0.2 seconds

POSSIBLE CAUSE

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

FAIL-SAFE

Vehicle does not run

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 >> Refer to TM-186, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907510

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 SELECT SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance
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 circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P281D PRESSURE CONTROL SOLENOID H

DTC Description

INFOID:0000000014907511

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P281D	PRESS CONTROL SOL H (Pressure Control Solenoid H Control Circuit Low)	Diagnosis condition	TCM power supply voltage: More than 11 V
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is shorted to ground.
		Diagnosis delay time	Maintained for 0.48 seconds

POSSIBLE CAUSE

- Harness or connector (Clutch 1 solenoid valve circuit is open or shorted to ground.)
- Clutch 1 solenoid valve

FAIL-SAFE

Vehicle does not run

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 for 10 seconds or more.

Selector lever : “D” position

3. Check the first trip DTC.

Is “P281D” detected?

YES >> Refer to TM-188, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907512

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 CLUTCH 1 SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit / Terminal	—	Condition	Resistance
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 clutch 1 solenoid valve circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P281E PRESSURE CONTROL SOLENOID H

DTC Description

INFOID:0000000014907513

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P281E	PRESS CONTROL SOL H (Pressure Control Solenoid H Control Circuit High)	Diagnosis condition	When all of the following conditions are satisfied: • TCM power supply voltage: More than 11 V • P281D is not detected
		Signal	—
		Threshold	TCM judges that solenoid valve circuit is open
		Diagnosis delay time	Maintained for 0.2 seconds

POSSIBLE CAUSE

- Harness or connector (Clutch 1 solenoid valve circuit is open or shorted to power supply)
- Clutch 1 solenoid valve

FAIL-SAFE

Traction motor run prohibited

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 for 10 seconds or more.

Selector lever : “D” position

3. Check the first trip DTC.

Is “P281E” detected?

YES >> Refer to TM-190, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907514

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 CLUTCH 1 SOLENOID VALVE CIRCUIT

Check resistance between CVT unit harness connector terminal and ground.

CVT unit Terminal	—	Condition	Resistance
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 clutch 1 solenoid valve circuit. Replace transaxle assembly. Refer to TM-244, "Removal and Installation".

P3185 TRANSMISSION SYSTEM

DTC Description

INFOID:0000000014907515

DTC DETECTION LOGIC

DTC	CONSULT screen terms (Trouble diagnosis content)	DTC detection condition	
P3185	TRANSMISSION SYSTEM (Transmission system)	Diagnosis condition	—
		Signal (terminal)	Self-diagnosis signal from TCM
		Threshold	When HPCM detects self-diagnosis signal from TCM.
		Diagnosis delay time	—

POSSIBLE CAUSE

TCM-detected DTC

FAIL-SAFE

Detection items	Hybrid system operation and vehicle behavior	
Transmission	Transmission malfunction (If clutch 2 is unable to slip)	• The engine and traction motor are stopped. • Driving is not possible even when the accelerator pedal is depressed.
	Primary speed sensor malfunction	The drive force is controlled to a creep force, regardless of the amount the accelerator pedal is depressed.
	Secondary speed sensor malfunction	
	Transmission range switch malfunction	
	If CAN communication with the TCM computing unit or TCM are abnormal	• The engine and traction motor are stopped. • Driving is not possible even when the accelerator pedal is depressed.

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 and wait for 1 second or more.
2. Check the DTC in “EV/HEV”.

Is “P3185” detected?

YES >> Refer to TM-192, "Diagnosis Procedure".
NO-1 >> To check malfunction symptom before repair: Refer to GI-54, "Intermittent Incident".
NO-2 >> Confirmation after repair: INSPECTION END

Diagnosis Procedure

INFOID:0000000014907516

1.REPLACE TCM

Replace TCM. Refer to TM-213, "Removal and Installation".

>> WORK END

MAIN POWER SUPPLY AND GROUND CIRCUIT

Diagnosis Procedure

INFOID:0000000014907517

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		
F75	45	Ground	10 – 16 V
	46		

Is the inspection result normal?

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

2.CHECK TCM POWER CIRCUIT (PART 2)

Check voltage between TCM harness connector terminals and ground.

+		–	Condition	Voltage
TCM				
Connector	Terminal			
F75	47	Ground	Ignition switch ON	10 – 16 V
			Ignition switch OFF	Approx. 0 V
	48		Ignition switch ON	10 – 16 V
			Ignition switch OFF	Approx. 0 V

Is the inspection result normal?

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

3.CHECK TCM GROUND CIRCUIT

Check continuity between TCM harness connector terminals and ground.

TCM		—	Continuity
Connector	Terminal		
F75	41	Ground	Existed
	42		

Is the inspection result normal?

YES >> Check intermittent incident. Refer to GI-54, "Intermittent Incident".
NO >> Repair or replace malfunctioning parts.

4.DETECT MALFUNCTION ITEMS (PART 1)

Check the following items:
- Open or short circuit in TCM battely power supply harness.
- 10A fuse (No.49)

Is the inspection result normal?

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

5.DETECT MALFUNCTIONING ITEMS (PART 2)

Check the following items:
- Open or short circuit in TCM ignition power supply harness.
- 10A fuse (No.83, located in the IPDM E/R). Refer to PG-118, "IPDM E/R Terminal Arrangement".
- IPDM E/R

Is the check result normal?

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

SHIFT POSITION INDICATOR CIRCUIT

Component Parts Function Inspection

INFOID:0000000014907518

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-195, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000014907519

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

Component Function Check

INFOID:0000000014907526

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-196, "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-196, "Diagnosis Procedure".

Diagnosis Procedure

INFOID:0000000014907527

1.CHECK POWER SOURCE

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

+		–	Voltage (Approx.)
Stop lamp switch			
Connector	Terminal		
E38	3	Ground	Battery voltage

Is the inspection result normal?

YES >> GO TO 2.
NO >> GO TO 9.

2.CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to TM-198, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> GO TO 3.
NO >> GO TO 10.

3.CHECK CIRCUIT BETWEEN STOP LAMP SWITCH AND BCM

1. Turn ignition switch OFF.
2. Disconnect BCM connector.
3. Check continuity between stop lamp switch harness connector terminal and BCM harness connector terminal.

Stop lamp switch		BCM		Continuity
Connector	Terminal	Connector	Terminal	
E38	4	E29	126	Yes

Is the inspection result normal?

YES >> GO TO 4.
NO >> Repair or replace malfunctioning parts.

4.CHECK CIRCUIT BETWEEN HPCM AND CVT SHIFT SELECTOR (PART 1)

1. Disconnect CVT shift selector connector.
2. Check continuity between HPCM harness connector terminal and CVT shift selector harness connector terminal.

HPCM		CVT shift selector		Continuity
Connector	Terminal	Connector	Terminal	
E132	79	M107	3	Yes

Is the inspection result normal?

YES >> GO TO 5.
NO >> Repair or replace malfunctioning parts.

5.CHECK GROUND CIRCUIT

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

CVT shift selector		—	Continuity
Connector	Terminal		
M107	4	Ground	Yes

Is the inspection result normal?

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

6.CHECK PART POSITION SWITCH

1. Disconnect park position switch connector.
2. Check park position switch. Refer to TM-198, "Component Inspection (Park Position Switch)".

Is the inspection result normal?

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

7.CHECK SHIFT LOCK SOLENOID

1. Disconnect shift lock solenoid connector.
2. Check shift lock solenoid. Refer to TM-198, "Component Inspection (Shift Lock Solenoid)".

Is the inspection result normal?

YES >> GO TO 8.
NO >> Repair or replace damaged parts.

8.CHECK CVT SHIFT SELECTOR HARNESS

Check CVT shift selector harness.

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace damaged parts.

9.DETECT MALFUNCTIONING ITEM

Check the following items:
- Open circuit or short circuit in stop lamp switch battery power supply.
- Ignition switch
- 10A fuse [No.30, fuse block (J/B)].

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace malfunctioning parts.

10.CHECK STOP LAMP SWITCH MOUNTING POSITION

Check stop lamp switch mounting position. Refer to BR-49, "Adjustment".

Is the inspection result normal?

YES >> GO TO 11.
NO >> Adjust stop lamp switch mounting position.

11. CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to TM-198, "Component Inspection (Stop Lamp Switch)".

Is the inspection result normal?

YES >> Inspection End.
NO >> Repair or replace malfunctioning parts.

Component Inspection (Shift Lock Solenoid)

INFOID:0000000014907528

1. CHECK SHIFT LOCK SOLENOID

Apply voltage to terminals of shift lock solenoid connector and check that shift lock solenoid is activated.

CAUTION:

- **Connect the fuse between the terminals when applying the voltage.**
- **Never cause shorting between terminals.**

+ (fuse)	–	Condition	Status
Shift lock solenoid			
Terminal			
3	4	Apply battery voltage between terminals 3 and 4 with the park position switch (shift selector) in “P” (park) position.	Shift lock solenoid operates

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace shift lock unit. Refer to TM-206, "Removal and Installation".

Component Inspection (Park Position Switch)

INFOID:0000000014907529

1. CHECK PARK POSITION SWITCH

Check the continuity between park position switch connector terminals.

CAUTION:

- **Connect the fuse between the terminals when applying the voltage.**
- **Never cause shorting between terminals.**

Park position switch	Condition	Continuity
Terminal		
3–4	Shift the selector lever to “P” position.	Yes
	Other than above	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace park position switch. Refer to TM-206, "Removal and Installation".

Component Inspection (Stop Lamp Switch)

INFOID:0000000014907531

1. CHECK STOP LAMP SWITCH

Check continuity between the stop lamp switch connector terminals.

Stop lamp switch	Condition	Continuity
Terminal		
1 – 2	Depressed brake pedal	Yes
	Released brake pedal	No

Is the inspection result normal?

YES >> Inspection End.
NO >> Replace stop lamp switch. Refer to BR-57, "Exploded View".

SYMPTOM DIAGNOSIS

CVT CONTROL SYSTEM

Symptom Table

INFOID:0000000014630100

- The diagnosis item number indicates the order of check. Start checking in the order from 1.
- Perform diagnoses of symptom table 2 before symptom table 2.

Symptom Table 1

Symptom		Engine system	CAN communication line	Transmission range switch	Primary speed sensor	Output speed sensor	CVT fluid temperature sensor	Primary pressure sensor	Secondary pressure sensor	Clutch 1 solenoid valve	Manual mode switch	CVT position	Power supply	Control valve	CVT fluid level and state	Ignition switch and starter
		EC-147	TM-70									TM-99	TM-193	TM-244	TM-202	PG-44, STR-13, STR-17
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.	6	3		4	5	7	8	9			2	10	11	1	
	Vehicle cannot be started from R position.	6	3		4	5	7	8	9			2	10	11	1	
	With selector lever in D position, acceleration is extremely poor.	2	3	4	6	7	10	8	9			5	11	12	1	
	With selector lever in R position, acceleration is extremely poor.	2	3	4	6	7	10	8	9			5	11	12	1	

Symptom		Engine system	CAN communication line	Transmission range switch	Primary speed sensor	Output speed sensor	CVT fluid temperature sensor	Primary pressure sensor	Secondary pressure sensor	Clutch 1 solenoid valve	Manual mode switch	CVT position	Power supply	Control valve	CVT fluid level and state	Ignition switch and starter
		EC-147	TM-70									TM-99	TM-193	TM-244	TM-202	PG-44, STR-13, STR-17
Other	No creep at all.	2	4	3	6	7	8	9	10			5	11	12	1	
	Vehicle cannot run in all positions.	6		2	4	5	7	8	9			3	10	11	1	
	With selector lever in D position, driving is not possible.	6		2	4	5	7	8	9			3	10	11	1	
	With selector lever in R position, driving is not possible.	6		2	4	5	7	8	9			3	10	11	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.	6	3		4	5						2		7	1	
	Maximum speed low.	2	3		4	5		6	7	9				8	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	5		3			6	7	4				8	1	
	Engine stalls when selector lever shifted N → D or R.	2	5		3					4				6	1	
	Engine speed does not return to idle.	2	4			3								5	1	
	Does not shift	3	4		5	6						2		7	1	
Other	Cannot be changed to manual mode.		4	2	6	6					1	3	5			1
	Engine does not start in N or P position.			3								2				1
	Engine starts in positions other than N or P.			3								2				1

Symptom Table 2

Symptom		Traction motor	Transmission range switch	Oil pump	Forward clutch	Reverse brake	Planetary gear	Bearings	Parking mechanism	Stop lamp switch	Shift lock solenoid	CVT shift selector
		TM-243								TM-198	TM-198	TM-206
Shift Shock	Large shock (N→ D position)		2		1							
	Large shock (N→ R position)		2			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			
	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						
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			
	Strange noise in D position.	1		2	4		3	5				
	Strange noise in R position.	1		2		4	3					
	Strange noise in N position.	1		2			3					
	Maximum speed low.	1	5	2	4		3					
	With selector lever in P position, vehicle does not enter parking condition or, with selector lever in another position, parking condition is not cancelled.								1			
	Vehicle runs with CVT in P position.						2		1			
	Vehicle runs with CVT in N position.				2	3	1					
	Engine stall.	1										
	Engine stalls when selector lever shifted N → D or R.	1										
	Does not shift			1								
Other	When brake pedal is depressed with ignition switch ON, selector lever cannot be shifted from P position to other position.									1	2	3
	When brake pedal is not depressed with ignition switch ON, selector lever can be shifted from P position to other position.									1	2	3

PERIODIC MAINTENANCE

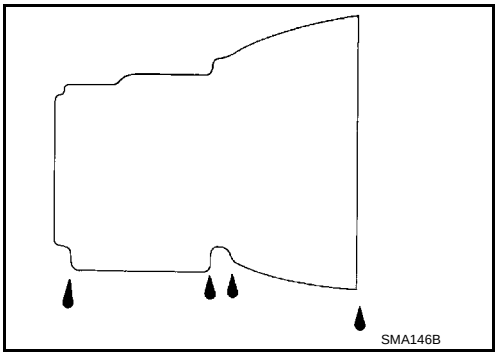
CVT FLUID

Inspection

INFOID:0000000014630101

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-204, "Adjustment".


SMA146B

Replacement

INFOID:0000000014630102

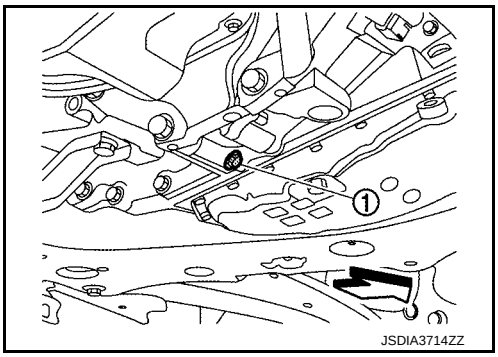
CVT fluid and fluid capacity : Refer to MA-11, "Fluids and Lubricants".

CAUTION:

- **Always use shop paper. Never use shop cloth.**
- **Replace a drain plug gasket with new ones at the final stage of the operation when installing.**
- **Use caution when looking into the drain hole as there is a risk of dripping fluid entering the eye.**
- **After replacement, always perform CVT fluid leakage check.**

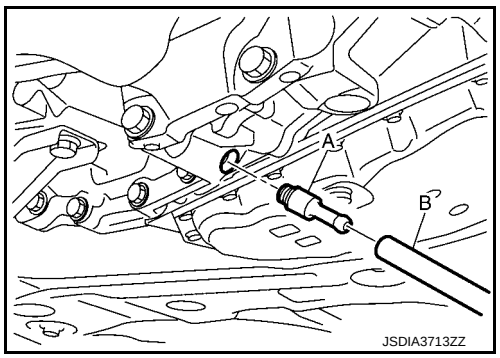
1. Select “Data Monitor” in “TRANSMISSION” using CONSULT.
2. Select “FLUID TEMP” and confirm that the CVT fluid temperature is 40°C (104°F) or less.
3. Check that the selector lever is in the “P” position, then completely engage the parking brake.
4. Lift up the vehicle.
5. Remove the drain plug and drain the CVT fluid from the oil pan. Refer to TM-221, "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 front case.

⇦ : Vehicle front



JSDIA3714ZZ

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 lmp 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. Set the vehicle to READY in inspection mode 5 state. Refer to TM-8, "Precautions Concerning On-board Servicing of Hybrid Systems".
14. Start the engine.
15. While depressing the brake pedal, shift the selector lever to the entire position from “P” to “D”, and shift it to the “P” position.
NOTE:
Hold the lever at each position for 5 seconds.
16. Check that the CONSULT “Data Monitor” in “FLUID TEMP” is 35°C (95°F) to 45°C (113°F).
17. Stop the engine.
18. Lift up the vehicle.
19. Remove the drain plug, and then drain CVT fluid from oil pan.
20. Repeat steps 8 to 19 (one time).
21. Tighten the drain plug to the specified torque. Refer to TM-221, "Exploded View".
22. Remove the overflow plug.
23. Install the charging pipe set (KV311039S0) into the overflow plug hole.
CAUTION:
Tighten the charging pipe by hand.
24. 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.
25. Fill approximately 3 liter (3-1/8 US qt, 2-5/8 lmp qt) of the CVT fluid.
26. Remove the ATF changer hose and charging pipe, then install the overflow plug.
NOTE:
Perform this work quickly because CVT fluid leaks.
27. Lift down the vehicle.
28. Set the vehicle to READY in inspection mode 5 state. Refer to TM-8, "Precautions Concerning On-board Servicing of Hybrid Systems".
29. Start the engine.
30. While depressing the brake pedal, shift the selector lever to the entire position from “P” to “D”, and shift it to the “P” position.
NOTE:
Hold the lever at each position for 5 seconds.
31. Check that the CONSULT “Data Monitor” in “FLUID TEMP” is 35°C (95°F) to 45°C (113°F).
32. Lift up the vehicle.
33. Remove the overflow plug and confirm that the CVT fluid is drained from the overflow plug hole.
CAUTION:
Open the hood and start the engine. Remove CVT Fluid while engine is running. Do not close the hood when removing CVT Fluid.
NOTE:
If the CVT fluid is not drained, refer to “Adjustment” and refill with the CVT fluid.

34. When the flow of CVT fluid slows to a drip, tighten the overflow plug to the specified torque. Refer to TM-221, "Exploded View".
    CAUTION:
    Never reuse O-ring.
35. Lift down the vehicle.
36. Select “Data Monitor” in “TRANSMISSION” using CONSULT.
37. Select “CONFORM CVTF DETERIORTN”.
38. Select “Erase”.
39. Stop the engine.

Adjustment

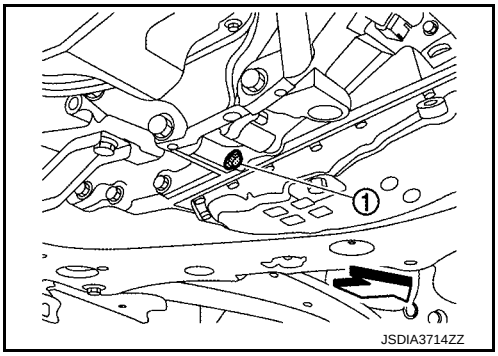
INFOID:0000000014630103

CVT fluid and fluid capacity : Refer to MA-11, "Fluids and Lubricants".

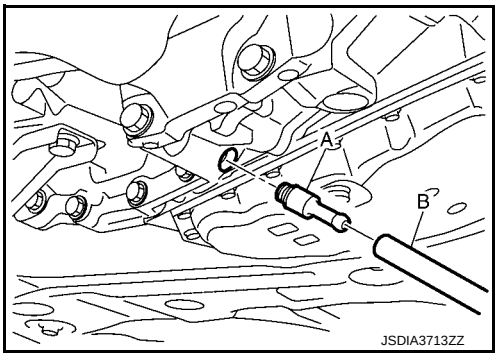
CAUTION:
- **During adjustment of the CVT fluid level, check CONSULT so that the oil temperature may be maintained from 35 to 45°C (95 to 113°F).**
- **Maintain specified engine idle speed during CVT fluid level adjustment. Refer to EC-596, "Idle Speed".**
- **Use caution when looking into the drain 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. Set the vehicle to READY in inspection mode 5 state. Refer to TM-8, "Precautions Concerning On-board Servicing of Hybrid Systems".
3. Start the engine.
4. 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.
5. While depressing the brake pedal, shift the selector lever to the entire position from “P” to “D”, and shift it to the “P” position.
   NOTE:
   Hold the lever at each position for 5 seconds.
6. Lift up the vehicle.
7. Check that there is no CVT fluid leakage.
8. Remove the overflow plug ① from front case.

⇦ : Vehicle front



9. Install the charging pipe set (KV311039S0) (A) into the overflow plug hole.
   CAUTION:
   Tighten the charging pipe by hand.
10. 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.
11. Fill approximately 0.5 liter (1/2 US qt, 1/2 lmp qt) of the CVT fluid.



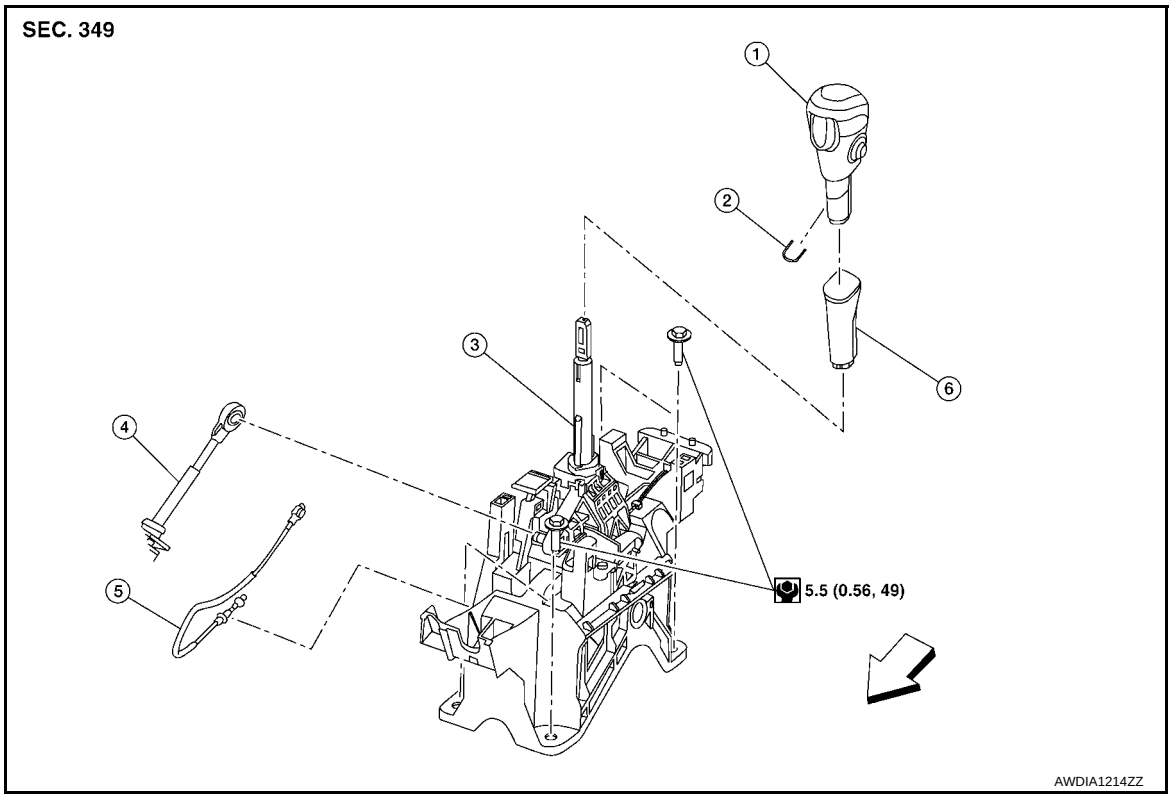
12. Remove the ATF changer hose from the charging pipe, and check that the CVT fluid drains out from the charging pipe. If it does not drain out, perform charging again.
CAUTION:
Open the hood and start the engine. Remove CVT Fluid while engine is running. Do not close the hood when removing CVT Fluid.
13. When the flow of CVT fluid slows to a drip, remove the charging pipe from the front case.
14. Tighten the overflow plug to the specified torque. Refer to TM-221, "Exploded View".
CAUTION:
Never reuse O-ring.
15. Lift down the vehicle.
16. Stop the engine.

REMOVAL AND INSTALLATION

CVT SHIFT SELECTOR

Exploded View

INFOID:0000000014630104



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

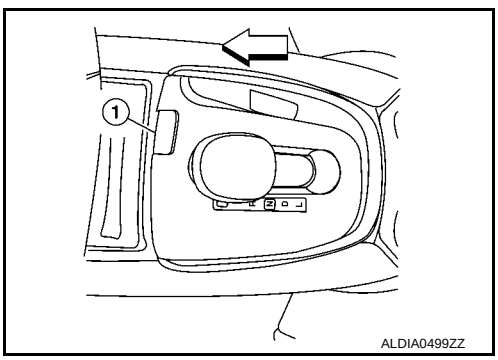
Removal and Installation

INFOID:0000000014904117

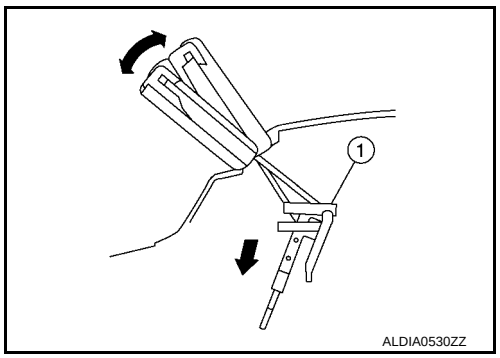
REMOVAL

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



- 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.

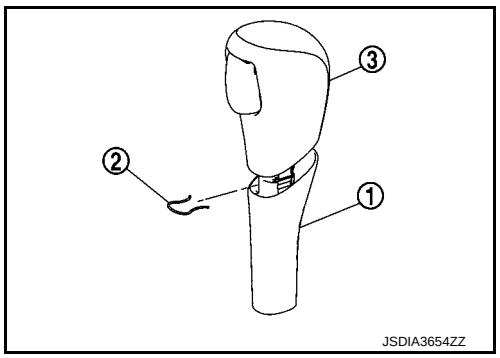


3. Remove the shift selector handle with the following procedure.

a. Slide the selector lever handle cover (1) down.
CAUTION:
Do not damage the knob cover.

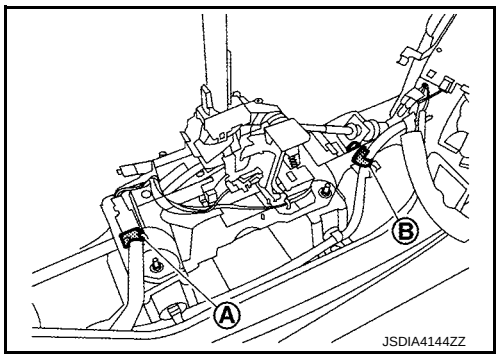
b. Pull out the lock pin (2) from the selector lever handle (3).

c. Pull the selector lever handle and the selector lever handle cover upwards to remove them.

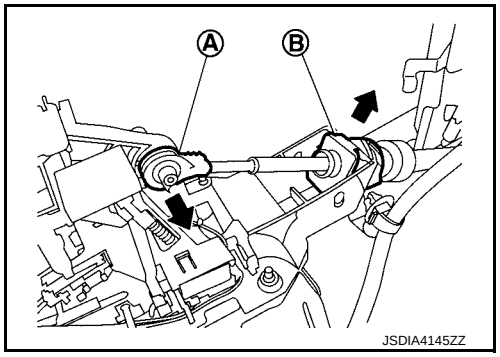


4. Remove the center console assembly. Refer to IP-18, "Removal and Installation".
5. Shift the selector lever to “P” position.

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



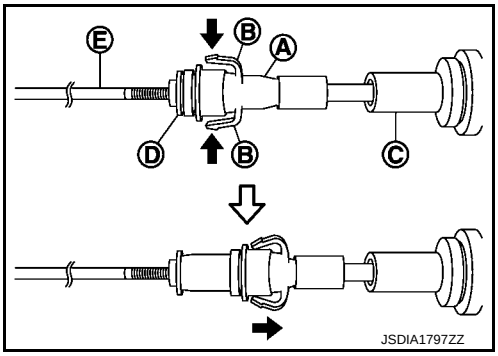
7. Disconnect the tip (A) of control cable and remove socket (B) from the shift selector assembly.



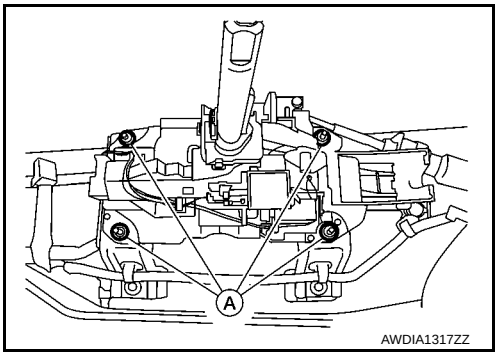
8. Press the pawls (B) of the key interlock cable slider (A) while sliding it in the direction of the casing cap (C), and separate the adjusting holder (D) and slider (A) (if equipped).

   (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.



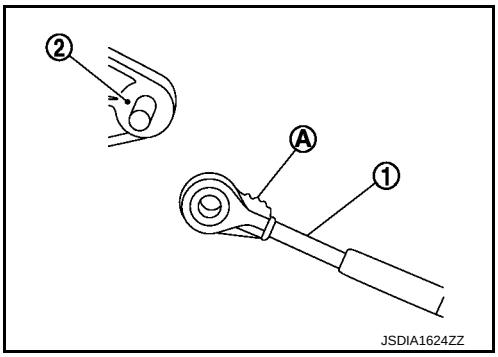
INSTALLATION

Installation is in the reverse order of removal.

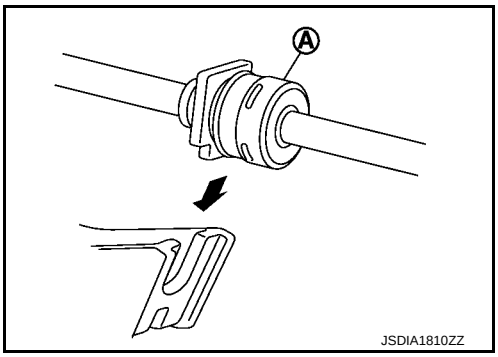
Shift Selector

- 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.



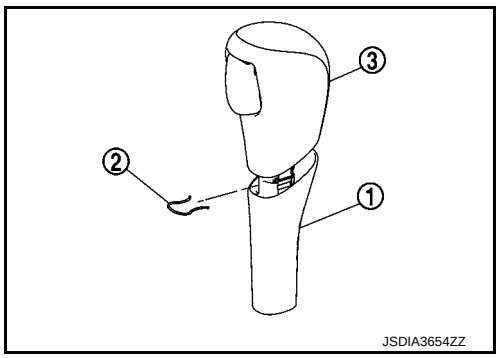
2. Install the socket (A) onto the shift selector assembly.
   CAUTION:
   - **Place the socket onto the shift selector assembly, then fasten it in place from above.**
   - **Check that the pulling on the socket does not disconnect it.**



Shift Selector Handle

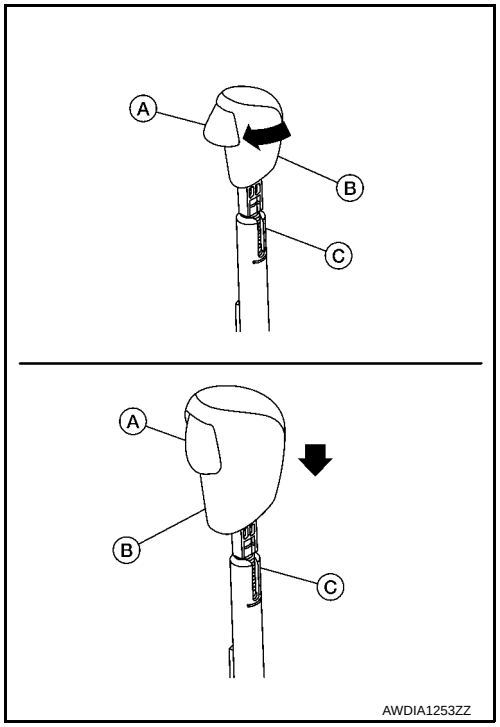
- Follow the procedure below and place the shift selector handle onto the shift selector assembly.

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.

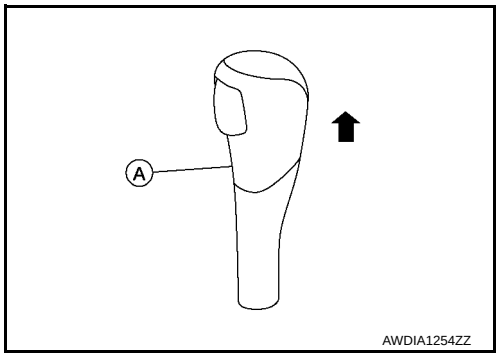


4. Pull and hold the shift selector handle button (A) in the direction shown (⬅) using a suitable tool and insert shift selector handle (B) into the shift selector assembly (C) until a slight touch is felt.
5. Release shift selector handle button (A) and continue to push down (⬅) on shift selector handle (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:0000000014904129

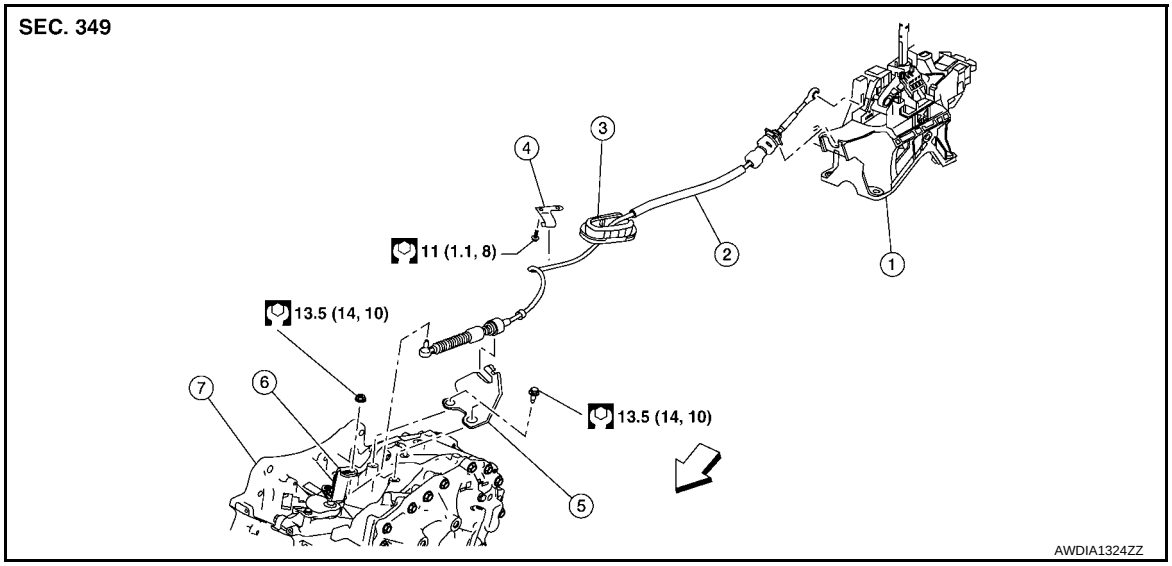
INSPECTION AFTER INSTALLATION

- Check the shift selector position. Refer to TM-99, "Inspection".
- Check that shift lock can be forcible release. Refer to TM-33, "SHIFT LOCK SYSTEM : System Description".

CONTROL CABLE

Exploded View

INFOID:0000000014904215



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

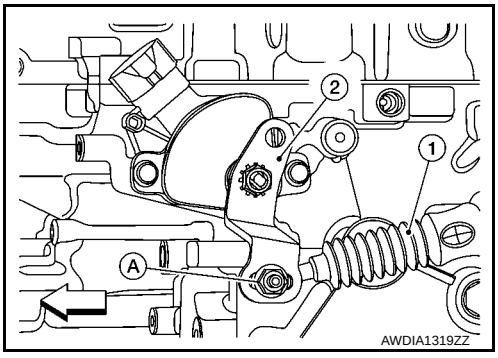
INFOID:0000000014905817

CAUTION:
Always apply the parking brake before performing removal and installation.

REMOVAL

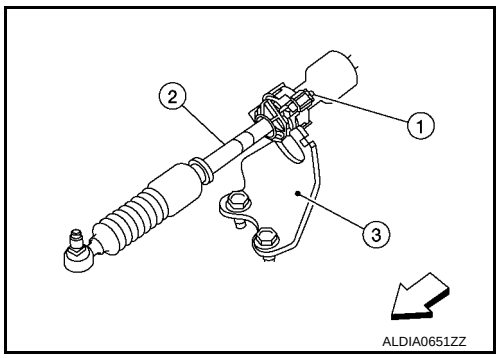
1. Apply the parking brake.
   CAUTION:
   Make sure the vehicle cannot move with the parking brake applied.
2. Remove battery tray. Refer to PG-129, "Removal and Installation (Battery Tray)".
3. Remove the control cable nut (A) and remove the control cable (1) from the manual lever (2).

⇦ : Front



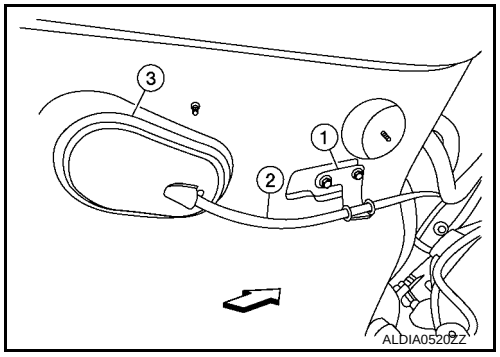
4. Remove the control cable (1) from bracket (2).

⇦ : Front

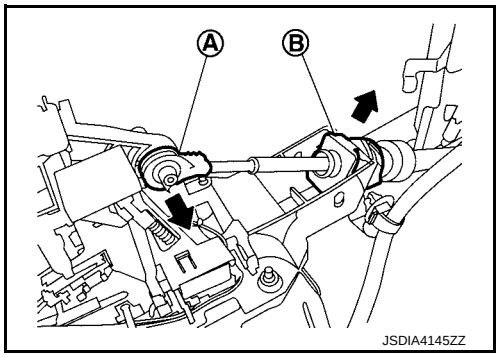


5. Remove the control cable (2) from bracket (1).
6. Remove retainer grommet (3) by pushing upward.

⇦ : Front



7. Remove the center console assembly. Refer to IP-18, "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 (➡).



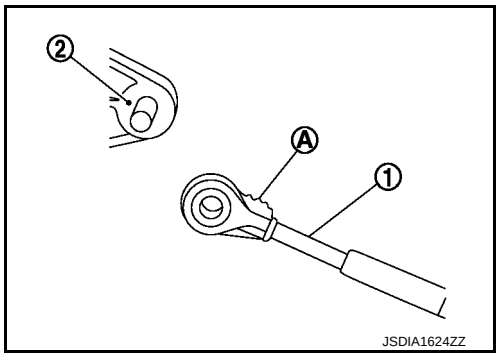
9. Remove the control cable.

INSTALLATION

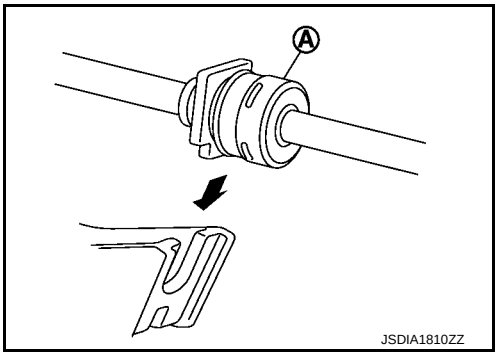
Installation is in the reverse order of removal.

• Pay attention to the following when connecting the control cable to the shift selector assembly.

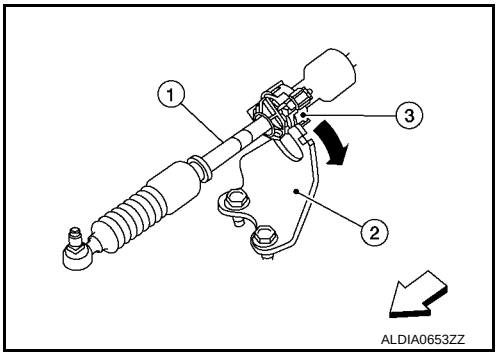
1. When connecting the control cable (1) to the shift selector assembly (2), face the grooved surface of the rib (A) up and insert the control cable until it stops.
   NOTE:
   Apply multi-purpose grease to control cable eye before installation.



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

INFOID:0000000014905818

ADJUSTMENT AFTER INSTALLATION

Adjust the CVT position. Refer to TM-99, "Inspection".

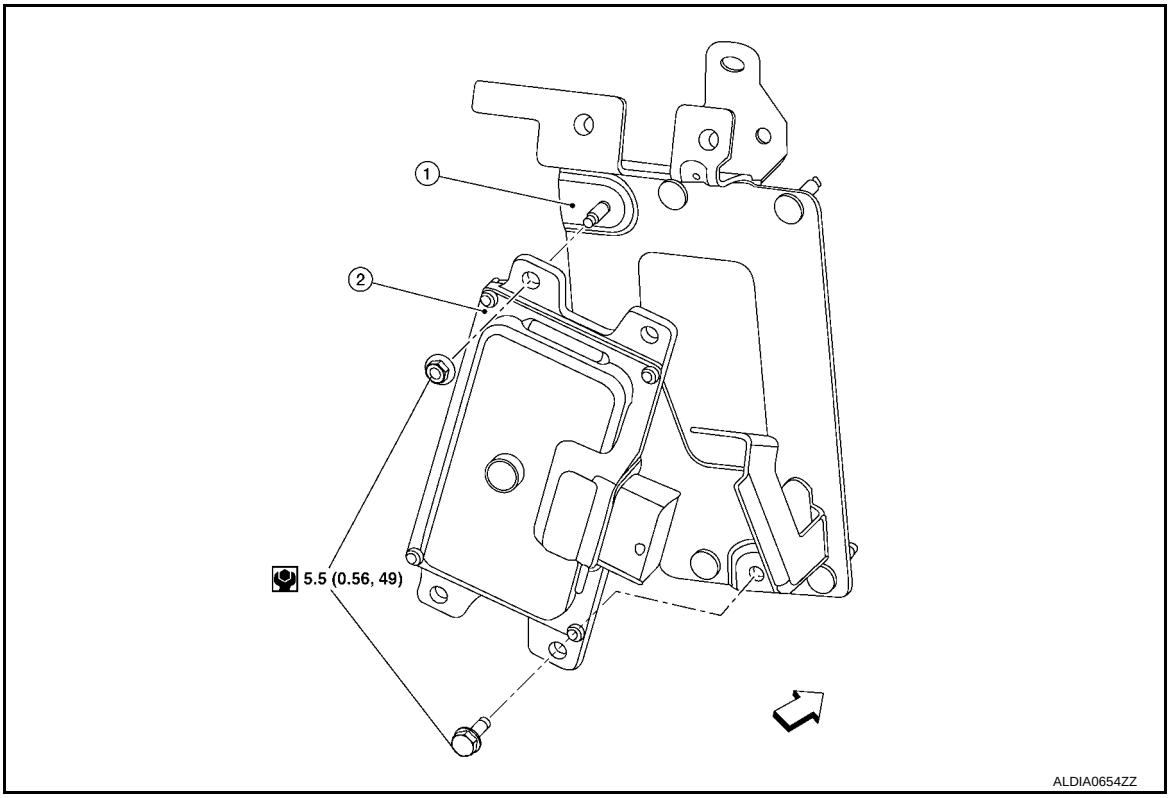
INSPECTION AFTER ADJUSTMENT

Check the CVT shift selector position after the adjustment. Refer to TM-99, "Inspection".

TCM

Exploded View

INFOID:0000000014905820



1. Bracket
2. TCM

⇦ : Front

Removal and Installation

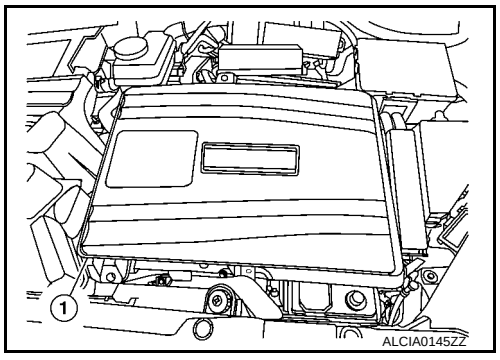
INFOID:0000000014905821

CAUTION:

- **Before replacing TCM, perform "ADDITIONAL SERVICES WHEN REPLACING TCM". Refer to TM-93, "Description".**
- **Before replacing TCM and transaxle assembly as a set, perform "ADDITIONAL SERVICES WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY". Refer to TM-95, "Description".**
- **When replacing TCM, note the "CVTF DETERIORATION DATE" value displayed on CONSULT "CONFORM CVTF DETERIORATION" in MAINTENANCE BOOKLET, before start the operation.**

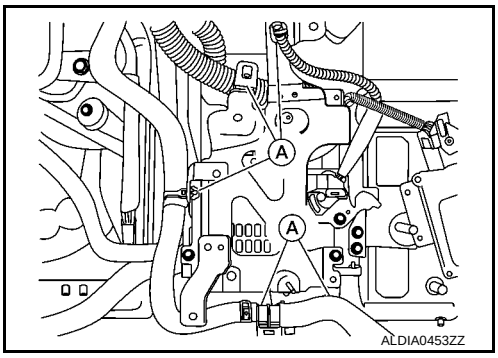
REMOVAL

1. Remove traction motor inverter cover (1).



2. Remove the front air duct. Refer to EXT-49, "Exploded View".
3. Disconnect the negative battery terminal. Refer to PG-128, "Battery Disconnect".

4. Disconnect the TCM harness connector.
5. Disconnect harness clips (A).



6. Remove the TCM and bracket.
7. Separate the TCM from the bracket.

INSTALLATION

Installation is the reverse order of removal.

Adjustment

INFOID:0000000014905822

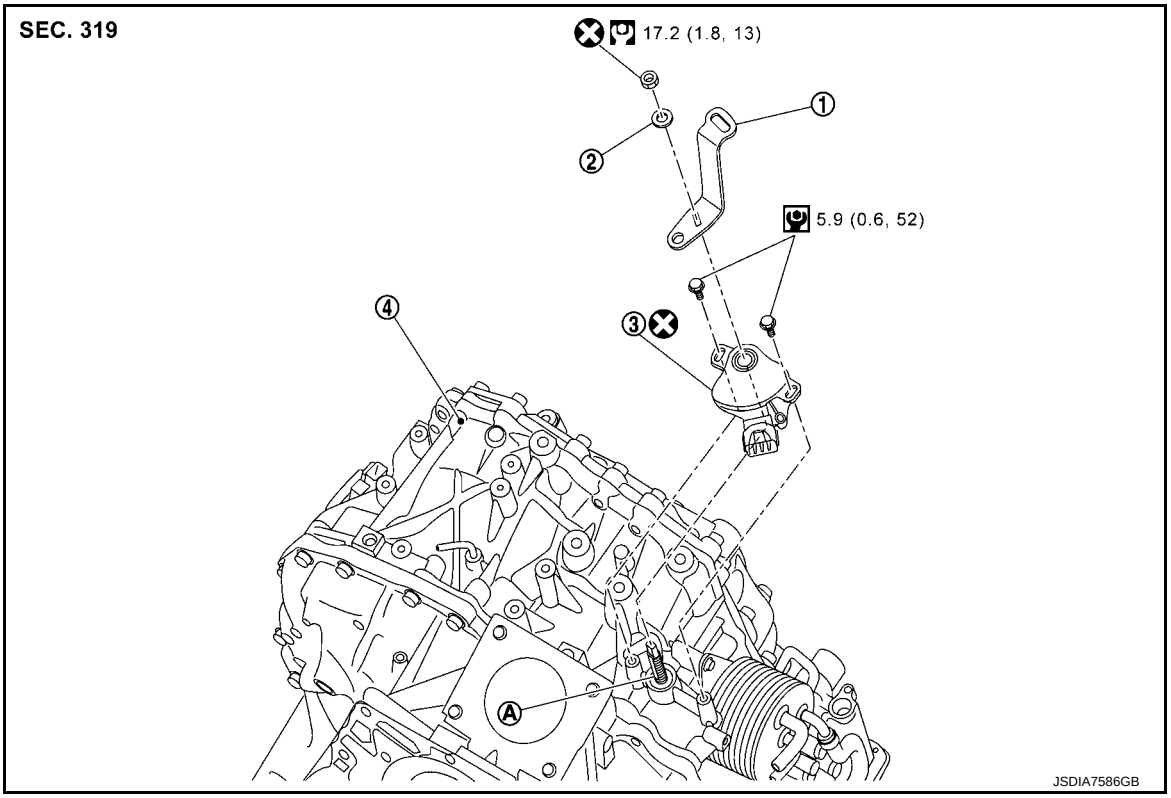
ADJUSTMENT AFTER INSTALLATION

- When replacing TCM, perform "ADDITIONAL SERVICE WHEN REPLACING TCM". Refer to TM-93, "Description".
- When replacing TCM and transaxle assembly simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY". Refer to TM-97, "Description".
- When replacing TCM, perform "RESOLVER OFFSET". Refer to TMS-56, "Description".

TRANSMISSION RANGE SWITCH

Exploded View

INFOID:0000000014968754



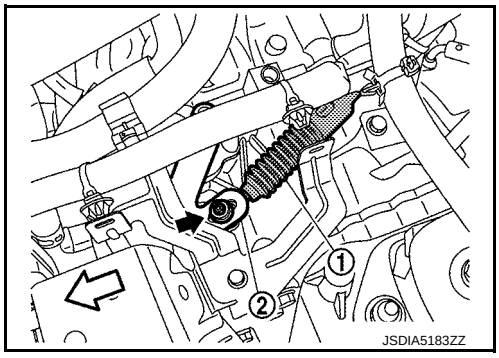
① Manual lever ② Lock washer ③ Transmission range switch
④ Transaxle assembly
Ⓐ Manual shaft
: Always replace after every disassembly.
: N·m (kg-m, ft-lb)
: N·m (kg-m, in-lb)

Removal and Installation

INFOID:0000000014968755

REMOVAL

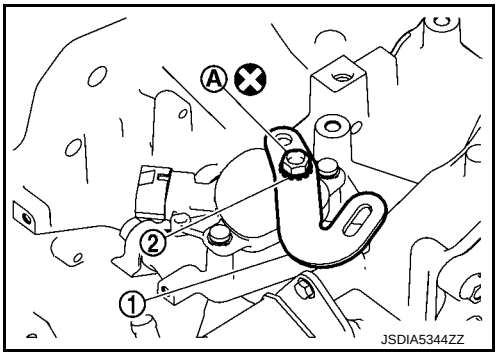
1. Shift the selector lever to P position.
2. Remove CVT fluid charging pipe.
3. Remove the control cable installation nut (⬅), and then remove control cable ① from the manual lever ②.



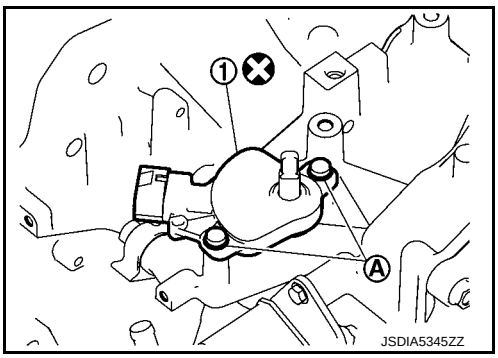
⇦ : Vehicle front

4. Remove transmission range switch connector.

5. Remove manual lever mounting nut Ⓐ, manual lever ①, and lock washer ② from manual shaft.



6. Remove transmission range switch mounting bolts Ⓐ and remove transmission range switch ① from transaxle assembly.

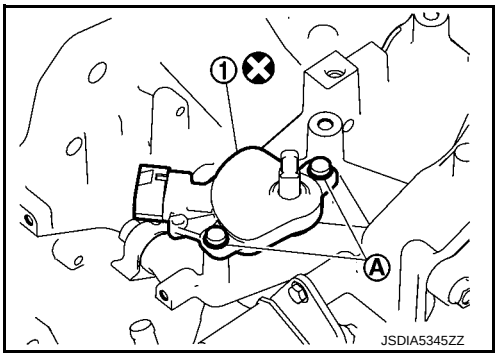


INSTALLATION

Note the followings and install in the reverse order of removal.

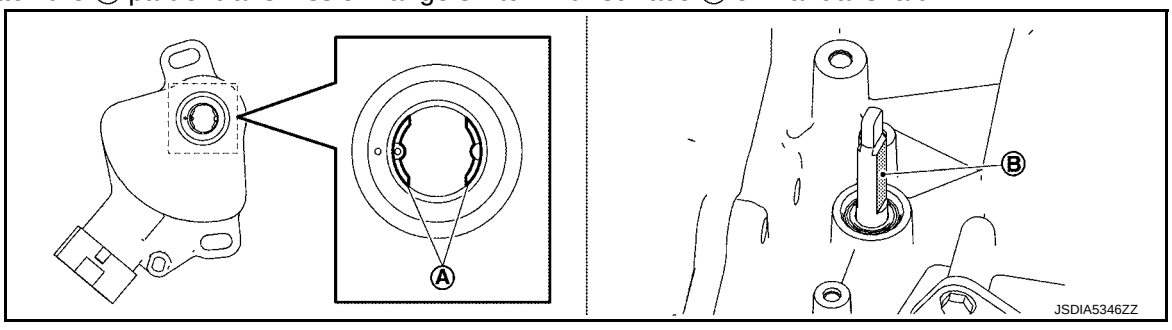
- Install transmission range switch to transaxle assembly according to the following procedures.

1. Install transmission range switch ① to transaxle assembly and temporarily tightening transmission range switch mounting bolts Ⓐ.

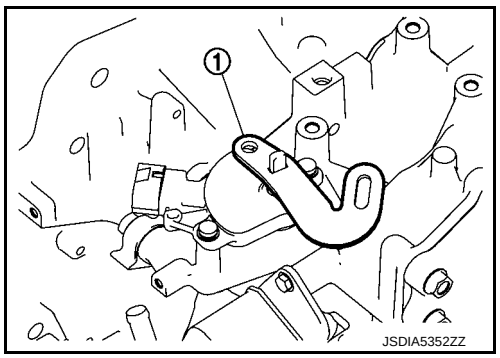


NOTE:

Match the Ⓐ part of transmission range switch with surface Ⓑ of manual shaft.



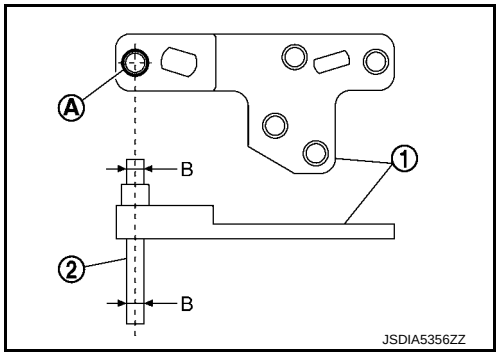
2. Install manual lever ① to manual shaft.
3. Move manual lever to N position.
4. Remove manual lever from manual shaft.



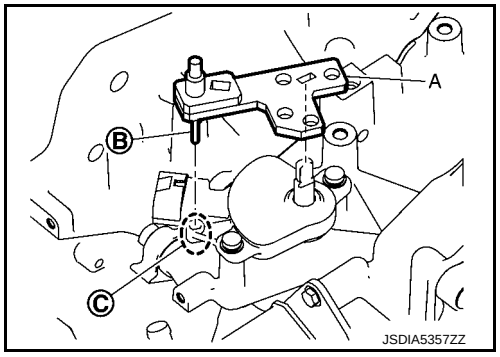
5. Assemble the unified transmission range switch adjuster (SST: KV381099S0) as shown in the figure.

① : Base plate
② : Pin “1”
Ⓐ : Pin attachment hole “A”

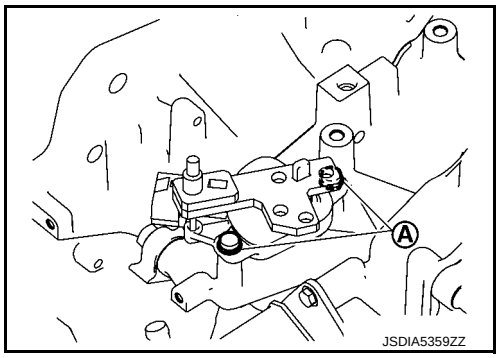
Pin diameter (B) : 5 mm (0.20 in) dia.



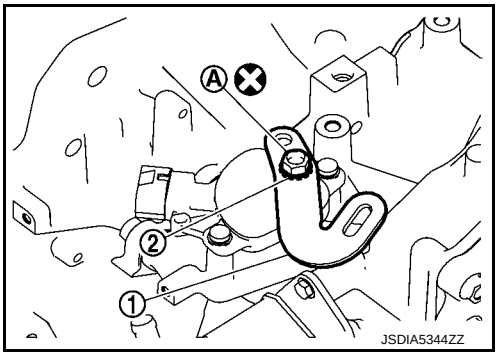
6. Set the unified transmission range switch adjuster (SST: KV381099S0) (A) to manual shaft and insert the pin Ⓑ to hole Ⓒ of transmission range switch.



7. Tighten transmission range switch mounting bolts Ⓐ to the specified torque.
8. Remove the unified transmission range switch adjuster (SST: KV381099S0).



9. Install manual lever ① and lock washer ② to manual shaft and tighten manual lever mounting nut Ⓐ to the specified torque.



Inspection

INFOID:0000000014968756

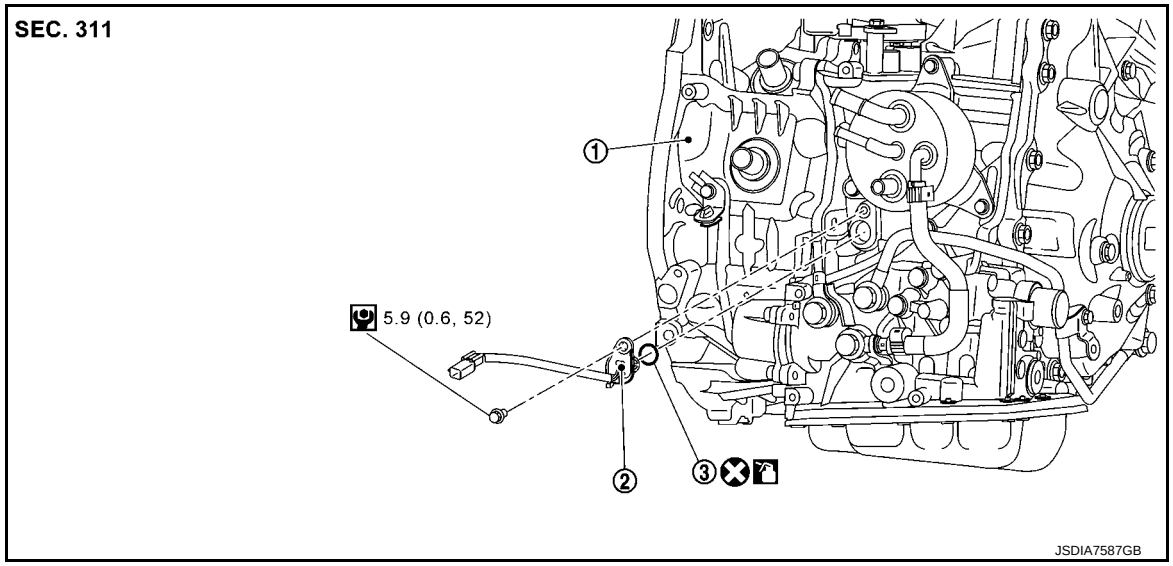
INSPECTION AFTER INSTALLATION

Check the CVT position. If a malfunction is found, adjust the CVT position. Refer to TM-99, "Inspection".

CLUTCH 2 TEMPERATURE SENSOR

Exploded View

INFOID:0000000014968757



① Transaxle assembly
② Clutch 2 temperature sensor
③ O-ring
: Always replace after every disassembly
: N·m(kg-m, in-lb)
: Apply CVT fluid

Removal and Installation

INFOID:0000000014968758

REMOVAL

1. Turn ignition switch OFF.
2. Remove the clutch 2 temperature sensor connector clip and remove the clutch 2 temperature sensor connector.
3. Remove the clutch 2 temperature sensor mounting bolt and Remove the clutch 2 temperature sensor from transaxle assembly.
4. Remove the O-ring from clutch 2 temperature sensor.

INSTALLATION

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

CAUTION:

- **Never reuse O-ring.**
- **Apply CVT fluid to the O-ring.**
- **After connecting disconnected clutch 2 temperature sensor, perform the inspection after installation.**

Inspection and Adjustment

INFOID:0000000014968759

INSPECTION AFTER INSTALLATION

Start the engine and check visually that there is no leakage of CVT fluid.

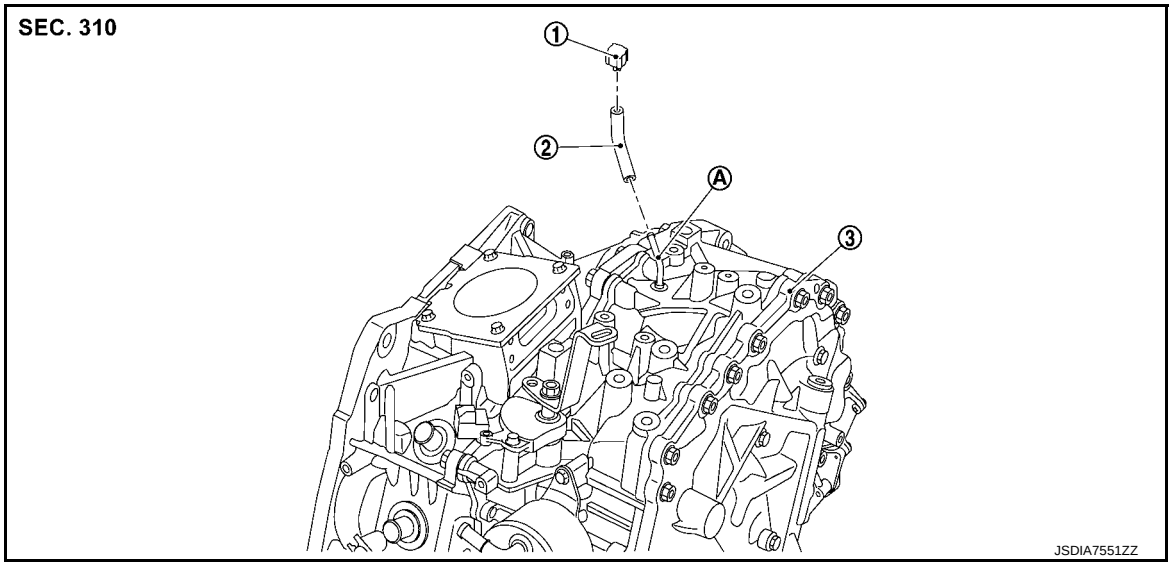
ADJUSTMENT AFTER INSTALLATION

Adjust the CVT fluid level. Refer to TM-204, "Adjustment".

AIR BREATHER HOSE

Exploded View

INFOID:0000000014630113



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

A. Air breather tube

Removal and Installation

INFOID:0000000014630114

REMOVAL

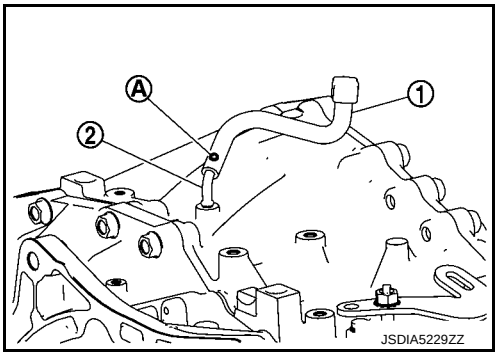
1. Remove air breather hose from the transaxle assembly.

INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

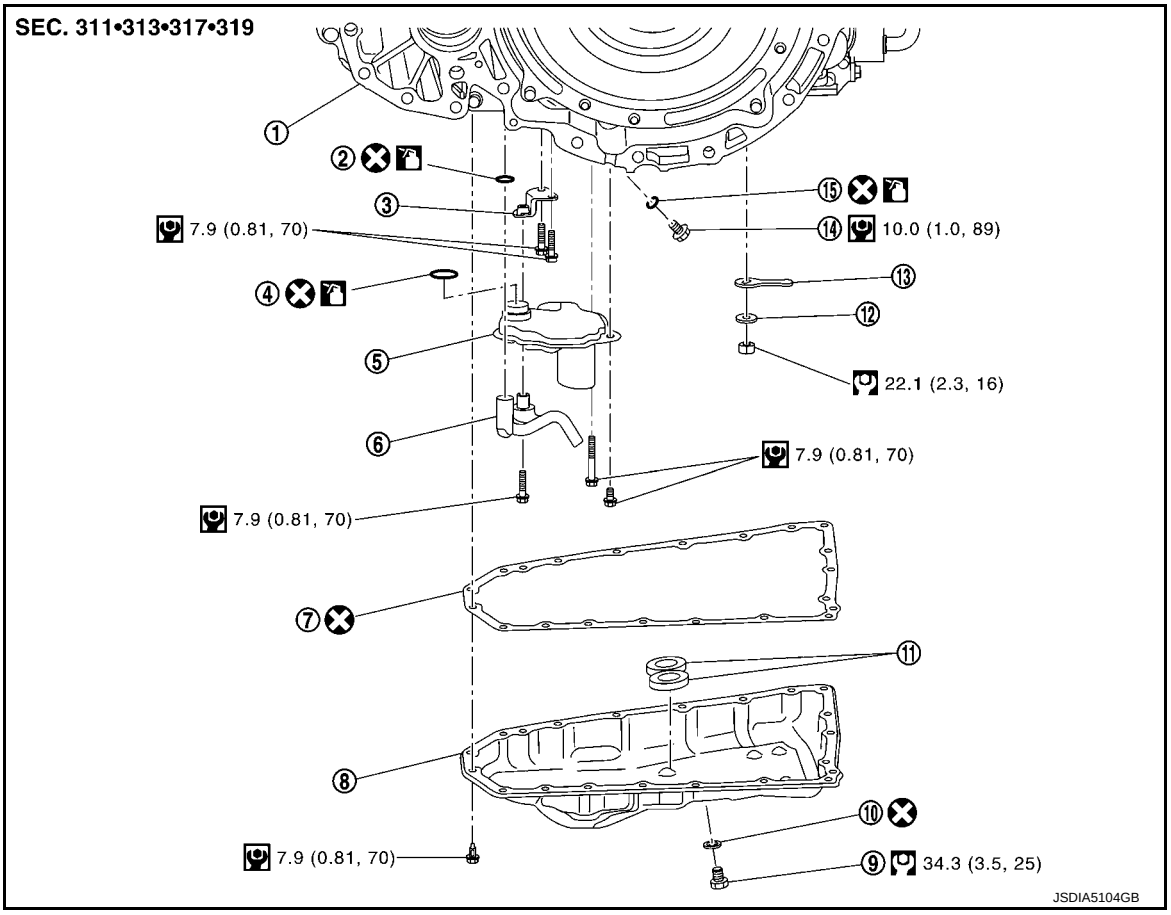
- **Check that air breather hose is not collapsed or blocked due to folding or bending when installed.**
- **Insert air breather hose to the end of the air breather cap.**
- **Insert air breather hose (1) to air breather tube (2) all the way to the curve of the tube.**
- **Insert air breather hose to air breather tube so that the paint mark (A) is facing upward.**



OIL PAN, OIL STRAINER, MANUAL PLATE

Exploded View

INFOID:0000000014630115



1.	Transaxle assembly	2.	O-ring	3.	Bracket
4.	O-ring	5.	Oil strainer	6.	Tube assembly
7.	Oil pan gasket	8.	Oil pan	9.	Drain plug
10.	Drain plug gasket	11.	Magnet	12.	Washer
13	Manual plate	14.	Overflow plug	15.	O-ring

Removal and Installation

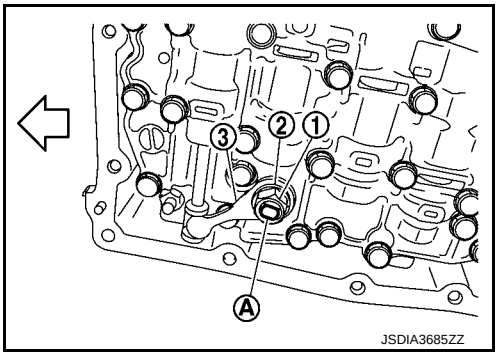
INFOID:0000000014630116

REMOVAL

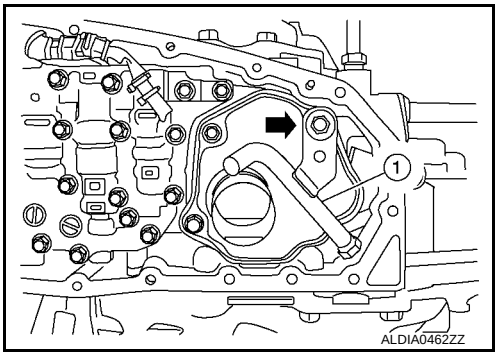
1. Remove front under cover. Refer to EXT-49, "ENGINE UNDER COVER : Removal and Installation".
2. Remove drain plug and drain the CVT fluid.
3. Remove drain plug gasket.
   CAUTION:
   Do not reuse drain plug gasket.
4. Remove the oil pan bolts, the oil pan and oil pan gasket.
   CAUTION:
   Do not reuse oil pan gasket.
5. Remove the magnets from the oil pan.

6. Remove nut (1), spring washer (2) and manual plate (3) from manual shaft (A).

⇦ : Front

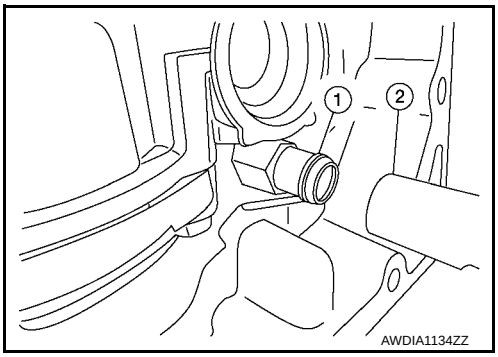


7. Remove the bolt (➡) and tube assembly (1).

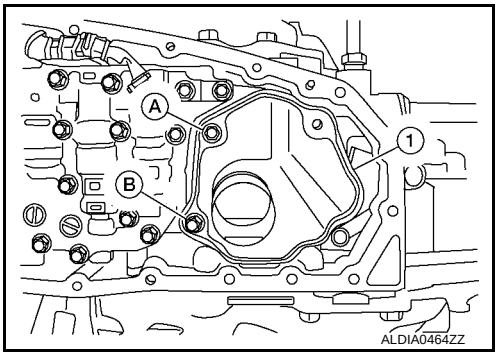


8. Remove O-ring (1).
CAUTION:
Do not reuse O-ring.

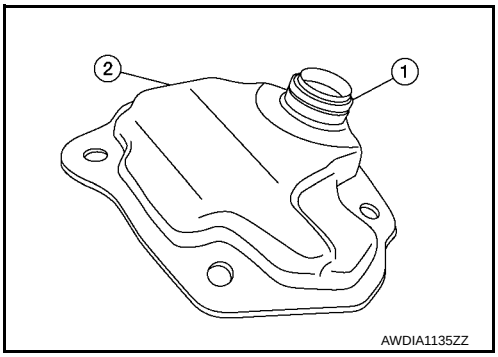
(2) : Tube assembly



9. Remove oil strainer bolt (A) and (B) and the oil strainer (1).

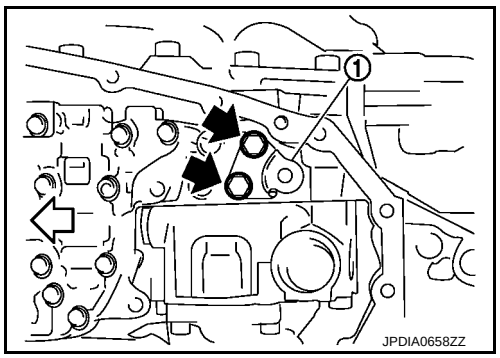


10. Remove O-ring (1) from oil strainer (2).
CAUTION:
Do not reuse O-ring.



11. Remove the bolts (➡) and bracket (1).

⇦ : Front

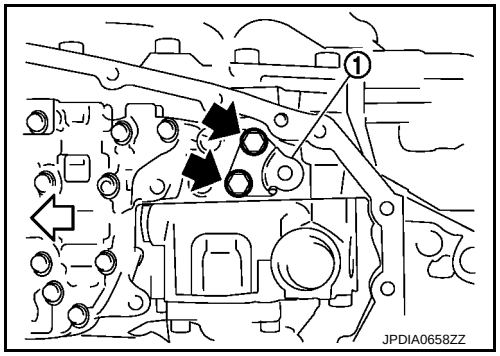


INSTALLATION

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

1. Install the bracket (1) and bolts (➡.).

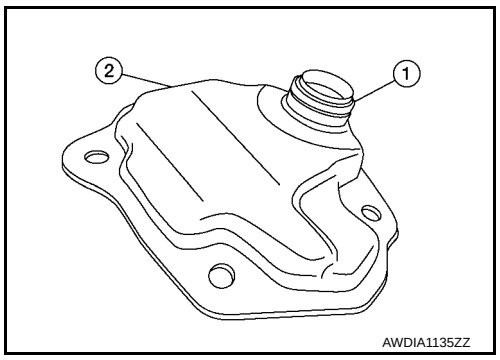
⇦ : Front



2. Install O-ring (1) to oil strainer (2).

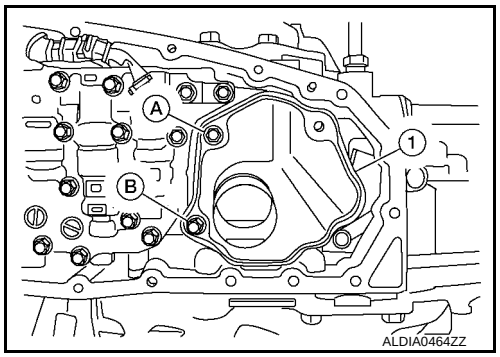
CAUTION:

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



3. Install oil strainer assembly (1) using the oil strainer bolt (A) and (B).

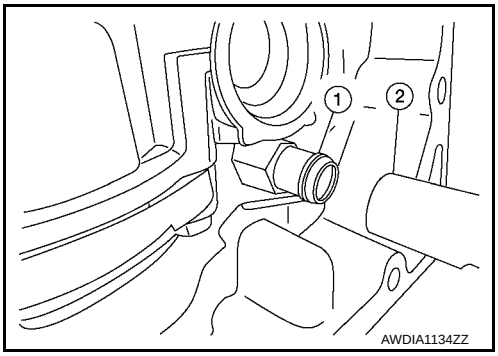
Bolt	Bolt length mm (in)
(A)	12 (0.47)
(B)	44 (1.73)



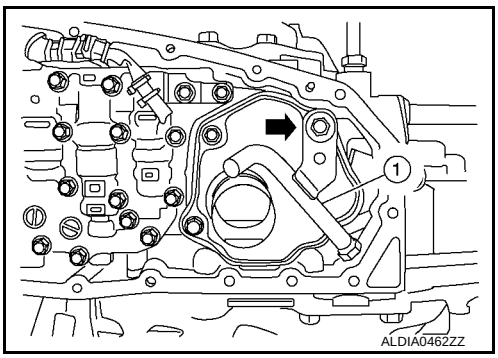
4. Install O-ring (1).

(2) : Tube assembly

CAUTION:
- **Do not reuse O-ring.**
- **Apply CVT fluid NS-3 to O-ring**

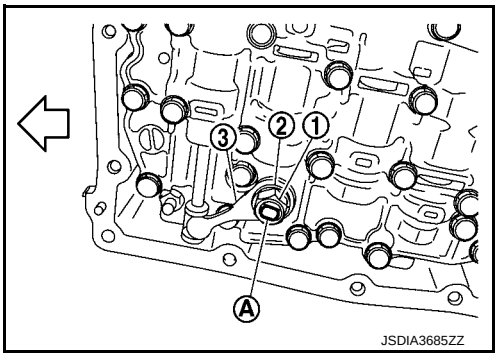


5. Install tube assembly (1) and the bolt (➡).
NOTE:
Remove the bracket and adjust the position again if the bolt hole positions are not aligned.



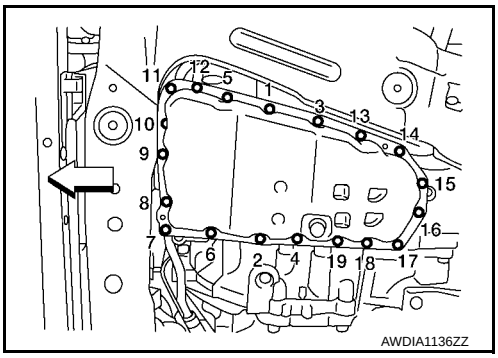
6. Install nut (1), spring washer (2) and manual plate (3) to manual shaft (A).

⇦ : Front



7. Install the magnet in the oil pan.
CAUTION:
Completely clean the iron powder from the magnet area of oil pan and the magnets.
8. Install the oil pan gasket to the oil pan.
CAUTION:
- **Do not reuse oil pan gasket.**
- **Completely wipe out any moisture, oil, and old gasket from the oil pan gasket surface and bolt hole of oil pan and transaxle case.**
9. Install the oil pan assembly to the transaxle case, then temporarily tighten the oil pan bolts.
10. Tighten the oil pan bolts in the order shown to the specified torque.

⇦ : Front



11. Tighten the oil pan bolts again clockwise from (1) shown to the specified torque.
12. Install drain plug gasket and drain plug.
CAUTION:
Do not reuse drain plug gasket.
13. Refill with CVT fluid. Refer to TM-202, "Replacement".
14. Install front under cover. Refer to EXT-49, "ENGINE UNDER COVER : Removal and Installation".

Inspection and Adjustment

INFOID:0000000014630117

INSPECTION AFTER REMOVAL

Check oil pan for foreign material.

- If a large amount of worn material is found, clutch plate may be worn.
- If iron powder is found, bearings, gears, or clutch plates may be worn.
- If aluminum powder is found, bushing may be worn, or chips or burrs of aluminum casting parts may enter.

Check points where wear is found in all cases.

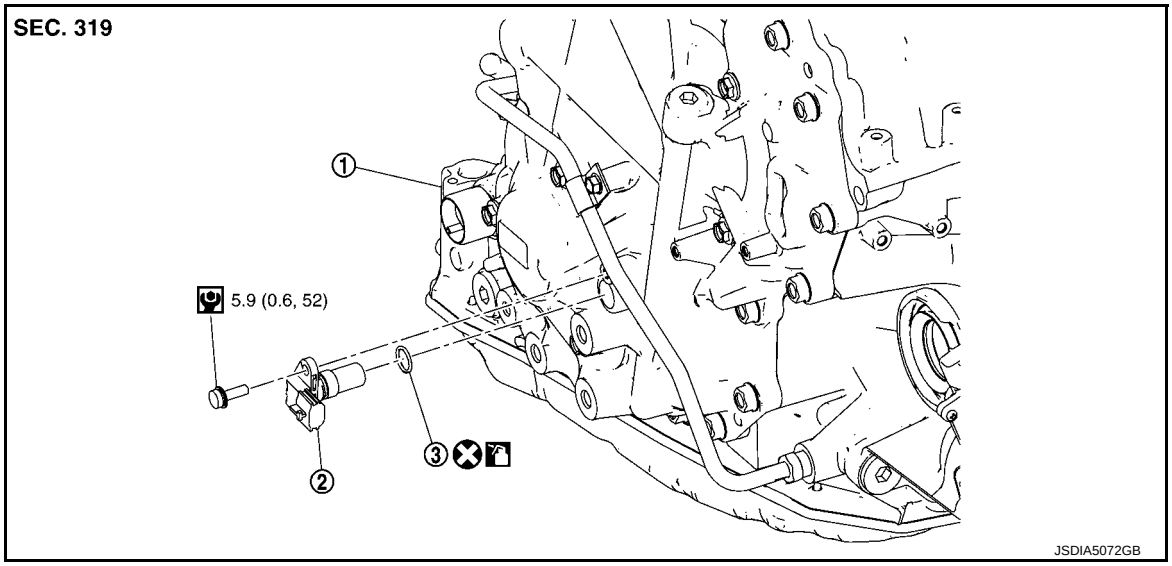
INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to TM-202, "Inspection".

PRIMARY SPEED SENSOR

Exploded View

INFOID:0000000014630118



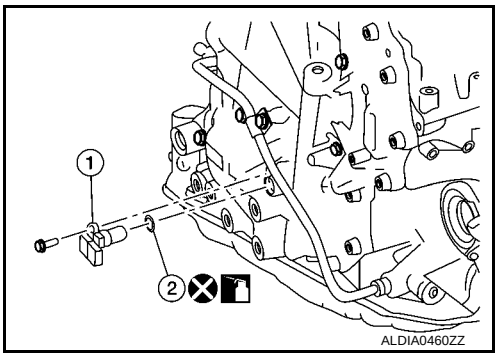
1. Transaxle assembly
2. Primary speed sensor
3. O-ring

Removal and Installation

INFOID:0000000014630119

REMOVAL

1. Remove the fender protector side cover (LH). Refer to EXT-49, "ENGINE UNDER COVER : Removal and Installation".
2. Disconnect the harness connector from primary speed sensor (1).
3. Remove the bol and the primary speed sensor (1).
4. Remove the O-ring (2) from the primary speed sensor (1).
   CAUTION:
   Do not reuse O-ring.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- **Do not reuse O-ring.**
- **Apply Genuine NISSAN CVT Fluid to the O-ring.**

Inspection and Adjustment

INFOID:0000000014630120

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to TM-202, "Inspection".

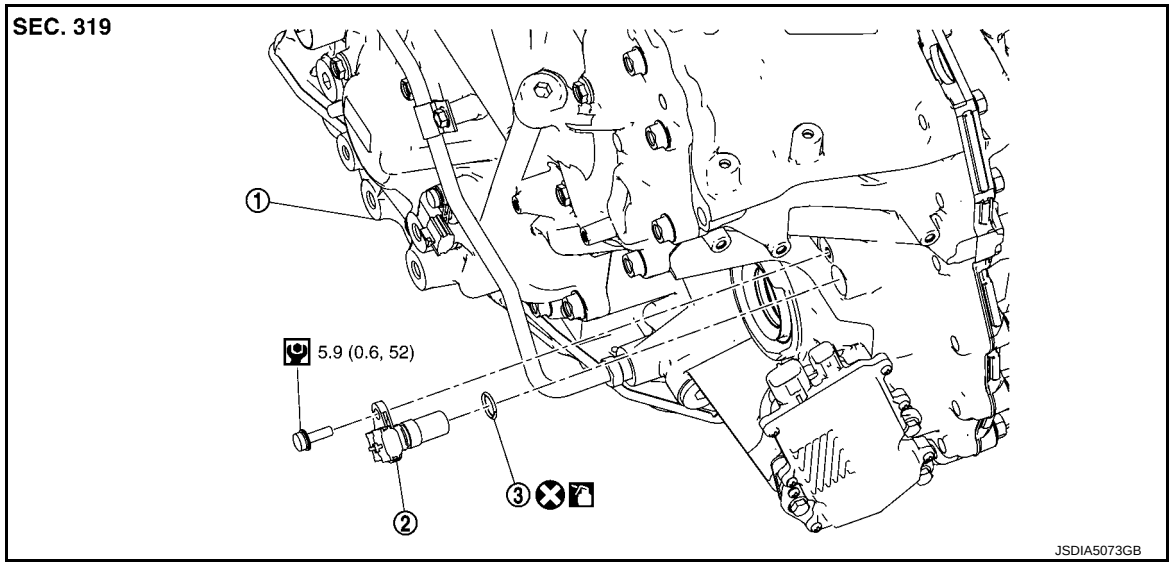
ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to TM-204, "Adjustment".

OUTPUT SPEED SENSOR

Exploded View

INFOID:0000000014630121



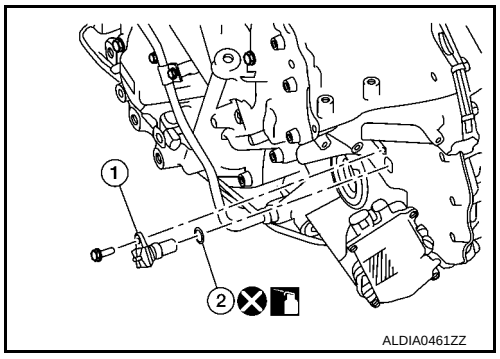
1. Transaxle assembly
2. Output speed sensor
3. O-ring

Removal and Installation

INFOID:0000000014630122

REMOVAL

1. Remove the air cleaner and air duct. Refer to EXT-49, "ENGINE UNDER COVER : Removal and Installation".
2. Disconnect the harness connector from output speed sensor (1).
3. Remove the bolt and the output speed sensor (1).
4. Remove the O-ring (2) from the output speed sensor (1).
   CAUTION:
   Do not reuse O-ring.



INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- **Do not reuse O-ring.**
- **Apply Genuine NISSAN CVT Fluid NS-3 to the O-ring.**

Inspection and Adjustment

INFOID:0000000014630123

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to TM-202, "Inspection".

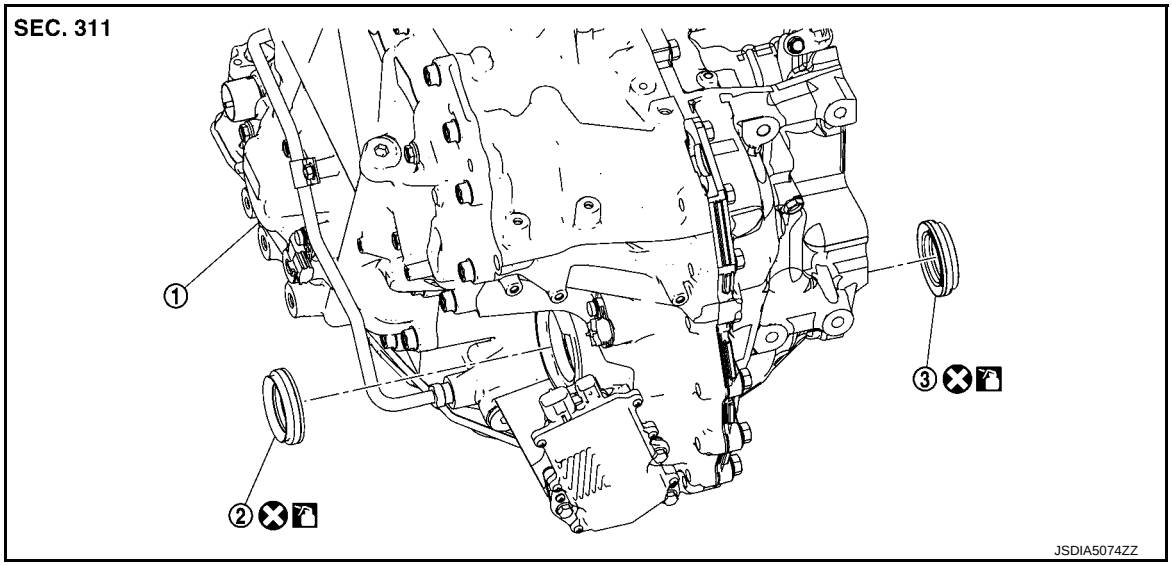
ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to TM-204, "Adjustment".

DIFFERENTIAL SIDE OIL SEAL

Exploded View

INFOID:0000000014630124



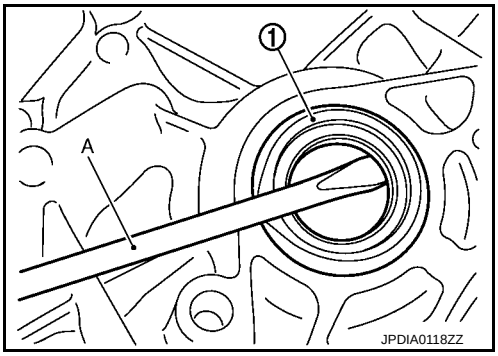
1. Transaxle assembly
2. Differential side oil seal (left side)
3. Differential side oil seal (right side) (FWD models only)

Removal and Installation

INFOID:0000000014630125

REMOVAL

1. Remove front drive shaft. Refer to FAX-19, "Removal and Installation (LH)" (LH) or FAX-22, "Removal and Installation (RH)" (RH) (FWD). Refer to FAX-56, "Removal and Installation (LH)" (LH) or FAX-59, "Removal and Installation (RH)" (RH) (AWD).
2. Using a suitable tool (A), remove the differential side oil seal (1).
   CAUTION:
   When removing the differential side oil seal, be careful not to damage the oil seal mounting surfaces of the transaxle case and front case.



INSTALLATION

Installation is in the reverse order of removal.

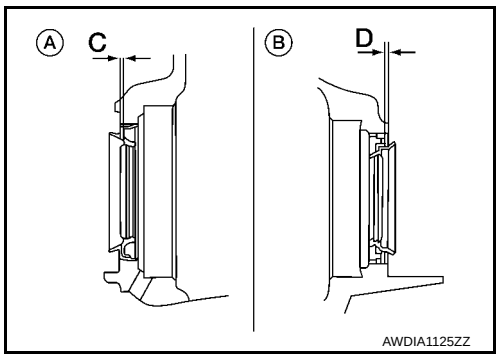
CAUTION:

- **Do not reuse differential side oil seal.**
- **Apply Genuine NISSAN CVT Fluid NS-3 to differential side oil seals.**
- **When inserting the drive shaft, use Tool.**

Tool number : KV38107900 (—)

Install each differential side oil seal evenly using Tool so that differential side oil seal protrudes by the dimension (C) and (D) respectfully.

(A) : Differential side oil seal (LH)
(B) : Differential side oil seal (RH)(FWD models only)



Dimension (C) : Height difference from case end surface is within 0 ± 0.5 mm (0.00 ± 0.020 in).

Dimension (D) : Height difference from case end surface is within 0 ± 0.5 mm (0.00 ± 0.020 in).

NOTE:

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

Drift to be used:

Location	Commercial Service Tools
Transaxle case side	Commercial service tool with outer dia. 56 mm (2.20 in) and inner dia. 50 mm (1.97 in)
Front case side	

Inspection and Adjustment

INFOID:0000000014630126

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to TM-202, "Inspection".

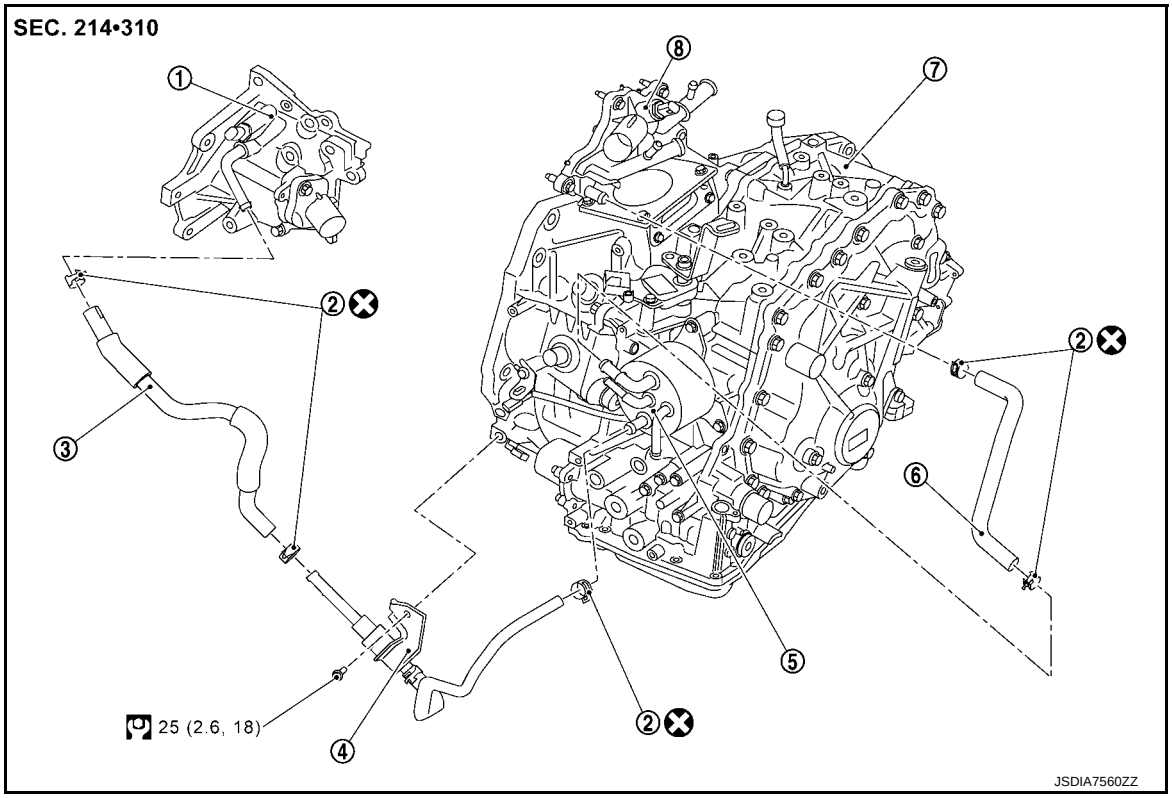
ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to TM-204, "Adjustment".

WATER HOSE

Exploded View

INFOID:0000000014630127



1. Thermostat housing
2. Hose clamp
3. CVT water house A
4. Heater thermostat assembly
5. CVT oil warmer
6. CVT water hose B
7. Transaxle assembly
8. Wateroutlet

Removal and Installation

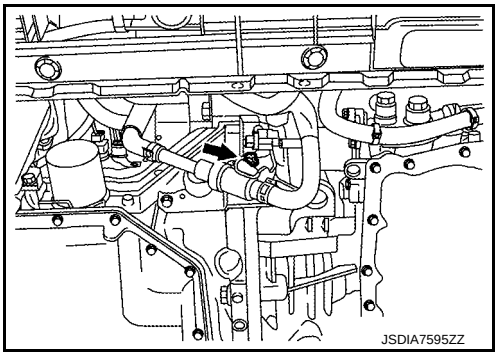
INFOID:0000000014630128

WARNING:
Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.
NOTE:
When removing components such as hoses, tubes/lines, etc., cap or plug opening to prevent fluid from spilling.

REMOVAL

1. Drain engine coolant from radiator. Refer to CO-10, "Draining".
   CAUTION:
   - **Perform this step when the engine is cold.**
   - **Do not spill engine coolant on the drive belt.**
2. Remove the ECM, TCM and bracket. Refer to TM-213, "Removal and Installation".
3. Remove front air duct. Refer to EM-29, "Exploded View".
4. Remove front under cover. Refer to EXT-49, "ENGINE UNDER COVER : Removal and Installation".

5. Remove heater thermostat assembly mounting bolt (⬅).



6. Remove hose clamps, and remove CVT water hose A.
7. Remove hose clamps, and remove CVT water hose B.

INSTALLATION

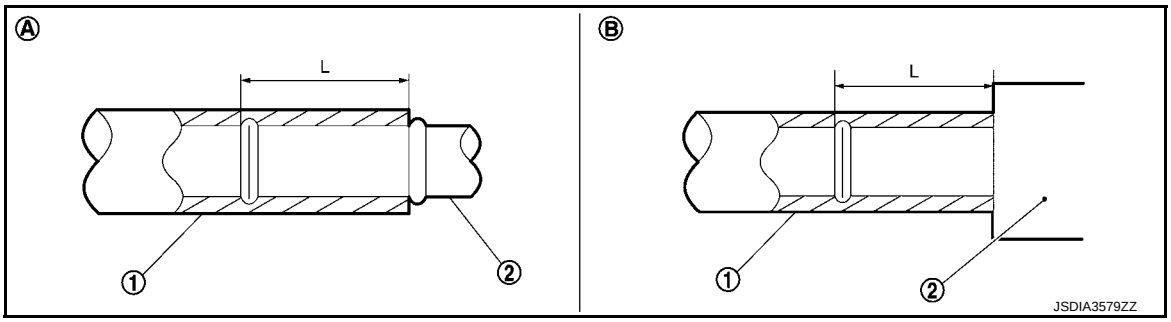
Installation is in the reverse order of removal.

CAUTION:

- **Do not reuse hose clip.**
- **Do not reuse hose clamp.**
- **After disconnecting water hoses, check for leaks.**

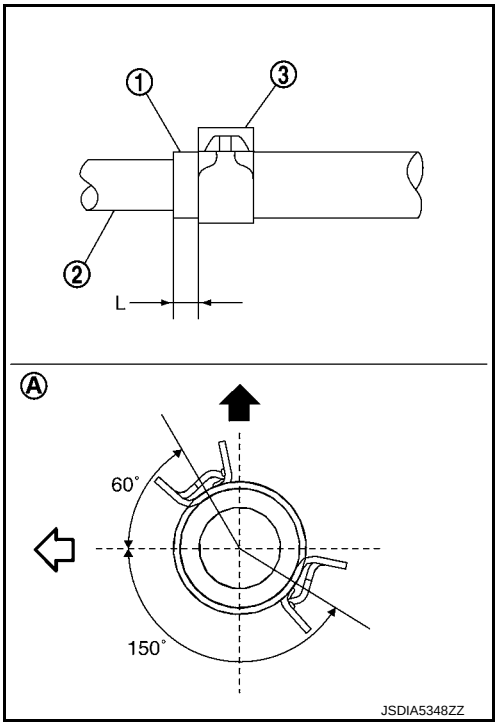
Refer to the following when installing water hoses.

Water hose (1)	Installation side tube (2)	Direction of paint mark	Hose insertion depth (L)
CVT water hose A	Thermostat housing	Upward	(A): Hose end reaches the 2-stage bulge
	Heater thermostat assembly	Downward	
Heater thermostat assembly	CVT oil warmer	Left	(B):Hose end reaches the end of tube.
CVT water hose B	CVT oil warmer	Frontward	(A): Hose end reaches the 2-stage bulge.
	Water outlet		



Refer to the following when installing hose clamps.

Hose (1)	Installation side tube (2)	Hose clamp (3)	
		Direction of tab	Clamping position (L)
CVT water hose A	Tthermostat housing	Upward	5 - 9 mm (0.20 - 0.35 in) from hose end
	Heater thermostat assembly	Downward	
Heater thermostat assembly	CVT oil warmer	Left	
CVT water hose B	CVT oil warmer	Front	5 - 7 mm(0.20 - 0.28 in) from hose end
	Water outlet	Install within the range from vehicle front to vehicle up. Refer to figure (A).	



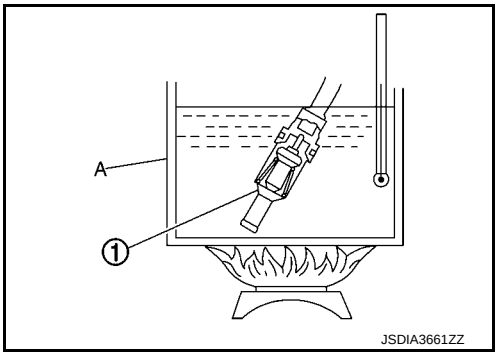
Inspection

INFOID:0000000014630129

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.

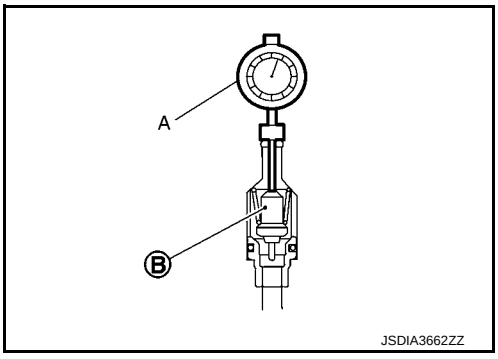


3. Quickly take the heater thermostat out of the hot water, measure the heater thermostat within 10 seconds.

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

Standard : Refer to TM-247, "Heater Thermostat".

4. If out of standard, replace heater thermostat.



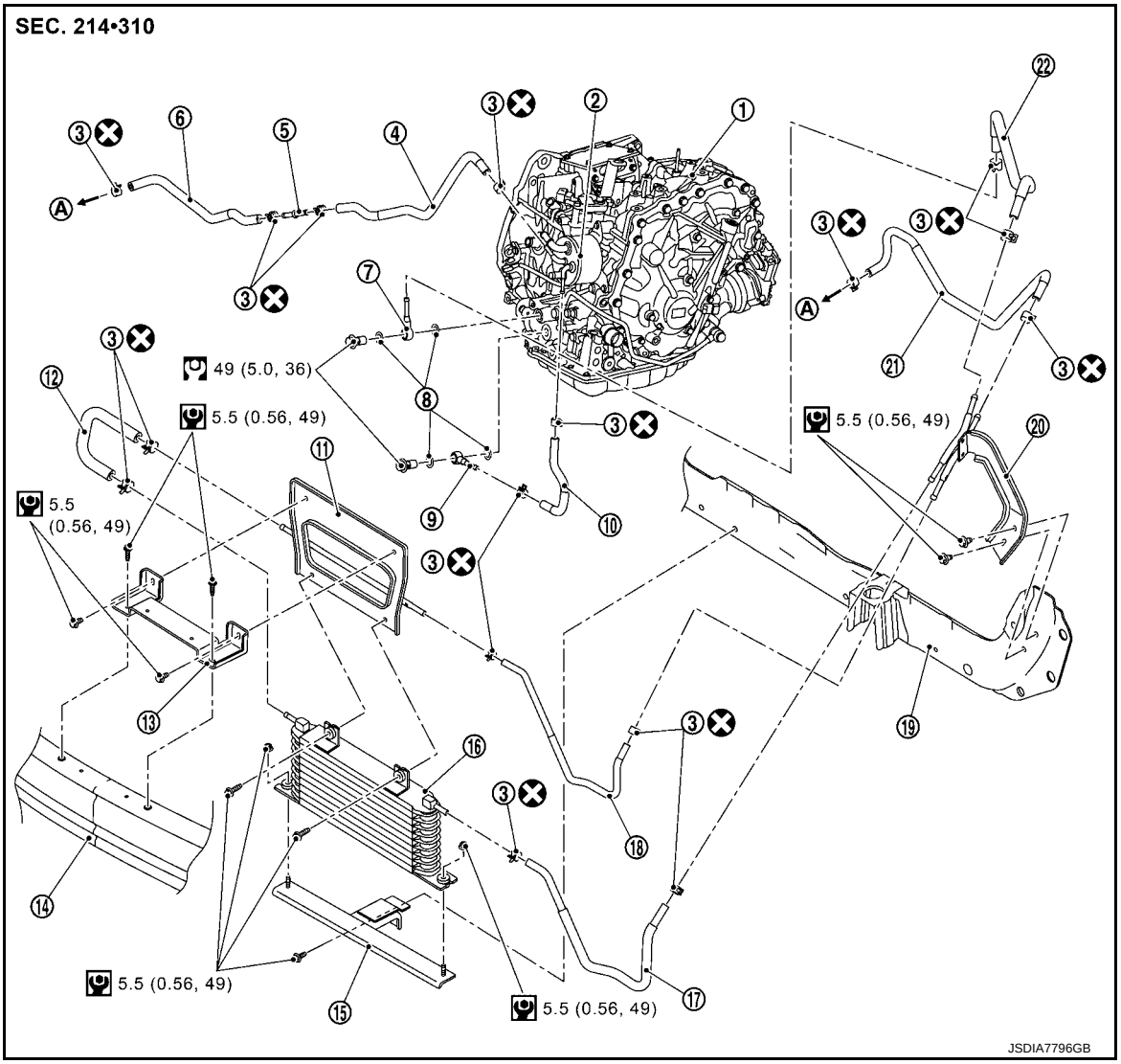
INSPECTION AFTER INSTALLATION

Start the engine and check visually that there is no leakage of engine coolant.

CVT FLUID COOLER SYSTEM

Exploded View

INFOID:0000000014906734



1.	Transaxle assembly	2.	CVT oil warmer	3.	Hose clamp
4.	Fluid cooler hose A	5.	Connector tube	6.	Fluid cooler hose B
7.	Fluid cooler tube A	8.	Copper washer	9.	Fluid cooler tube B
10.	Fluid cooler hose C	11.	Fluid cooler bracket (with tube)	12.	Fluid cooler hose D
13.	Bracket	14.	Bumper reinforcement	15.	Bracket
16.	CVT fluid cooler	17.	Fluid cooler hose E	18.	Fluid cooler hose F
19.	Bumper reinforcement lower	20	Fluid cooler tube assembly	21	Fluid cooler hose G
22.	Fluid cooler hose H				
(A)	To radiator				

Removal and Installation

INFOID:0000000014906740

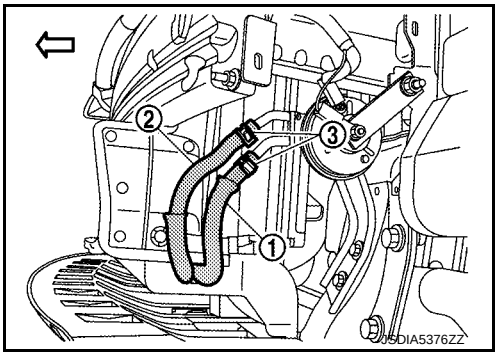
REMOVAL

NOTE:

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

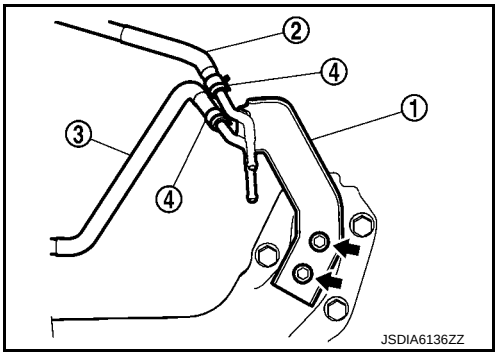
1. Remove the front bumper. Refer to EXT-26, "Removal and Installation".

2. Remove the clamps (3), then pull out the fluid cooler hose F (1) and the fluid cooler hose E (2) from the fluid cooler tube assembly.



3. Remove the bolts (⬅) of the fluid cooler tube assembly (1).
4. Separate the fluid cooler hose H (2) and fluid cooler hose G ((3) from the fluid cooler tube assembly.

(4) Clamps

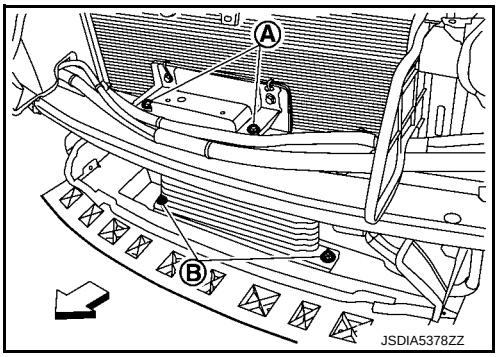


5. Remove the CVT fluid cooler bolts (A) and nut (B) and remove the CVT fluid cooler.

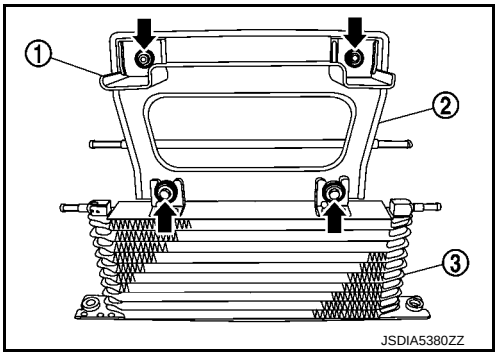
CAUTION:

Do not damage the radiator fins while removing the CVT cooler.

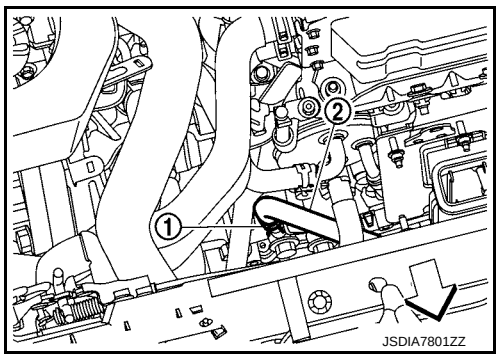
⇦ Vehicle front



6. Remove the bolts (⬅ and separate the bracket (1) and fluid cooler bracket and tube (2) from the CVT fluid cooler (3).



7. Remove the hose clamp (1) and remove the fluid cooler hose (2) from the CVT oil warmer.

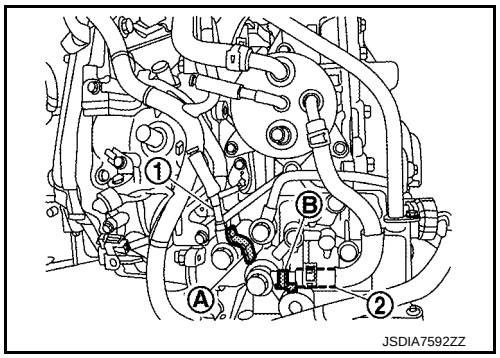


INSTALLATION

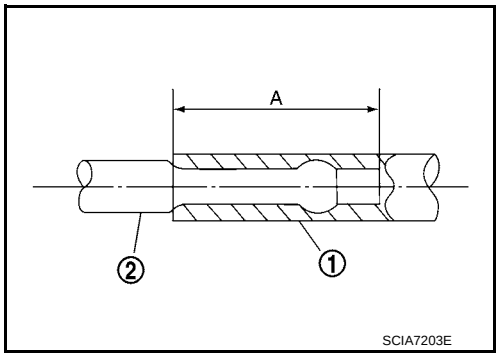
Installation is in the reverse order of removal.

CAUTION:

- **Do not reuse hose clamps.**
- **Hose clamps should not interfere with the spool or bulge of fluid cooler tubes.**
- **When installing fluid CVT cooler tube A (1) and CVT fluid cooler tube B (2) to the transaxle assembly, connect the fluid cooler tube stoppers (A) and (B) to the transaxle case.**



Refer to the following when installing CVT fluid cooler hoses:



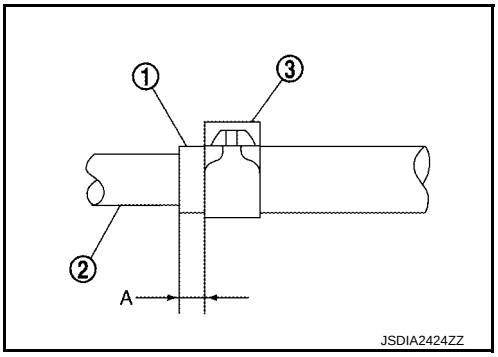
Hose name (1)	Installation side tube (2)	Direction of paint mark	Hose insertion depth (A)
CVT fluid cooler hose A	CVT oil warmer	Forward	Hose end reaches the 2-step bulge.
	Connector tube	Backward	
CVT fluid cooler hose B	Connector tube	Backward	Hose end reaches the 2-step bulge.
	Radiator	Downward	Hose end reaches the end of tube.
CVT fluid cooler hose C	Fluid cooler tube B	Align with mark on the fluid cooler tube B.Down-ward	Hose end reaches the 2-stage bulge.
	CVT oil warmer	Frontward	

Hose name (1)	Installation side tube (2)	Direction of paint mark	Hose insertion depth (A)
CVT fluid cooler hose D	CVT fluid cooler bracket (with tube)	Frontward	End reaches the 2-step bulge
	CVT fluid cooler		Hose end reaches the end of tube
CVT fluid cooler hose E	CVT fluid cooler	Frontward	
	Fluid cooler tube assembly	Frontward	
CVT fluid cooler hose F	Fluid cooler tube assembly	Leftward	
	Fluid cooler bracket (with tube)	Frontward	Hose end reaches the end of tube
CVT fluid cooler hose G	Radiator	Upward	
	Fluid cooler tube assembly	Leftward	Hose end reaches the 2-stage bulge.
CVT fluid cooler hose H	Fluid cooler tube assembly	Leftward	Hose end reaches the 2-stage bulge
	CVT oil warmer	Frontward	

Refer to the following when installing CVT fluid cooler hose clamps:

CAUTION:

The hose clamp should not interfere with the bulge of the fluid cooler tube.



Hose name (1)	Installation side tube (2)	Hose clamp (3)	
		Direction of tab	Clamping position
CVT fluid cooler hose A	CVT oil warmer	Downward	B: Align with the paint mark (C) as shown in the figure.
	Connector tube	Downward and 35° backward	A: 3 - 7 mm (0.12 - 0.28 in) (L) from hose end
CVT fluid cooler hose B	Connector tube	Downward and 35° backward	
	Radiator	Upward	
CVT fluid cooler hose C	Radiator	Downward	
	CVT fluid cooler	Leftward	B: Align with the paint mark (C) as shown in the figure.
CVT fluid cooler hose D	CVT fluid cooler	Leftward	
	CVT oil warmer	Rightward	

Inspection

INFOID:0000000014906736

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to TM-202, "Inspection".

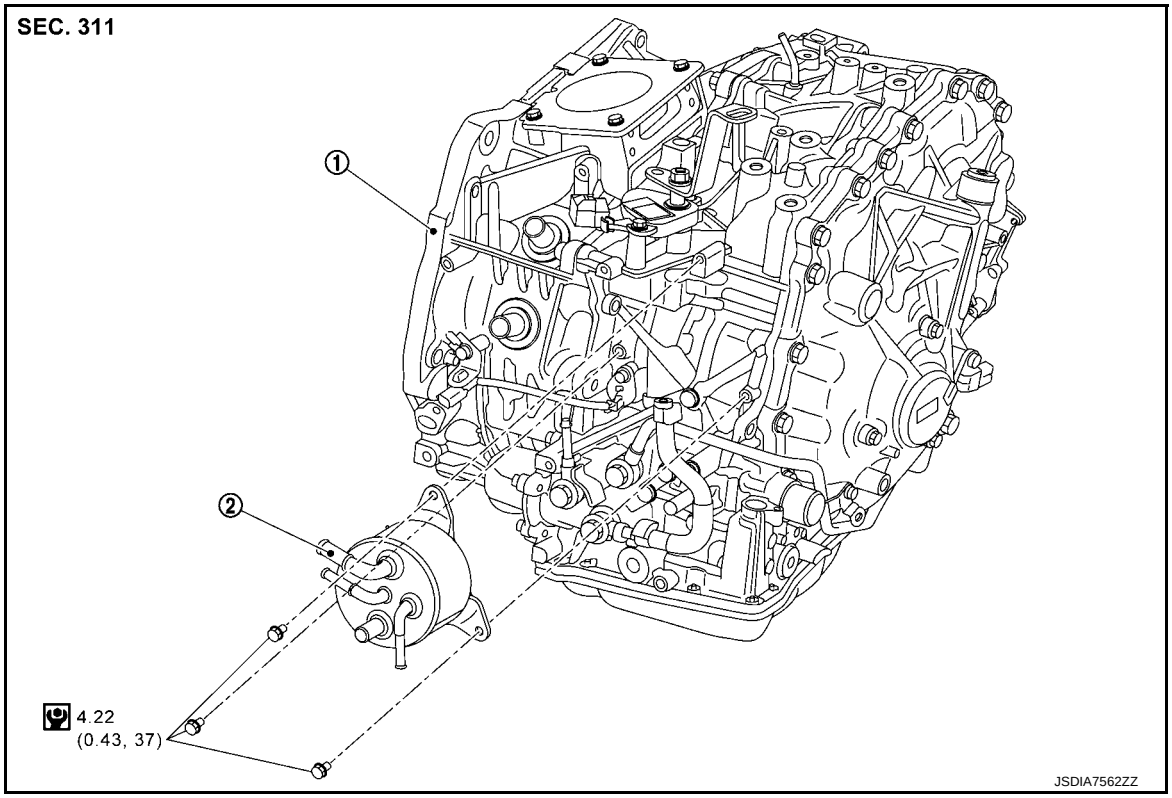
ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to TM-204, "Adjustment".

CVT OIL WARMER

Exploded View

INFOID:0000000014906762



① Transaxle assembly ② CVT oil warmer

Removal and Installation

INFOID:0000000014907560

REMOVAL

WARNING:

Do not remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

NOTE:

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

1. Remove front wheel and tire (LH) using power tool. Refer to WT-67, "Removal and Installation".
2. Remove front fender protector. Refer to EXT-40, "FENDER PROTECTOR : Removal and Installation".
3. Drain engine coolant from radiator. Refer to CO-10, "Draining".
   CAUTION:
   - **Perform this step when the engine is cold.**
   - **Do not spill engine coolant on the drive belt.**
4. Remove CVT oil warmer.
5. Remove bracket.

INSTALLATION

Installation is in the reverse order of removal.

Inspection

INFOID:0000000014906764

INSPECTION AFTER INSTALLATION

- Check for CVT fluid leakage. Refer to TM-202, "Inspection".
- Start and warm up the engine. Visually check that there is no leakage of engine coolant and CVT fluid.

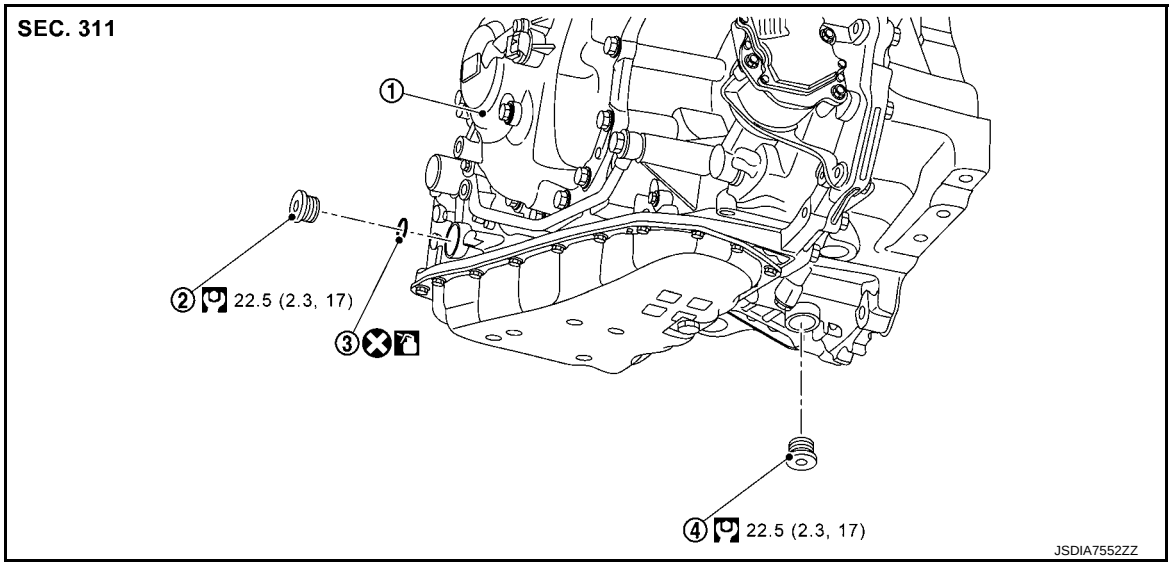
ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to TM-204, "Adjustment".

PLUG

Exploded View

INFOID:0000000014906766



1. Transaxle assembly
2. Plug
3. O-ring
4. Water drain plug

Removal and Installation

INFOID:0000000014906767

NOTE:
Replace the O-ring if oil leaks from the plug.

REMOVAL

1. Remove the front tire (LH). Refer to WT-67, "Removal and Installation".
2. Remove front fender protector (LH). Refer to EXT-40, "FENDER PROTECTOR : Removal and Installation".
3. Remove the plug and O-ring.

INSTALLATION

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

CAUTION:

- **Install a new O-ring.**
- **Apply CVT fluid to the O-ring.**
- **After installation, inspection plug for leaks.**

Inspection and Adjustment

INFOID:0000000014906768

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to TM-202, "Inspection".

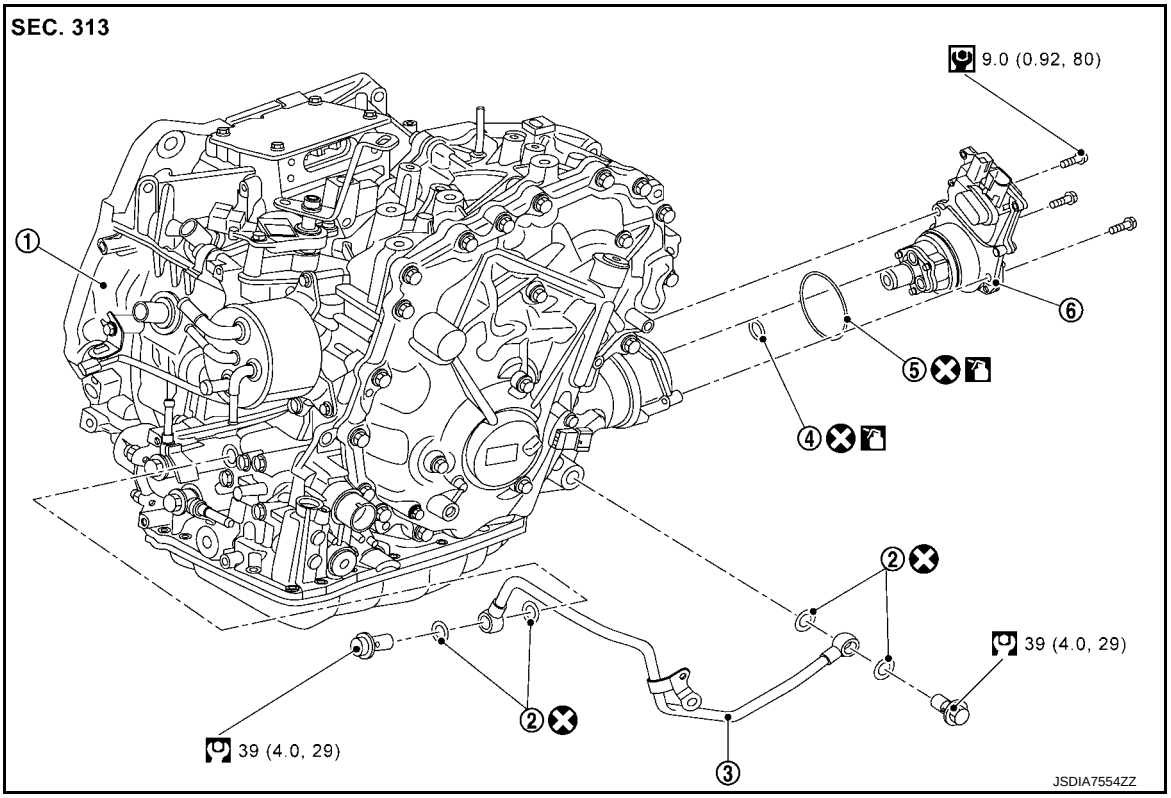
ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to TM-204, "Adjustment".

ELECTRIC OIL PUMP

Exploded View

INFOID:0000000014906769



1. Transaxle assembly
2. Copper washer
3. Tube assembly
4. O-ring (small)
5. O-ring (large)
6. Electric oil pump

Removal and Installation

INFOID:0000000014906770

REMOVAL

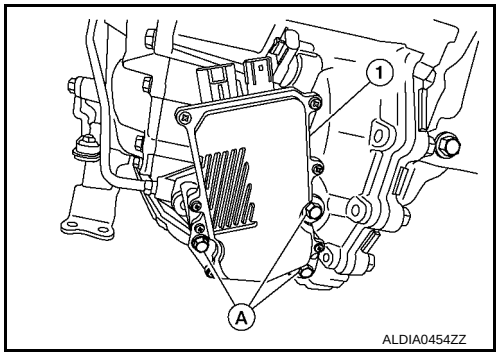
WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure engine coolant escaping from the radiator. Wrap a thick cloth around the cap. Slowly turn it a quarter turn to allow built-up pressure to escape. Carefully remove the cap by turning it all the way.

NOTE:

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

1. Remove fender protector (LH). Refer to EXT-40, "FENDER PROTECTOR : Removal and Installation".
2. Remove rear torque rod bracket. Refer to FSU-13, "Exploded View".
3. Disconnect the electric oil pump connector.
4. Remove the bolts (A) and the electric oil pump (1).
5. Push the engine and transaxle assembly rearward to remove electric oil pump.
6. Remove the O-ring.
7. Remove the CVT fluid charging pipe.
8. Remove the tube assembly.



INSTALLATION

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

CAUTION:

- **Do not reuse O-ring, copper washer, plug or tube assembly.**
- **Apply CVT fluid to the O-ring.**
- **Inspect electric oil pump after installation. Refer to TM-242, "Inspection and Adjustment".**

Inspection and Adjustment

INFOID:0000000014906771

INSPECTION AFTER INSTALLATION

Check for CVT fluid leakage. Refer to TM-202, "Inspection".

ADJUSTMENT AFTER INSTALLATION

Adjust CVT fluid level. Refer to TM-204, "Adjustment".

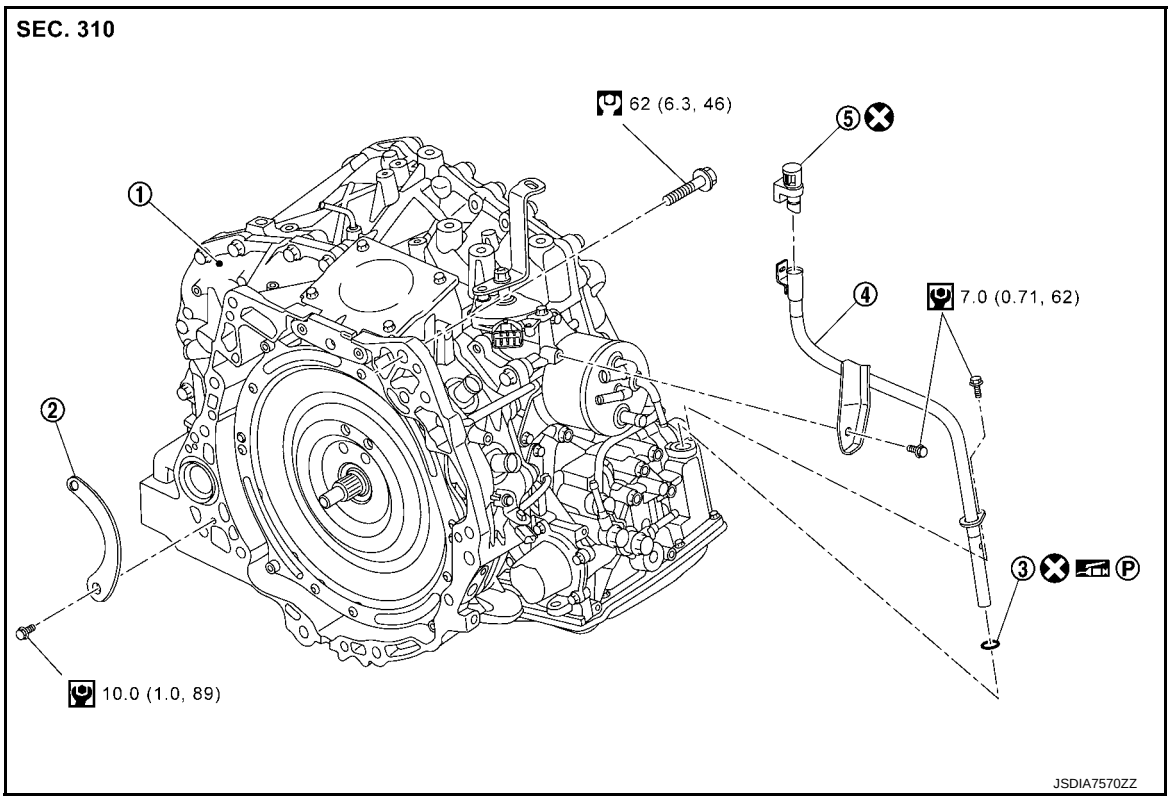
UNIT REMOVAL AND INSTALLATION

TRANSAXLE ASSEMBLY

Exploded View

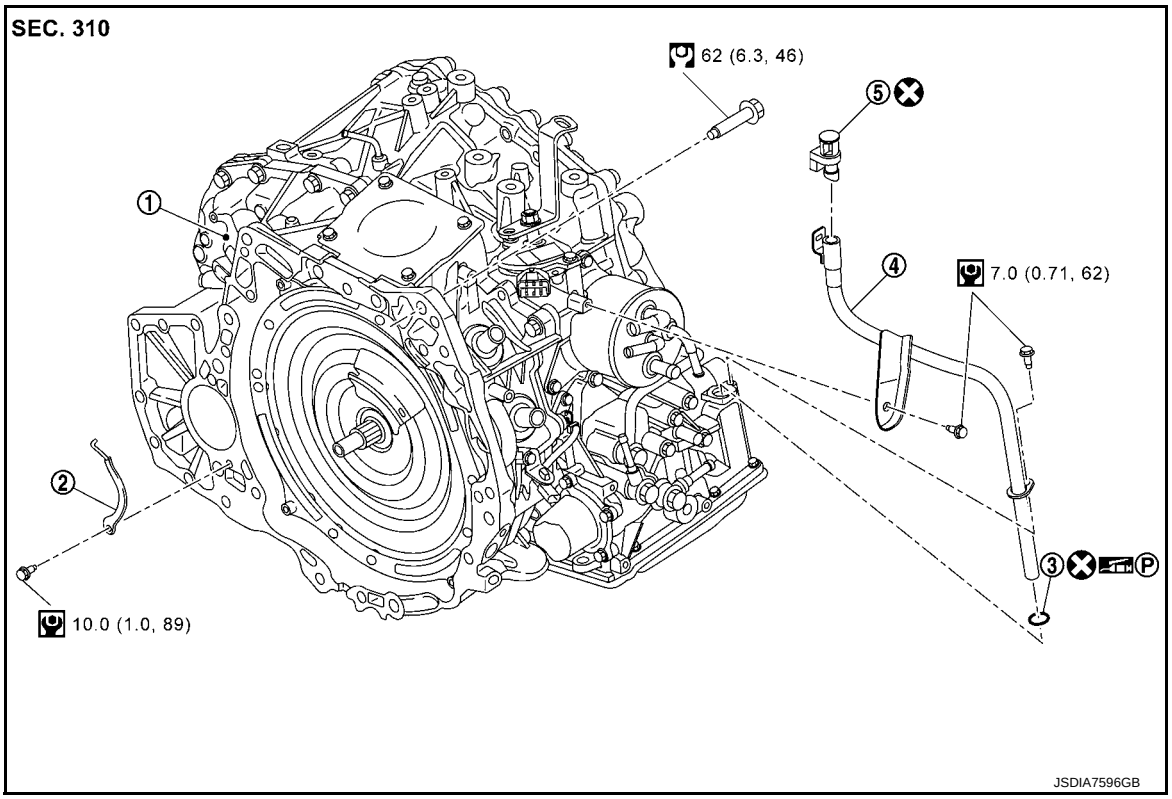
INFOID:0000000014906772

FWD Models



1. Transaxle assembly
2. Cover
3. O-ring
4. CVT fluid charging pipe
5. CVT fluid charging pipe cap

AWD Models



1. Transaxle assembly
2. Cover
3. O-ring
4. CVT fluid charging pipe
5. CVT fluid charging pipe cap

Removal and Installation

INFOID:0000000014906773

DANGER:

Since hybrid vehicles and electric vehicles contain a high voltage battery, there is the risk of electric shock, electric leakage, or similar accidents if the high voltage component and vehicle are handled incorrectly. Be sure to follow the correct work procedures when performing inspection and maintenance.

WARNING:

- **Be sure to remove the service plug in order to disconnect the high voltage circuits before performing inspection or maintenance of high voltage system harnesses and parts.**
- **The removed service plug must always be carried in a pocket of the responsible worker or placed in the tool box during the procedure to prevent the plug from being connected by mistake.**
- **Be sure to wear insulating protective equipment before beginning work on the high voltage system.**
- **Never allow workers other than the responsible person to touch the vehicle containing high voltage parts. To keep others from touching the high voltage parts, these parts must be covered with an insulating sheet except when using them.**
- **Refer to GI-28, "High Voltage Precautions".**

CAUTION:

- **Never bring the vehicle into the READY status with the service plug removed unless otherwise instructed in the Service Manual. A malfunction may occur if this is not observed.**
- **When replacing transaxle assembly, perform TM-11, "Removal and Installation Procedure for CVT Unit Connector"".**
- **When replacing TCM and transaxle assembly simultaneously, replace transaxle assembly first and then replace TCM.**

NOTE:

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

REMOVAL

WARNING:
- **Follow the instructions below before starting the procedure.**
- **Shut off high voltage circuit. Refer to HBB-14, "Li-ion Battery".**
- **Check voltage in high voltage circuit. Refer to HBB-18, "System Description".**

WARNING:

To prevent electric shock hazards, be sure to wear protective gear.



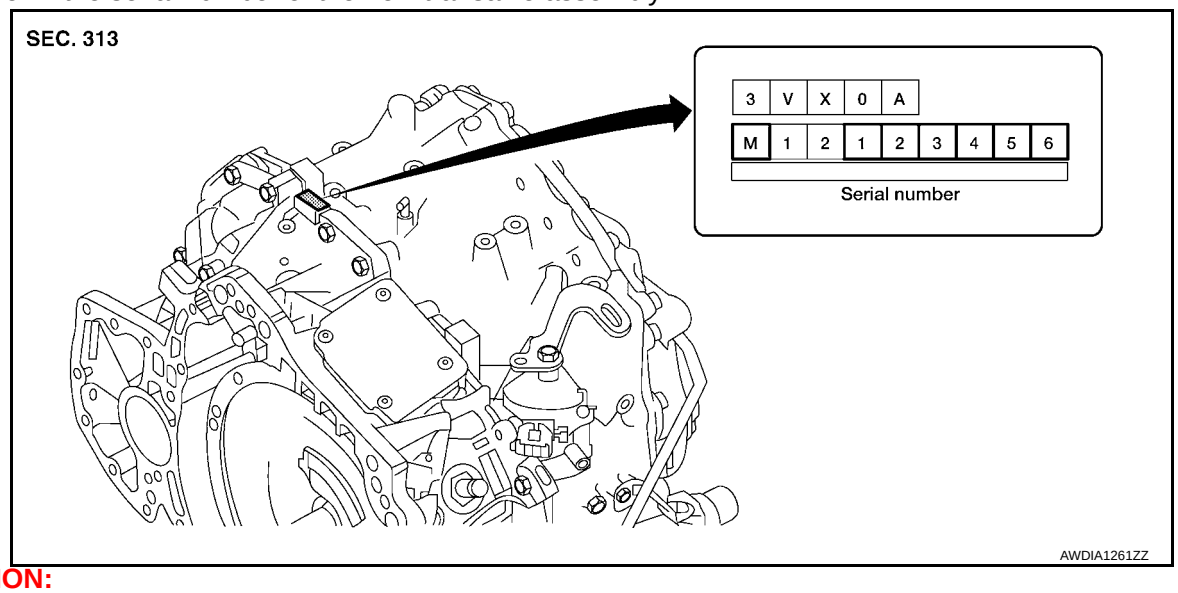
1. Remove the CVT fluid charging pipe.
2. Remove the engine and transaxle assembly. Refer to EM-106, "Removal and Installation".
3. Disconnect the transaxle harness connectors.
4. Remove transfer assembly. Refer to DLN-75, "Removal and Installation". (AWD models)
5. Remove starter motor. Refer to STR-23, "Removal and Installation".
6. Disconnect the CVT water hoses of CVT oil warmer from engine side. Refer to TM-238, "Removal and Installation".
7. Remove following parts from transaxle assembly.
   - Control cable bracket.
   - Air breather hose.
   - CVT water hoses and heater thermostat.
   - CVT fluid cooler hose and tube.
   - Charging pipe and O-ring
   - Cover
   - Crankshaft position sensor 2
8. Remove the transaxle to engine and engine to transaxle bolts.
9. Separate the engine from the transaxle.

INSTALLATION

Installation is in the reverse order of removal.

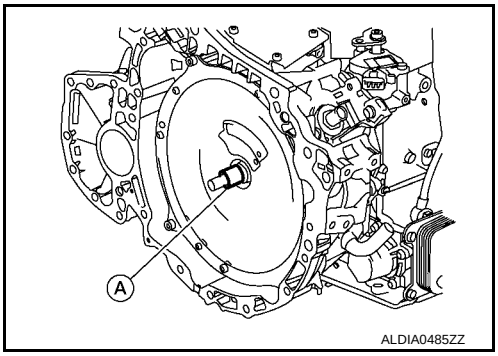
NOTE:

Write down the serial number of the new transaxle assembly.



CAUTION:
- **When replacing an engine or transaxle you must make sure any dowels are installed correctly during re-assembly**
- **Improper alignment caused by missing dowels may cause vibration, oil leaks or breaking of drive train components.**
- **Never reuse O-rings or copper sealing washers.**
- **When turning crankshaft, turn it clockwise as viewed from the front of the engine.**
- **When installing the CVT to the engine, align the matching mark on the drive plate with the matching mark on the torque converter.**

Apply lithium - based grease to the full periphery of the traction motor shaft spline Ⓐ.



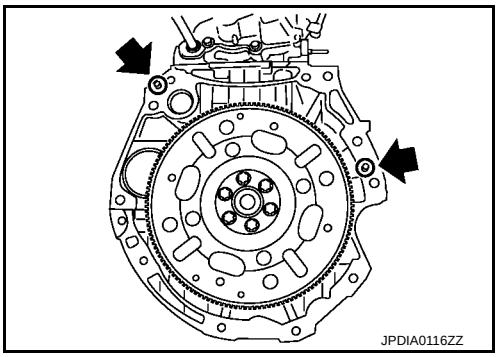
WARNING:

To prevent electric shock hazards, be sure to wear protective gear.

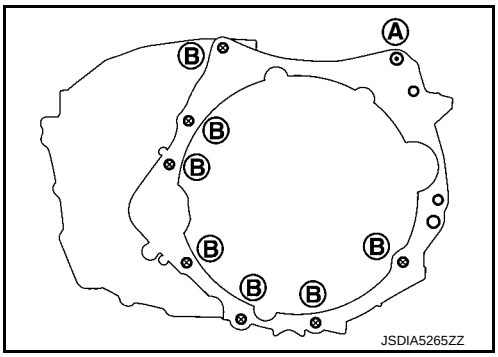


CAUTION:

- **Before applying grease, clean torsional damper assembly spline and traction motor shaft spline.**
- **Be sure to apply grease to the points specified.**
- When installing the transaxle assembly on to the engine assembly, check the engagement of dowel pins (⬅).



- Install the transaxle assembly and engine assembly mounting bolts according to the following standards.



Bolt No.	Ⓐ	Ⓑ
Insertion direction	Transaxle to engine	Engine to transaxle
Number of bolts	1	7
Bolt length mm (in)	55 (2.17)	50 (1.97)

Inspection and Adjustment

INFOID:0000000014906774

INSPECTION AFTER INSTALLATION

Check the following items:

- CVT fluid leakage, refer to TM-202, "Inspection".
- For CVT position, refer to TM-99, "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-204, "Adjustment".
- When replacing transaxle assembly, perform "ADDITIONAL SERVICE WHEN REPLACING TRANSAXLE ASSEMBLY". Refer to TM-95, "Description".
- When replacing TCM and transaxle assembly simultaneously, perform "ADDITIONAL SERVICE WHEN REPLACING TCM AND TRANSAXLE ASSEMBLY". Refer to TM-97, "Description".

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specification

INFOID:0000000014907532

Applied model	Engine	MR20DD
	Axle	2WD/AWD
Transaxle model		RE0F03H
Transaxle gear ratio	D position	2.631 – 0.378
	R position	5.604
	Final drive	6.386
Recommended fluid		Refer to MA-11, "Fluids and Lubricants".
Fluid capacity liter (Imp qt)		

Shift Characteristics

INFOID:0000000014907533

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 (STANDARD/ECO)	1,900 – 2,250	1,950 – 2,300
8/8	“D” position (STANDARD/ECO)	3,600 – 3,800	5,050 – 5,250

Heater Thermostat

INFOID:0000000014907534

Valve lift	More than 5.0 mm (0.20 in)
Valve opening temperature	69°C - 73°C (156°F - 163°F)
Minimum valve lift	5.0 mm/Approx. 85°C (0.20 in/Approx. 185°F)