

TM

SECTION

TRANSAXLE & TRANSMISSION

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TM

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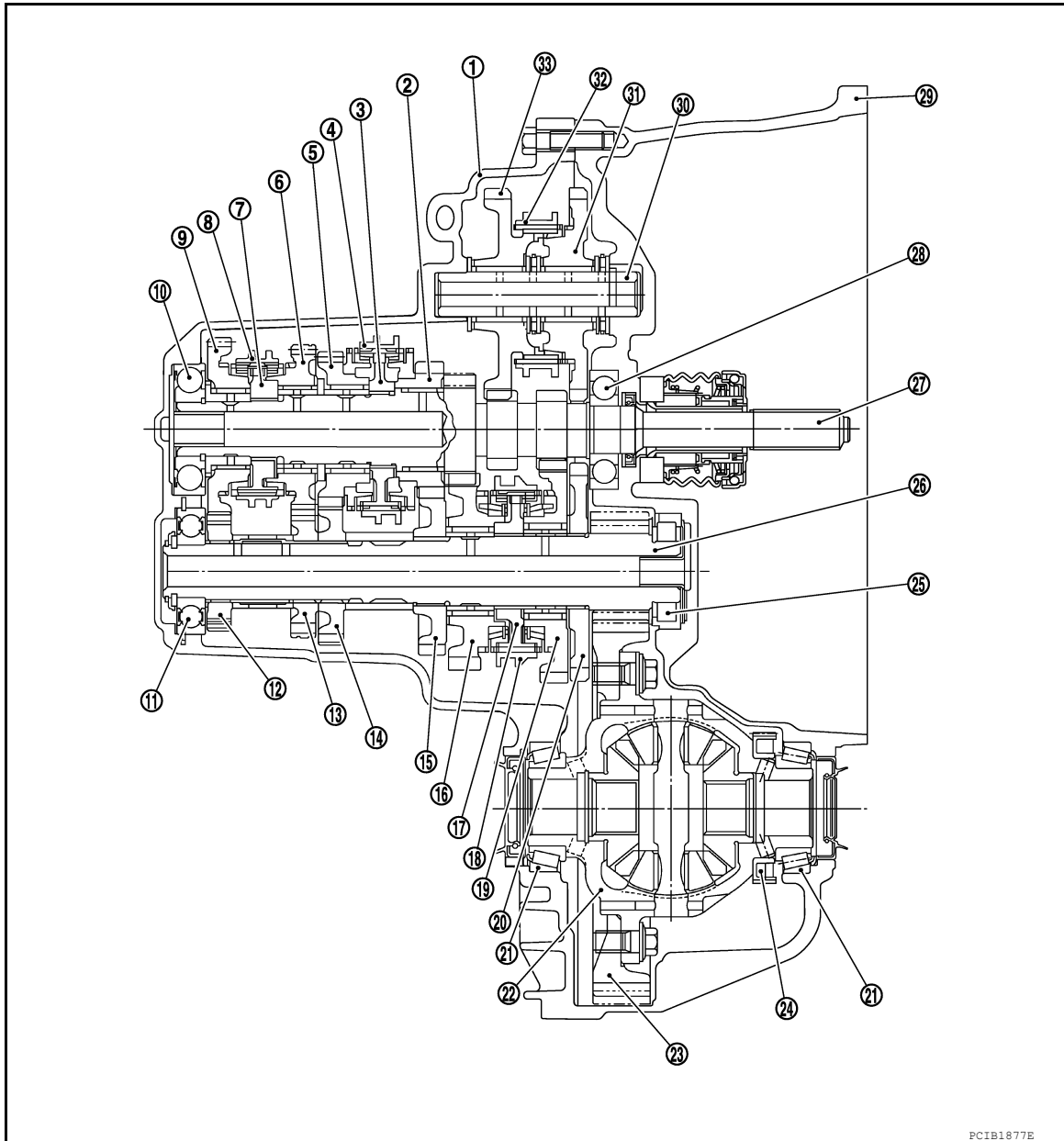
SYSTEM DESCRIPTION

M/T SYSTEM

System Diagram

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CROSS-SECTIONAL VIEW



- | | | |
|--------------------------------|------------------------------|-------------------------------|
| 1. Transaxle case | 2. 3rd input gear | 3. 3rd-4th synchronizer hub |
| 4. 3rd-4th coupling sleeve | 5. 4th input gear | 6. 5th input gear |
| 7. 5th-6th synchronizer hub | 8. 5th-6th coupling sleeve | 9. 6th input gear |
| 10. Input shaft rear bearing | 11. Mainshaft rear bearing | 12. 6th main gear |
| 13. 5th main gear | 14. 4th main gear | 15. 3rd main gear |
| 16. 2nd main gear | 17. 1st-2nd synchronizer hub | 18. 1st-2nd coupling sleeve |
| 19. 1st main gear | 20. Reverse main gear | 21. Differential side bearing |
| 22. Differential case assembly | 23. Final gear | 24. Speedometer drive gear |
| 25. Mainshaft front bearing | 26. Mainshaft | 27. Input shaft |

- | | | |
|--------------------------------|-----------------------------|-------------------------------|
| 28. Input shaft front bearing | 29. Clutch housing | 30. Reverse idler shaft |
| 31. Reverse idler gear (Front) | 32. Reverse coupling sleeve | 33. Reverse idler gear (Rear) |

System Description

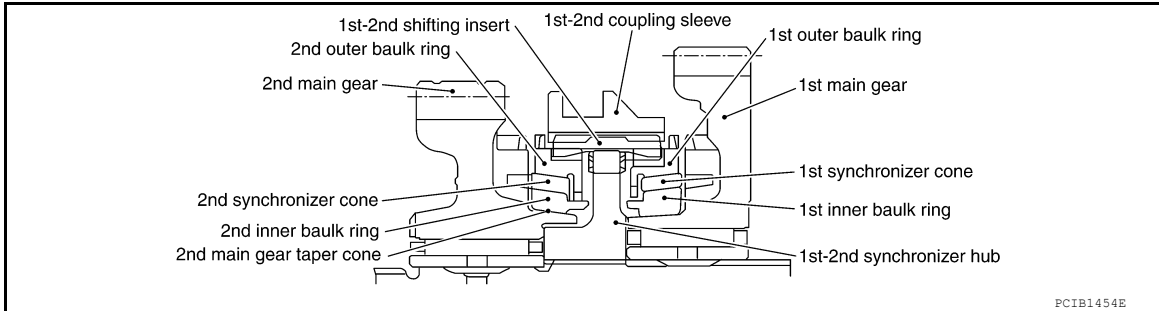
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DOUBLE-CONE SYNCHRONIZER

Double-cone synchronizer is adopted for 3rd gear to reduce operating force of the shift fork.

TRIPLE-CONE SYNCHRONIZER

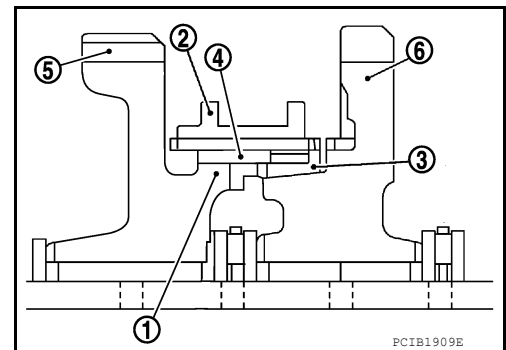
Triple-cone synchronizer are adopted for 1st and 2nd gears to reduce operating force of the shift fork.



REVERSE GEAR NOISE PREVENTION FUNCTION (SYNCHRONIZING METHOD)

Reverse gear can be matched smoothly in a structure by setting synchronizer hub (1) of reverse idler gear (5) [Rear], reverse coupling sleeve (2), reverse baulk ring (3), and reverse insert spring (4) to reverse idler gears, and letting reverse gear be synchronized.

6 : Reverse idler gear (Front)



NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

< SYMPTOM DIAGNOSIS >

[6MT: RS6F52A]

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:000000006390395

Use the chart below to help you find the cause of the symptom. The numbers indicate the order of the inspection. If necessary, repair or replace these parts.

Reference page		MA-12			TM-31		TM-25	TM-35		TM-31			
SUSPECTED PARTS (Possible cause)		OIL (Oil level is low.)	OIL (Wrong oil.)	OIL (Oil level is high.)	GASKET (Damaged)	OIL SEAL (Worn or damaged)	SHIFT CONTROL LINKAGE (Worn)	STRIKING ROD ASSEMBLY	SHIFT FORK (Worn)	GEAR (Worn or damaged)	BEARING (Worn or damaged)	BAULK RING (Worn or damaged)	INSERT SPRING (Damaged)
Symptoms	Noise	1	2							3	3		
	Oil leakage		3	1	2	2							
	Hard to shift or will not shift		1	1			2					3	3
	Jumps out of gear						1	2	3	3			

PRECAUTION

PRECAUTIONS

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

INFOID:000000006390396

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000006390397

NOTE:

- Before removing and installing any control units, first turn the push-button ignition switch to the LOCK position, then disconnect both battery cables.
- After finishing work, confirm that all control unit connectors are connected properly, then re-connect both battery cables.
- Always use CONSULT to perform self-diagnosis as a part of each function inspection after finishing work. If a DTC is detected, perform trouble diagnosis according to self-diagnosis results.

This vehicle is equipped with a push-button ignition switch and a steering lock unit.

If the battery is disconnected or discharged, the steering wheel will lock and cannot be turned.

If turning the steering wheel is required with the battery disconnected or discharged, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Carry the Intelligent Key or insert it to the key slot and turn the push-button ignition switch to ACC position. (At this time, the steering lock will be released.)
3. Disconnect both battery cables. The steering lock will remain released with both battery cables disconnected and the steering wheel can be turned.
4. Perform the necessary repair operation.

PRECAUTIONS

< PRECAUTION >

[6MT: RS6F52A]

5. When the repair work is completed, re-connect both battery cables. With the brake pedal released, turn the push-button ignition switch from ACC position to ON position, then to LOCK position. (The steering wheel will lock when the push-button ignition switch is turned to LOCK position.)
6. Perform self-diagnosis check of all control units using CONSULT.

Precaution for Work

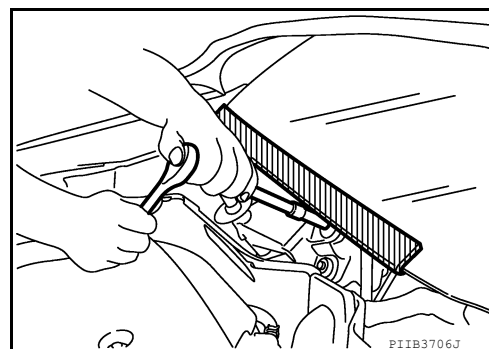
INFOID:000000006912994

- When removing or disassembling each component, be careful not to damage or deform it. If a component may be subject to interference, be sure to protect it with a shop cloth.
- When removing (disengaging) components with a screwdriver or similar tool, be sure to wrap the component with a shop cloth or vinyl tape to protect it.
- Protect the removed parts with a shop cloth and prevent them from being dropped.
- Replace a deformed or damaged clip.
- If a part is specified as a non-reusable part, always replace it with new one.
- Be sure to tighten bolts and nuts securely to the specified torque.
- After installation is complete, be sure to check that each part works properly.
- Follow the steps below to clean components.
 - Water soluble dirt: Dip a soft cloth into lukewarm water, and wring the water out of the cloth to wipe the dirty area.
Then rub with a soft and dry cloth.
 - Oily dirt: Dip a soft cloth into lukewarm water with mild detergent (concentration: within 2 to 3%), and wipe the dirty area.
Then dip a cloth into fresh water, and wring the water out of the cloth to wipe the detergent off. Then rub with a soft and dry cloth.
- Do not use organic solvent such as thinner, benzene, alcohol, or gasoline.
- For genuine leather seats, use a genuine leather seat cleaner.

Precaution for Procedure without Cowl Top Cover

INFOID:000000006390398

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



Service Notice or Precautions

INFOID:000000006390399

- Do not reuse transaxle oil, once it has been drained.
- Check oil level or replace oil with vehicle on level surface.
- During removal or installation, keep inside of transaxle clear of dust or dirt.
- Check for the correct installation status prior to removal or disassembly. If matching marks are required, be certain they do not interfere with the function of the parts they are applied.
- In principle, tighten bolts or nuts gradually in several steps working diagonally from inside to outside. If tightening sequence is specified, use it.
- Be careful not to damage sliding surfaces and mating surfaces.

PREPARATION

< PREPARATION >

[6MT: RS6F52A]

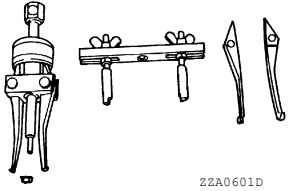
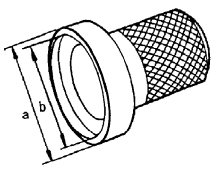
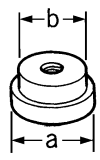
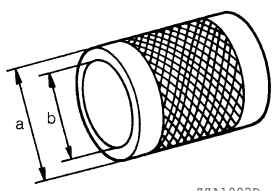
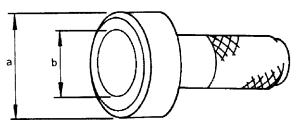
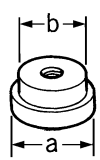
PREPARATION

PREPARATION

Special Service Tools

INFOID:000000006390400

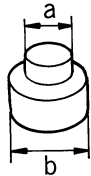
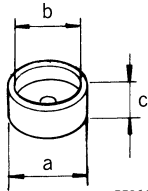
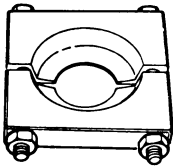
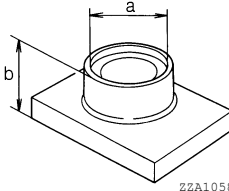
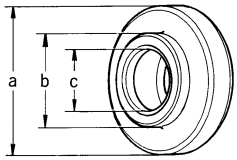
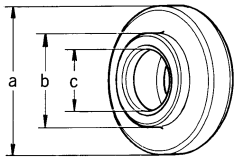
The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name		Description
KV381054S0 (J-34286) Puller	 ZZA0601D	<ul style="list-style-type: none"> Removing differential side bearing outer race Removing mainshaft front bearing
ST33400001 (J-26082) Drift	 ZZA0814D	Installing differential side oil seal (clutch housing side) a: 60 mm (2.36 in) dia. b: 47 mm (1.85 in) dia.
ST35321000 (—) Drift	 ZZA1000D	<ul style="list-style-type: none"> Installing input shaft oil seal Installing reverse main gear Installing 1st main gear bushing Installing 1st-2nd synchronizer hub assembly Installing 2nd main gear bushing Installing 3rd main gear a: 49 mm (1.93 in) dia. b: 41 mm (1.61 in) dia.
ST33200000 (J-26082) Drift	 ZZA1002D	<ul style="list-style-type: none"> Installing mainshaft front bearing Installing 6th input gear bushing Installing 4th main gear Installing 5th main gear Installing 6th main gear a: 60 mm (2.36 in) dia. b: 44.5 mm (1.752 in) dia.
ST30720000 (J-25405) Drift	 ZZA0811D	<ul style="list-style-type: none"> Installing differential side oil seal (transaxle case side) Installing differential side bearing outer race (transaxle case side) Installing mainshaft rear bearing Installing differential side bearing a: 77 mm (3.03 in) dia. b: 55.5 mm (2.185 in) dia.
ST33061000 (J-8107-2) Drift	 ZZA1000D	<ul style="list-style-type: none"> Installing bore plug Removing differential side bearing (transaxle case side) Removing differential side bearing (clutch housing side) a: 38 mm (1.50 in) dia. b: 28.5 mm (1.122 in) dia.

PREPARATION

< PREPARATION >

[6MT: RS6F52A]

Tool number (Kent-Moore No.) Tool name		Description	
ST33052000 (—) Drift	 ZZA1023D	<ul style="list-style-type: none"> Removing input shaft rear bearing Removing 5th input gear bushing, 4th input gear, 4th input gear bushing, 3rd-4th synchronizer hub assembly, and 3rd input gear Installing input shaft front bearing Removing mainshaft rear bearing Removing 6th main gear Removing 4th main gear and 5th main gear a: 22 mm (0.87 in) dia. b: 28 mm (1.10 in) dia.	A B C TM
KV40105020 (—) Drift	 ZZA1133D	<ul style="list-style-type: none"> Removing 5th input gear and 5th-6th synchronizer hub assembly Removing 3rd main gear, 2nd main gear, 2nd main gear bushing, 1st-2nd synchronizer hub assembly, 1st main gear, 1st main gear bushing, and reverse main gear a: 39.7 mm (1.563 in) dia. b: 35 mm (1.38 in) dia. c: 15 mm (0.59 in)	E F
ST30031000 (J-22912-01) Puller	 ZZA0537D	Measuring wear of inner baulk ring	G H
KV40105710 (—) Press stand	 ZZA1058D	<ul style="list-style-type: none"> Installing 3rd-4th synchronizer hub assembly Installing 4th input gear bushing Installing 5th input gear bushing Installing 5th-6th synchronizer hub assembly Installing 2nd main gear bushing Installing 3rd main gear a: 46 mm (1.81 in) dia. b: 41 mm (1.61 in)	I J K
ST30901000 (—) Drift	 ZZA0978D	<ul style="list-style-type: none"> Installing input shaft rear bearing Installing 4th main gear Installing 5th main gear Installing 6th main gear Installing mainshaft rear bearing a: 79 mm (3.11 in) dia. b: 45 mm (1.77 in) dia. c: 35.2 mm (1.386 in) dia.	L M N
ST30032000 (—) Drift	 ZZA0978D	Installing input shaft front bearing a: 80 mm (3.15 in) dia. b: 38 mm (1.50 in) dia. c: 31 mm (1.22 in) dia.	O P

PREPARATION

< PREPARATION >

[6MT: RS6F52A]

Tool number (Kent-Moore No.) Tool name	Description
ST38220000 (—) Press stand <div> <p>ZZA1058D</p> </div>	<ul style="list-style-type: none"> • Installing reverse main gear • Installing 1st main gear bushing • Installing 1st-2nd synchronizer hub assembly a: 63 mm (2.48 in) dia. b: 65 mm (2.56 in)
KV40101630 (J-35870) Drift <div> <p>ZZA1003D</p> </div>	Installing reverse main gear a: 68 mm (2.68 in) dia. b: 60 mm (2.36 in) dia.
KV38102510 (—) Drift <div> <p>ZZA0838D</p> </div>	<ul style="list-style-type: none"> • Installing 1st main gear bushing • Installing 1st-2nd synchronizer hub assembly • Installing differential side bearing (transaxle case side) • Installing differential side bearing (clutch housing side) a: 71 mm (2.80 in) dia. b: 65 mm (2.56 in) dia.
— (J-39713) Preload adapter <div> <p>NT087</p> </div>	Measuring end play of side gear
— J-48849 Manual transmission cable adjuster <div> <p>ALDIA0801ZZ</p> </div>	To adjust manual transmission cables
— (J-46534) Trim tool set <div> <p>AWIIL0009ZZ</p> </div>	Removing trim components

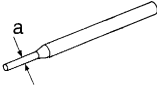
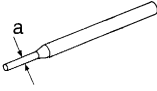
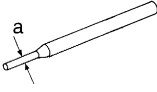
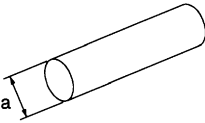
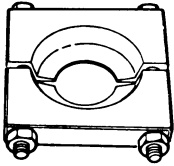
PREPARATION

< PREPARATION >

[6MT: RS6F52A]

Commercial Service Tools

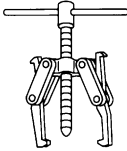

INFOID:000000006390401

Tool name	Description
Pin punch  NT410	Removing and installing retaining pin a: 4.5 mm (0.177 in) dia.
Pin punch  NT410	Removing and installing retaining pin of shift selector a: 5.5 mm (0.217 in) dia.
Pin punch  NT410	Removing and installing retaining pin of each shift selector a: 7.5 mm (0.295 in) dia.
Drift  S-NT063	Installing striking rod oil seal and shift selector oil seal a: 24.5 mm (0.965 in) dia.
Puller  ZZA0537D	Removing each bearing, gear, and bushing

PREPARATION

< PREPARATION >

[6MT: RS6F52A]

Tool name	Description
<p>Puller</p>  <p>NT077</p>	<p>Removing each bearing, gear, and bushing</p>
<p>Power tool</p>  <p>PIIB1407E</p>	<p>Loosening nuts, screws and bolts</p>

PERIODIC MAINTENANCE

M/T OIL

Draining

INFOID:000000006390402

1. Start engine and let it run to warm up transaxle oil.
2. Stop engine and remove the drain plug to drain the oil.
3. Install the drain plug with a new gasket to the transaxle case. Tighten the drain plug to the specified torque. Refer to [TM-31, "Exploded View"](#).

CAUTION:

Do not reuse gasket.

Refilling

INFOID:000000006390403

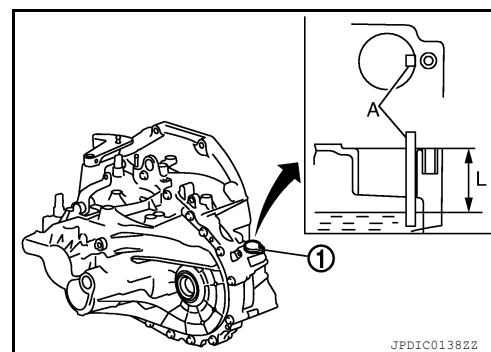
1. Remove the filler plug (1) and fill transaxle with new oil.

Oil grade : Refer to [MA-12, "Fluids and Lubricants"](#).

2. After refilling oil, measure oil level to check if it is within the specification using suitable gauge (A) as shown.

CAUTION:

- Do not start engine while checking oil level.
- Insert the suitable gauge straight and against the wall of the filler plug hole, then measure the gauge from the top of the filler plug hole to the oil level as shown.



Oil level (L) : Refer to [MA-12, "Fluids and Lubricants"](#).

3. Install the filler plug with a new O-ring to the clutch housing.

CAUTION:

Do not reuse O-ring.

4. Tighten filler plug bolt to the specified torque. Refer to [TM-31, "Exploded View"](#).

Inspection

INFOID:000000006390404

LEAKAGE

- Make sure that oil is not leaking from transaxle or around it.

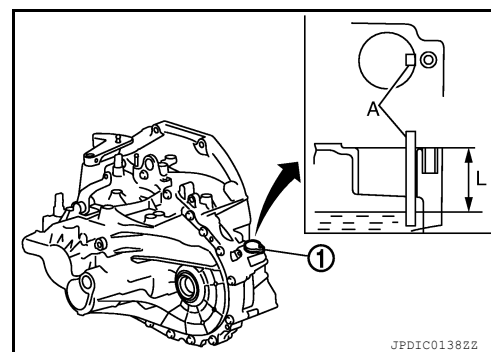
LEVEL

1. Remove the filler plug (1).
2. Measure oil level to check if it is within the specification using a suitable gauge (A) as shown.

CAUTION:

- Do not start engine while checking oil level.
- Insert the suitable gauge straight and against the wall of the filler plug hole, then measure the gauge from the top of the filler plug hole to the oil level as shown.

Oil level (L) : Refer to [TM-85, "General Specifications"](#).



3. Install the filler plug with a new O-ring to the clutch housing.

CAUTION:

Do not reuse O-ring.

4. Tighten the filler plug bolt to the specified torque. Refer to [TM-31, "Exploded View"](#).

REMOVAL AND INSTALLATION

SIDE OIL SEAL

Removal and Installation

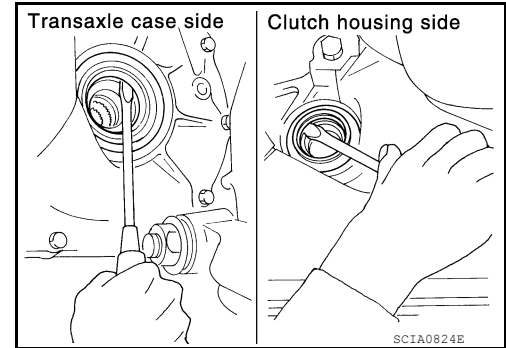
INFOID:000000006390405

REMOVAL

1. Remove the drive shaft. Refer to [FAX-11. "Removal and Installation \(Left Side\)"](#), [FAX-13. "Removal and Installation \(Right Side\)"](#).
2. Remove oil seal using suitable tool.

CAUTION:

Do not damage the transaxle case surface when removing oil seal.



INSTALLATION

1. Drive the oil seal straight into the transaxle case and clutch housing to the specified dimension (A) using Tools.

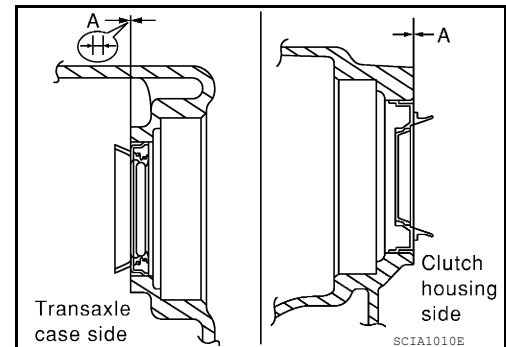
Dimension (A) : 0 ± 0.5 mm (0 ± 0.020 in)

Tool numbers : ST30720000 (J-25405)
: ST33400001 (J-26082)

CAUTION:

Do not reuse oil seal.

2. Install the drive shaft. Refer to [FAX-11. "Removal and Installation \(Left Side\)"](#), [FAX-13. "Removal and Installation \(Right Side\)"](#).
3. Check the transaxle fluid level. Refer to [MA-12. "Fluids and Lubricants"](#).



BACK-UP LAMP SWITCH

< REMOVAL AND INSTALLATION >

[6MT: RS6F52A]

BACK-UP LAMP SWITCH

Removal and Installation

INFOID:0000000006390406

For removal and installation of back-up lamp switch, refer to [TM-31, "Exploded View"](#).

Inspection

INFOID:0000000006390407

- Check continuity.

Gear position	Continuity
Reverse	Yes
Except reverse	No

A

B

C

TM

E

F

G

H

I

J

K

L

M

N

O

P

PARK/NEUTRAL POSITION (PNP) SWITCH

< REMOVAL AND INSTALLATION >

[6MT: RS6F52A]

PARK/NEUTRAL POSITION (PNP) SWITCH

Removal and Installation

INFOID:000000006390408

For removal and installation of park/neutral position switch, refer to [TM-31. "Exploded View"](#).

Inspection

INFOID:000000006390409

- Check continuity.

Gear position	Continuity
Neutral	Yes
Except neutral	No

M/T SHIFT SELECTOR

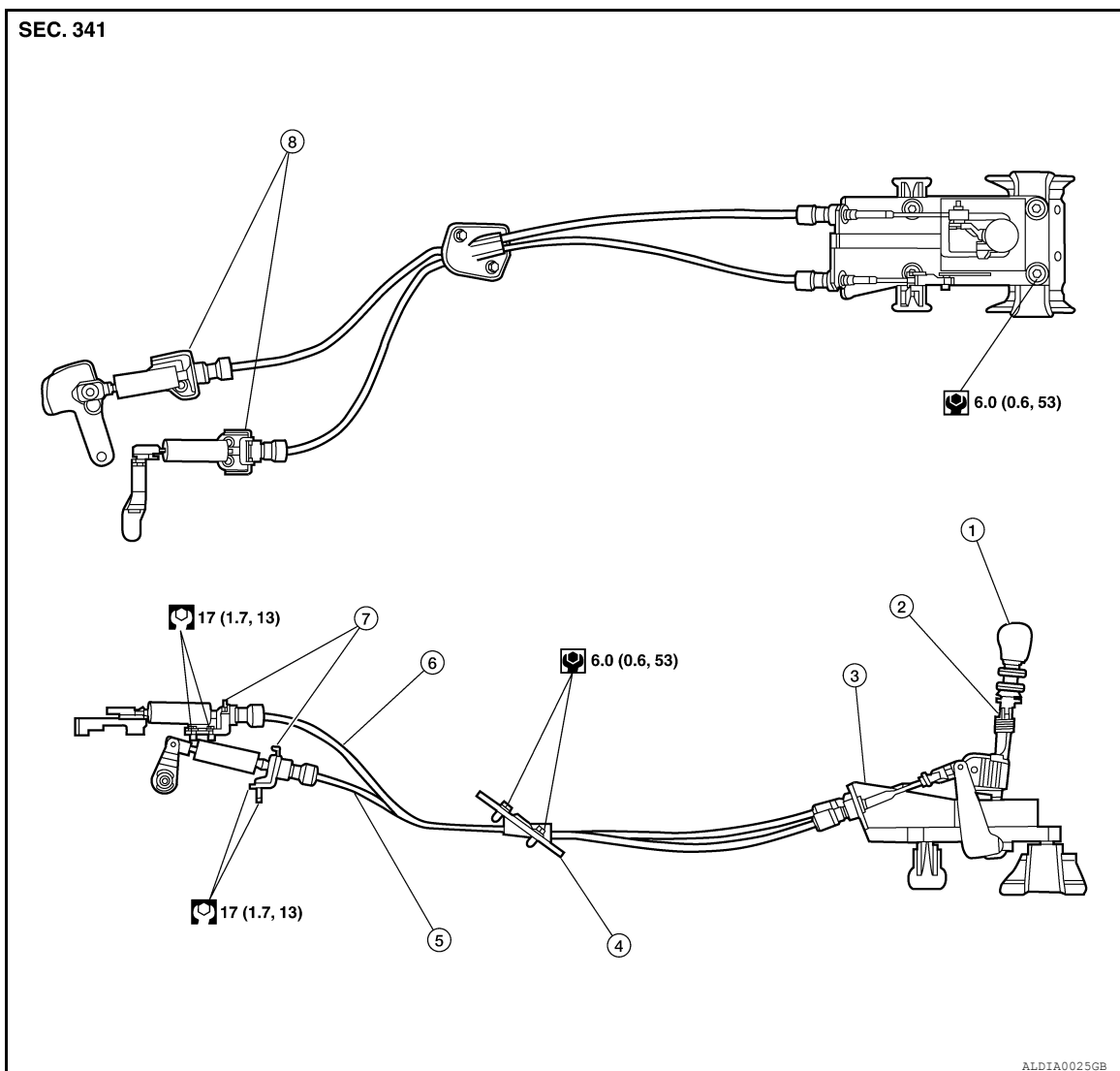
< REMOVAL AND INSTALLATION >

[6MT: RS6F52A]

M/T SHIFT SELECTOR

Exploded View

INFOID:0000000008659446



- | | | |
|--------------------------|-------------------|----------------------------|
| 1. Shift selector handle | 2. Shift selector | 3. Shift selector assembly |
| 4. Retainer grommet | 5. Select cable | 6. Shift cable |
| 7. Lock plate | 8. Cable bracket | |

Removal and Installation

INFOID:0000000008659447

REMOVAL

1. Remove instrument lower panel (LH). Refer to [IP-19, "Removal and Installation"](#).
2. Remove console side finishers (LH) and (RH). Refer to [IP-22, "Exploded View"](#).
3. Remove shift selector handle.
4. Remove M/T finisher. Refer to [IP-11, "Exploded View"](#).
5. Remove the shift cable from the shift selector assembly.
6. Remove the select cable from the shift selector assembly.
7. Remove the shift selector assembly bolts and the shift selector assembly.

INSTALLATION

Installation is in the reverse order of removal.

M/T SHIFT SELECTOR

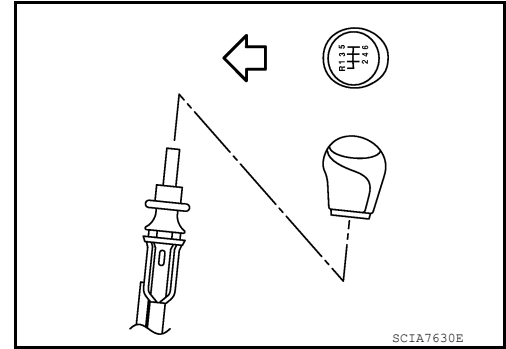
< REMOVAL AND INSTALLATION >

[6MT: RS6F52A]

- Install shift selector handle according to the following.
- Apply cement to threads of shift selector.
- Tighten shift selector handle until increased tension is felt. Then align shift selector handle to the position as shown within one turn.
- ⇐: Front

CAUTION:

Do not adjust shift selector handle by loosening it.



- Adjust select cable as necessary. Refer to [TM-26, "Adjustment"](#).
- After assembly, make sure shift selector automatically returns to Neutral position when it is moved to 1st/2nd or reverse gate.
- When shift selector is moved to each position, make sure there is no binding or disconnection of cables.

CONTROL LINKAGE

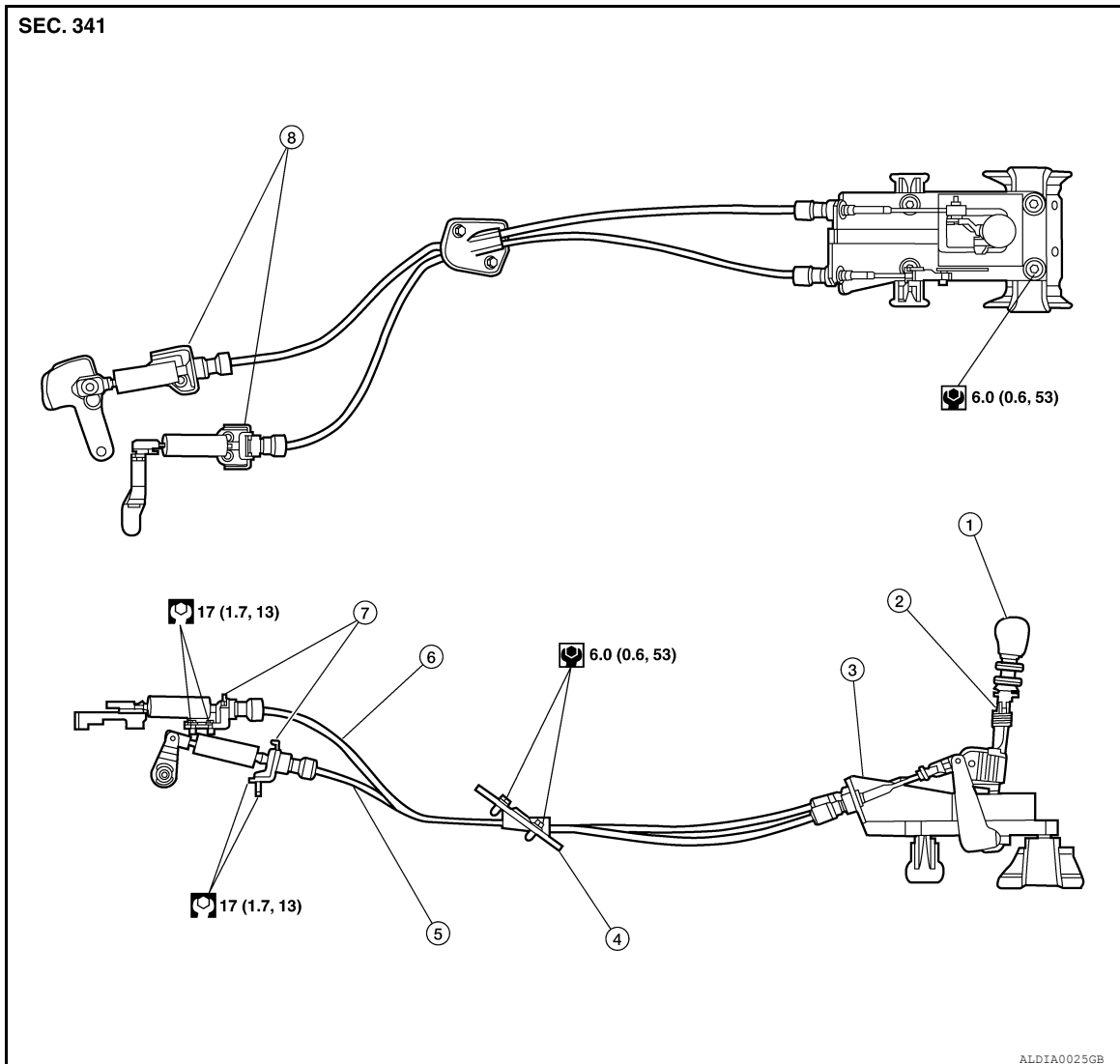
< REMOVAL AND INSTALLATION >

[6MT: RS6F52A]

CONTROL LINKAGE

Exploded View

INFOID:000000006390410



- | | | |
|--------------------------|-------------------|----------------------------|
| 1. Shift selector handle | 2. Shift selector | 3. Shift selector assembly |
| 4. Retainer grommet | 5. Select cable | 6. Shift cable |
| 7. Lock plate | 8. Cable bracket | |

Removal and Installation

INFOID:000000006390411

REMOVAL

1. Remove instrument lower panel (LH). Refer to [IP-19, "Removal and Installation"](#).
2. Remove console side finishers (LH) and (RH). Refer to [IP-22, "Exploded View"](#).
3. Remove shift selector handle.
4. Remove M/T finisher. Refer to [IP-11, "Exploded View"](#).
5. Move shift selector to the neutral position.
6. Remove the air filter assembly. Refer to [EM-25, "Removal and Installation"](#).
7. Remove the shift cable from the shift lever and cable bracket.
8. Remove the select cable from the select lever and cable bracket.
9. Disconnect EVAP drain hose.

CONTROL LINKAGE

< REMOVAL AND INSTALLATION >

[6MT: RS6F52A]

10. Remove the shift cable from the shift selector assembly.
11. Remove the select cable from the shift selector assembly.
12. Remove the bracket covering the retainer grommet.
13. Remove the retainer grommet bolts and retainer grommet.
14. Remove the shift cable and select cable from the vehicle.

INSTALLATION

Installation is in the reverse order of removal.

- Adjust select cable as necessary. Refer to [TM-26, "Adjustment"](#).
- After assembly, make sure shift selector automatically returns to Neutral position when it is moved to 1st/2nd or reverse gate.
- When shift selector is moved to each position, make sure there is no binding or disconnection of cables.

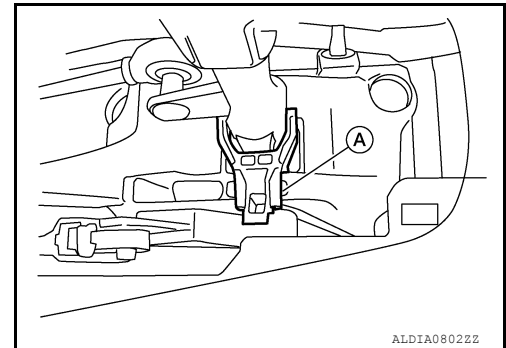
Adjustment

INFOID:000000006390412

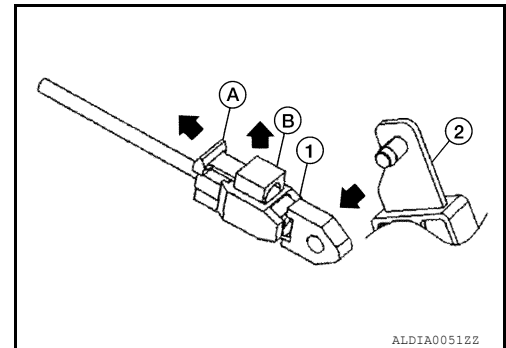
SELECT CABLE ADJUSTMENT

1. Remove the M/T finisher. Refer to [IP-22, "Exploded View"](#).
2. Place the shift selector in the "N" position and install Tool (A) as shown

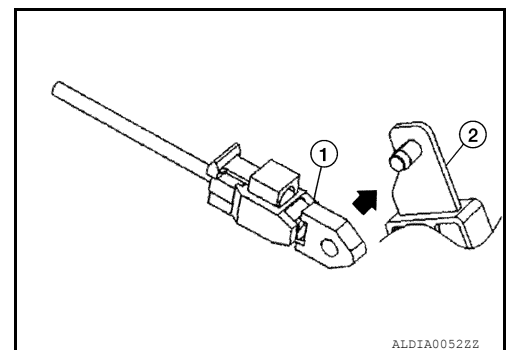
Tool number (—) J-48849



3. Remove the select cable eye end (1) from the select lever (2) of the shift selector assembly.
4. Slide the lock (A) on the select cable eye end (1) away from the cable end.
5. Turn the select cable eye end (1) over and push the stopper (B) to release the adjustment.



6. Install the select cable eye end (1) to the select lever (2) of the shift selector assembly.



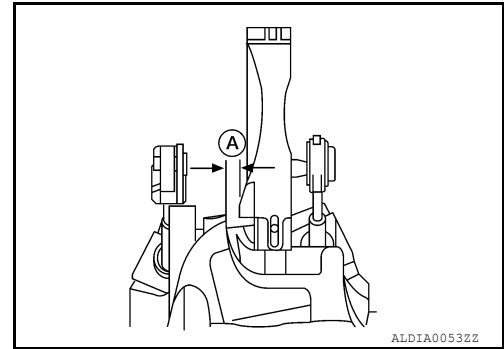
CONTROL LINKAGE

< REMOVAL AND INSTALLATION >

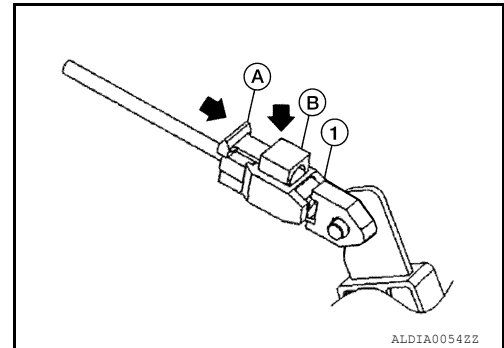
[6MT: RS6F52A]

7. Hold the shift selector lever with the gap between the reverse gate stopper and the shifter base at the specified distance (A).

Distance (A) : 6.3 – 7.0 mm (0.25 – 0.28 in)



8. Push the stopper (B) into the cable eye end housing (1).
9. Slide the lock (A) over the stopper (B).
10. Check for smooth gear select operation.



AIR BREATHER HOSE

< REMOVAL AND INSTALLATION >

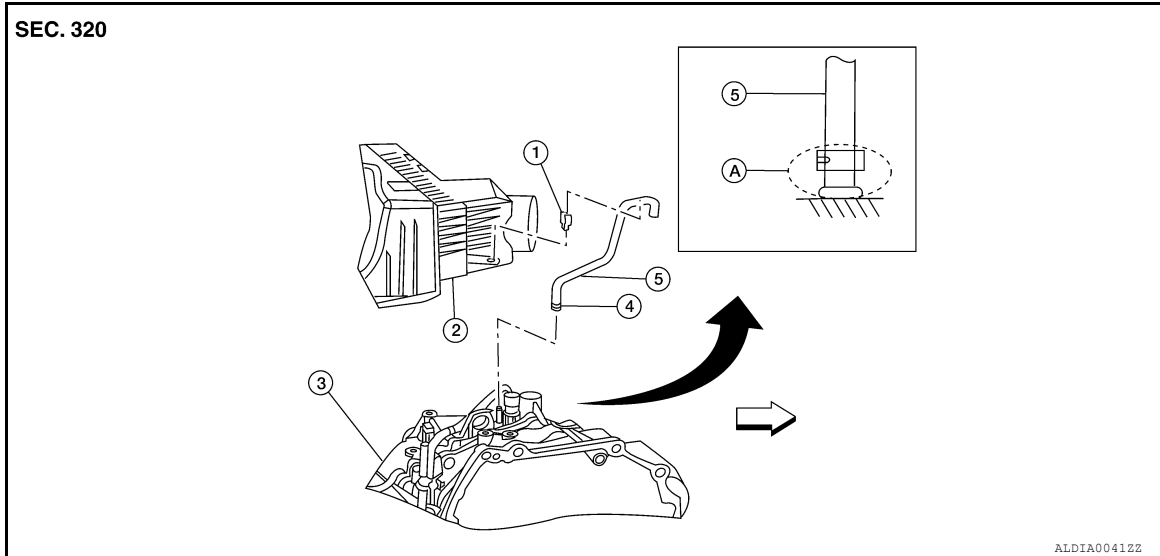
[6MT: RS6F52A]

AIR BREATHER HOSE

Exploded View

INFOID:000000006390413

QR25DE engine models



1. Clip

2. Air cleaner case

3. Transaxle assembly

4. Clip

5. Air breather hose

A. Set paint mark and clip at front side

⇐ Front

Removal and Installation

INFOID:000000006390414

Refer to the figure for air breather hose removal and installation information.

CAUTION:

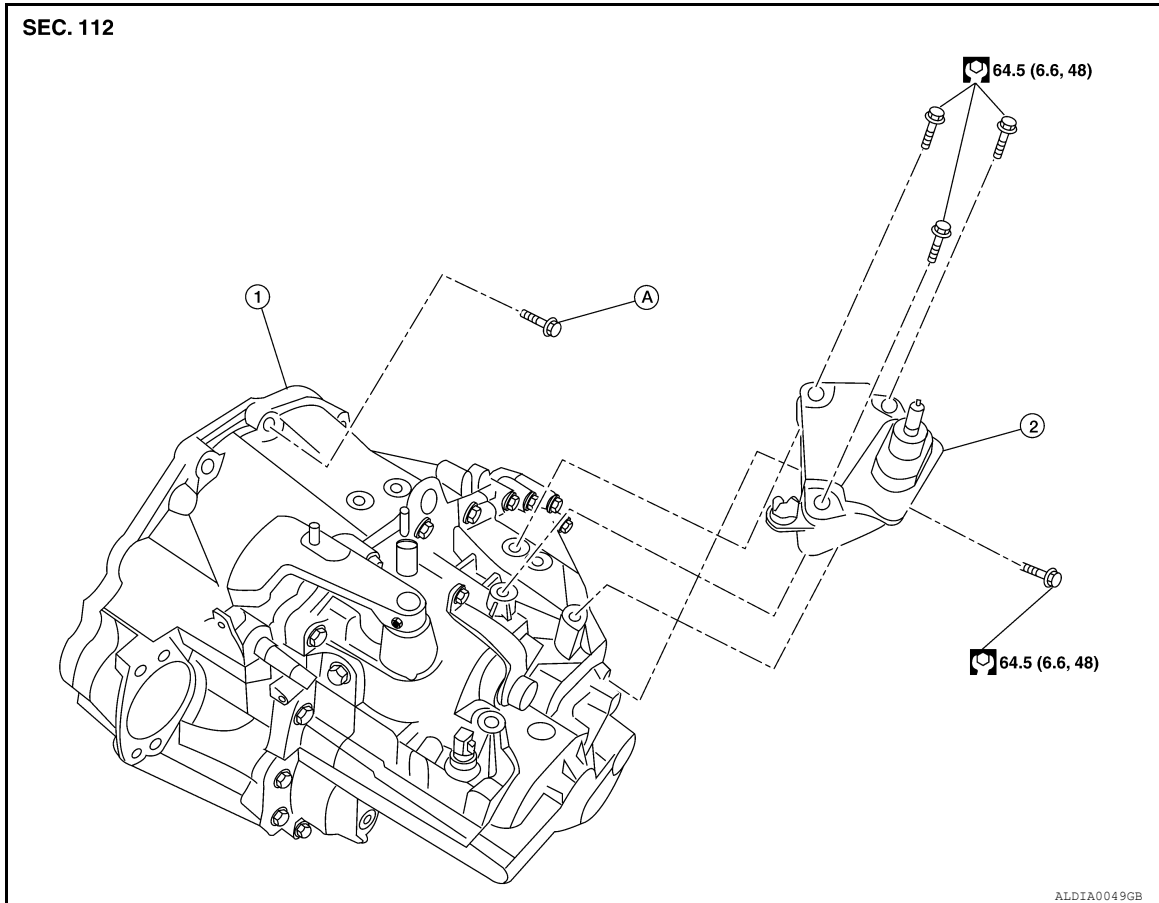
- Install air breather hose with paint mark and clip facing front.
- Install air breather hose onto air breather tube until overlap area reaches the spool.
- Install air breather hose to air cleaner case by fully inserting the clip.
- Make sure there are no pinched or restricted areas on air breather hose caused by bending or winding when installing it.

UNIT REMOVAL AND INSTALLATION

TRANSAXLE ASSEMBLY

Exploded View

INFOID:000000006390415



1. Transaxle assembly

2. LH engine mounting bracket

A. Refer to [TM-29, "Removal and Installation"](#)

Removal and Installation

INFOID:000000006390416

CAUTION:

If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Inserted CSC returns to the original position when removing transaxle assembly. Dust on clutch disc sliding parts may damage CSC seal and may cause clutch fluid leakage.

REMOVAL

1. Remove the engine and transaxle as an assembly. Refer to [EM-73, "Removal and Installation"](#).

CAUTION:

Do not depress clutch pedal during removal procedure.

2. Disconnect the electrical connectors from the following:
 - Back-up lamp switch
 - Park/neutral position switch
3. Remove the harness from the transaxle.
4. Remove the starter motor. Refer to [STR-30, "Removal and Installation"](#).
5. Remove the transaxle to engine and engine to transaxle bolts.
6. Separate the transaxle from the engine.
7. If necessary remove the following:

TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[6MT: RS6F52A]

- Air breather hose
- Switches
- LH engine mount
- Brackets

INSTALLATION

Installation is in the reverse order of removal.

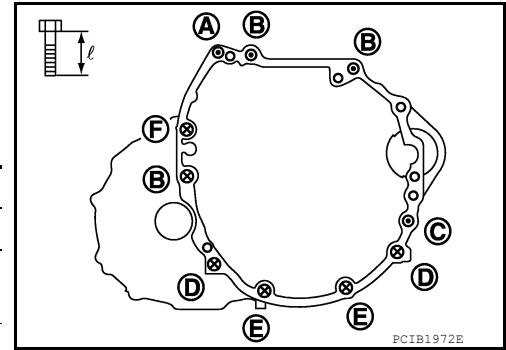
- If transaxle is removed from the vehicle, always replace CSC. Refer to [CL-13, "Removal and Installation"](#).
- When installing the transaxle assembly to the engine, install the bolts following the standard below.

CAUTION:

When installing transaxle assembly do not bring transaxle input shaft into contact with clutch cover.

- : Transaxle to engine
- ⊗ : Engine to transaxle

Bolt symbol	A	B	C	D	E	F
Quantity	1	3	1	2	2	1
Bolt length "ℓ" mm (in)	45 (1.77)	80 (3.15)	45 (1.77)	35 (1.38)	45 (1.77)	
Tightening torque N·m (kg - m, ft- lb)	35.3 (3.6, 26)	74.5 (7.6, 55)	42.7 (4.4, 31)	48.0 (4.9, 35)		



- Bleed the air from the clutch hydraulic system. Refer to [CL-7, "Air Bleeding Procedure"](#).
- After installation, check oil level, and check for leaks and loose mechanisms. Refer to [TM-19, "Inspection"](#).

TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

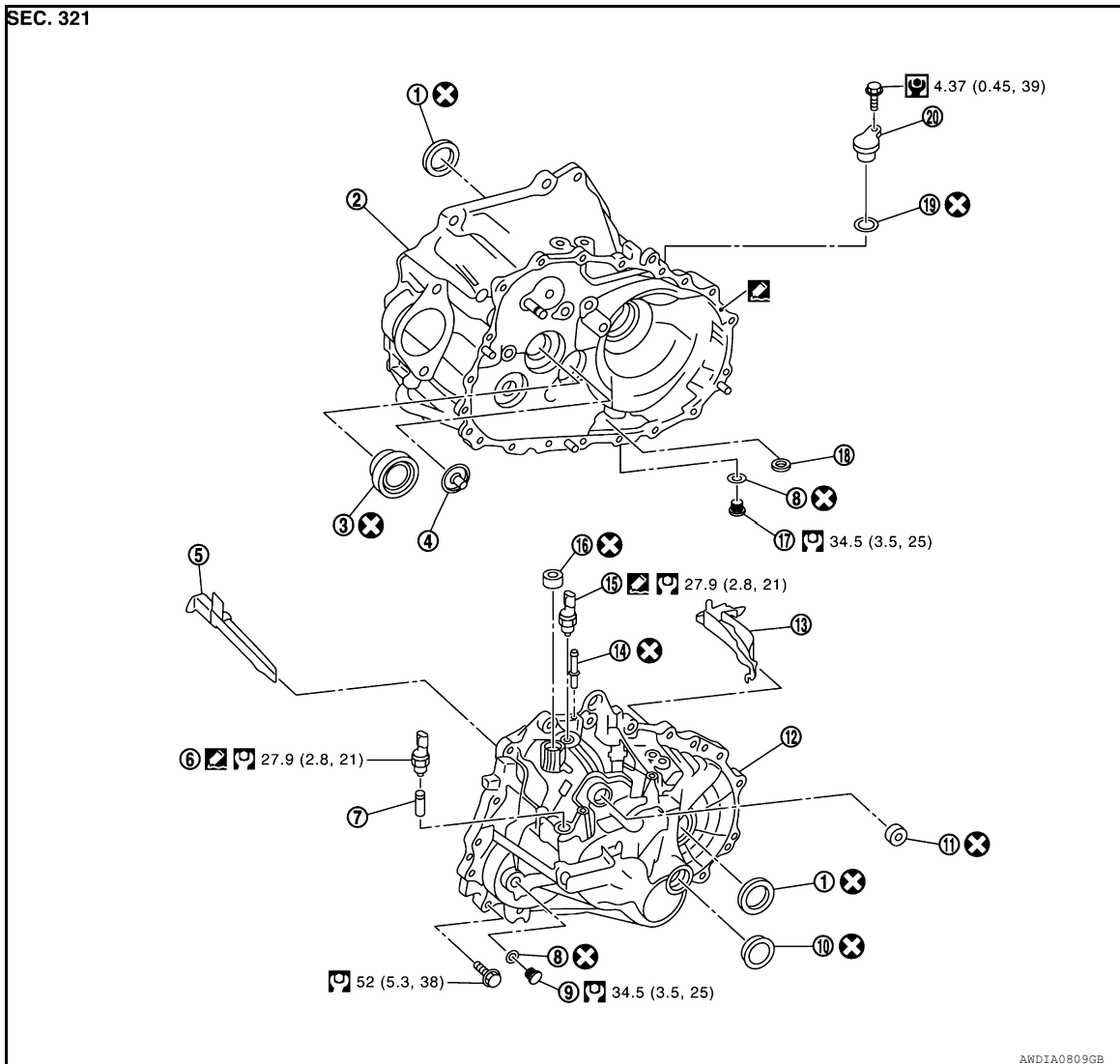
UNIT DISASSEMBLY AND ASSEMBLY

TRANSAXLE ASSEMBLY

Exploded View

INFOID:000000006390417

CASE AND HOUSING



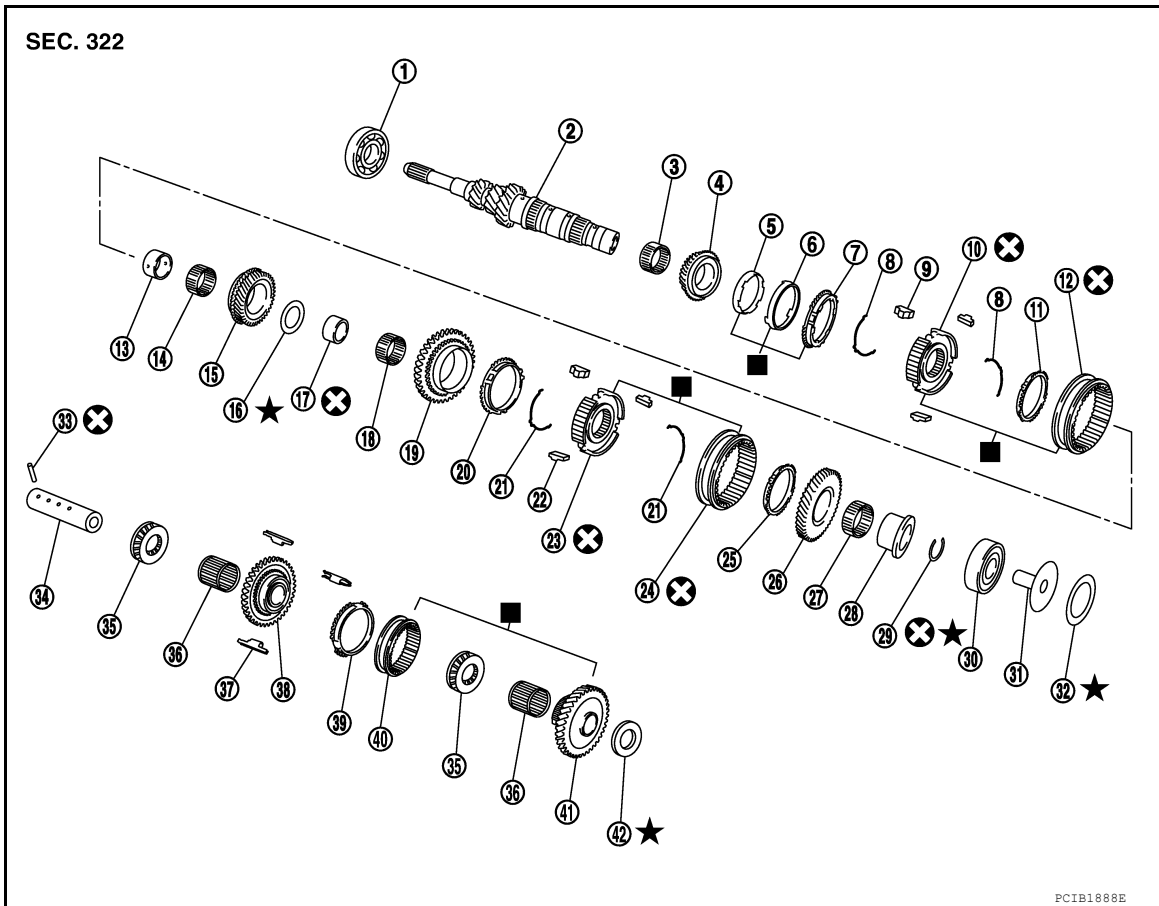
- | | | |
|-------------------------------|---------------------------|----------------------------------|
| 1. Differential side oil seal | 2. Clutch housing | 3. Input shaft oil seal |
| 4. Oil channel | 5. Oil gutter A | 6. Back-up lamp switch |
| 7. Plunger | 8. Gasket | 9. Plug |
| 10. Bore plug | 11. Striking rod oil seal | 12. Transaxle case |
| 13. Oil gutter B | 14. Air breather tube | 15. Park/neutral position switch |
| 16. Shifter lever oil seal | 17. Drain plug | 18. Magnet |
| 19. O-ring | 20. Filler plug | |

SHAFT AND GEAR

TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]



- | | | |
|------------------------------|---|---------------------------------------|
| 1. Input shaft front bearing | 2. Input shaft | 3. 3rd needle bearing |
| 4. 3rd input gear | 5. 3rd inner baulk ring | 6. 3rd synchronizer cone |
| 7. 3rd outer baulk ring | 8. 3rd-4th spread spring | 9. 3rd-4th shifting insert |
| 10. 3rd-4th synchronizer hub | 11. 4th baulk ring | 12. 3rd-4th coupling sleeve |
| 13. 4th input gear bushing | 14. 4th needle bearing | 15. 4th input gear |
| 16. Thrust washer | 17. 5th input gear bushing | 18. 5th needle bearing |
| 19. 5th input gear | 20. 5th baulk ring | 21. 5th-6th spread spring |
| 22. 5th-6th shifting insert | 23. 5th-6th synchronizer hub | 24. 5th-6th coupling sleeve |
| 25. 6th baulk ring | 26. 6th input gear | 27. 6th needle bearing |
| 28. 6th input gear bushing | 29. Snap ring | 30. Input shaft rear bearing |
| 31. Oil channel | 32. Input shaft rear bearing adjusting shim | 33. Retaining pin |
| 34. Reverse idler shaft | 35. Thrust needle bearing | 36. Reverse idler gear needle bearing |
| 37. Reverse insert spring | 38. Reverse idler gear (Front) | 39. Reverse baulk ring |
| 40. Reverse coupling sleeve | 41. Reverse idler gear (Rear) | 42. Reverse idler gear adjusting shim |

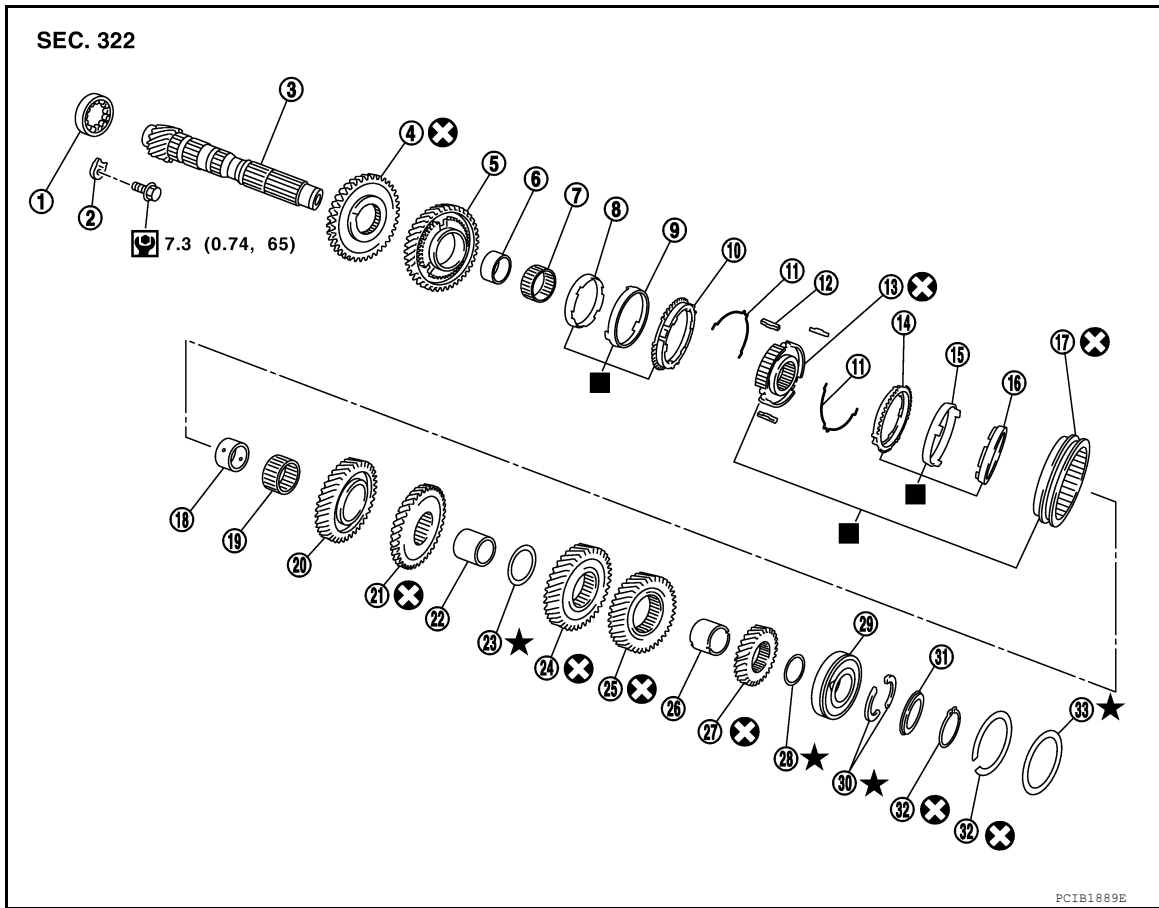
■: Replace the parts as a set.

- Apply gear oil to gears, shafts, synchronizers, and bearings during assembly.

TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]



- | | | |
|----------------------------------|-------------------------------|---|
| 1. Mainshaft front bearing | 2. Mainshaft bearing retainer | 3. Mainshaft |
| 4. Reverse main gear | 5. 1st main gear | 6. 1st main gear bushing |
| 7. 1st needle bearing | 8. 1st inner baulk ring | 9. 1st synchronizer cone |
| 10. 1st outer baulk ring | 11. 1st-2nd spread spring | 12. 1st-2nd shifting insert |
| 13. 1st-2nd synchronizer hub | 14. 2nd outer baulk ring | 15. 2nd synchronizer cone |
| 16. 2nd inner baulk ring | 17. 1st-2nd coupling sleeve | 18. 2nd main gear bushing |
| 19. 2nd needle bearing | 20. 2nd main gear | 21. 3rd main gear |
| 22. 3rd-4th mainshaft spacer | 23. 4th main adjusting shim | 24. 4th main gear |
| 25. 5th main gear | 26. 5th-6th mainshaft spacer | 27. 6th main gear |
| 28. 6th main gear adjusting shim | 29. Mainshaft rear bearing | 30. Mainshaft C-ring |
| 31. C-ring holder | 32. Snap ring | 33. Mainshaft rear bearing adjusting shim |

■: Replace the parts as a set.

- Apply gear oil to gears, shafts, synchronizers, and bearings during assembly.

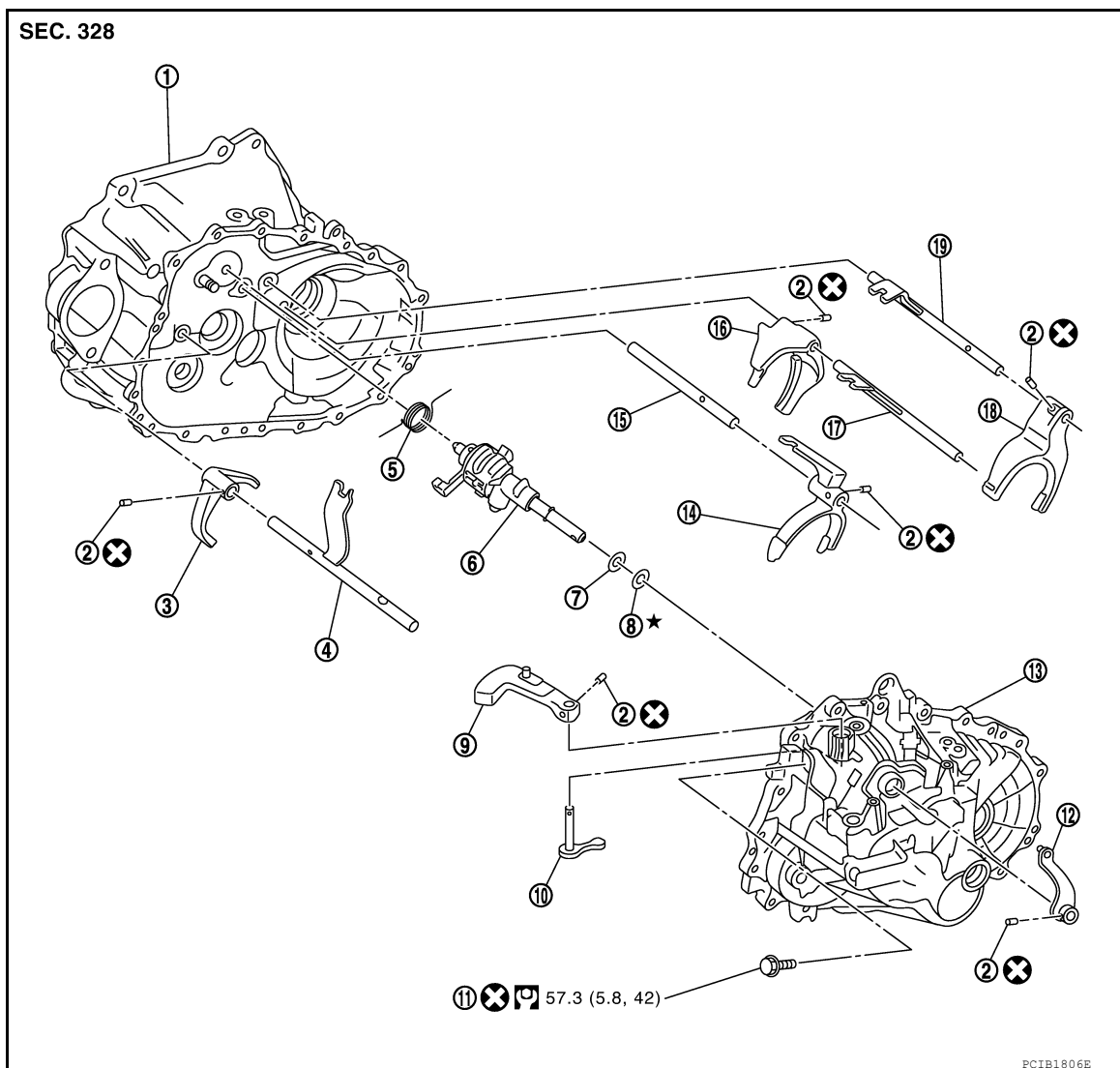
SHIFT FORK AND FORK ROD

TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

SEC. 328



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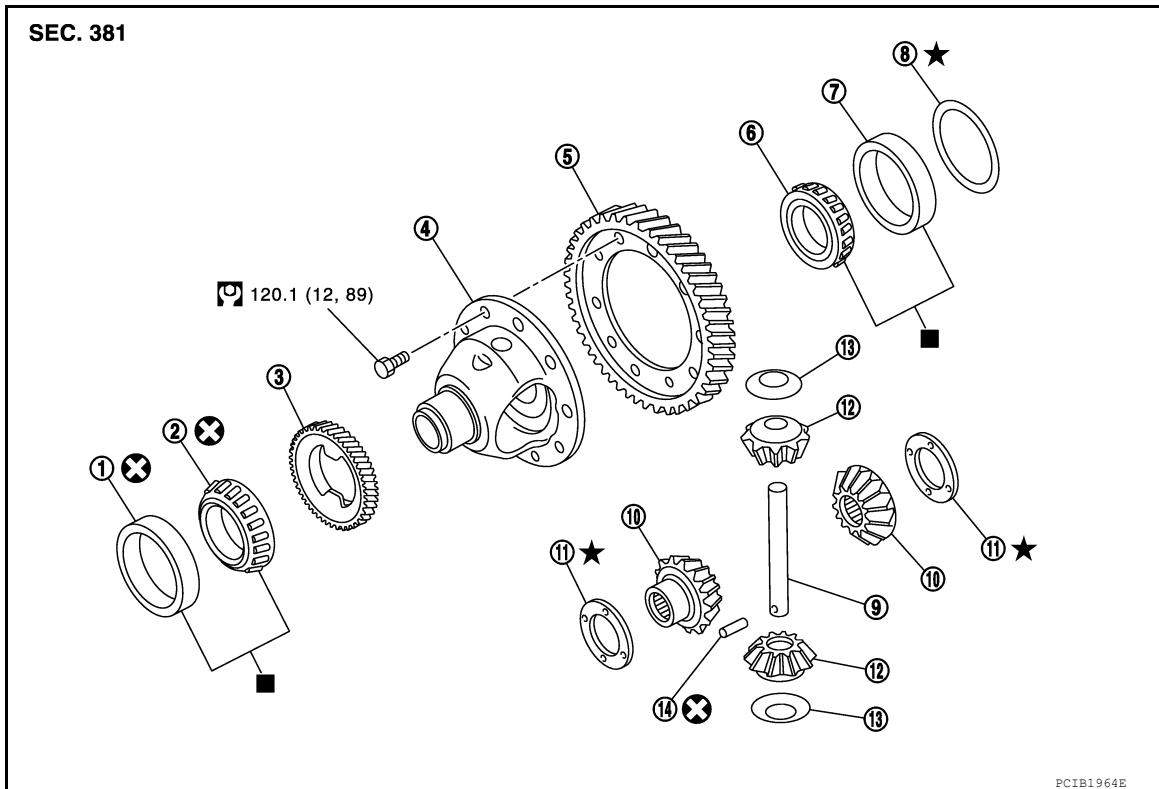
- | | | |
|------------------------|--------------------------------|--------------------------|
| 1. Clutch housing | 2. Retaining pin | 3. Reverse shift fork |
| 4. Reverse fork rod | 5. Return spring | 6. Striking rod assembly |
| 7. Striking rod shim | 8. Striking rod adjusting shim | 9. Shifter lever A |
| 10. Shifter lever B | 11. Guide bolt | 12. Selector lever |
| 13. Transaxle case | 14. 3rd-4th shift fork | 15. 3rd-4th fork rod |
| 16. 1st-2nd shift fork | 17. 1st-2nd fork rod | 18. 5th-6th shift fork |
| 19. 5th-6th fork rod | | |

FINAL DRIVE

TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

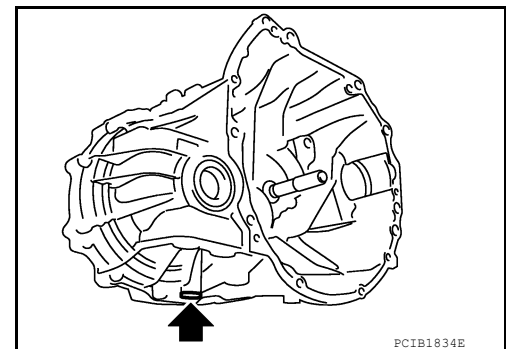


- | | | |
|---|--|--|
| 1. Differential side bearing outer race (clutch housing side) | 2. Differential side bearing (clutch housing side) | 3. Speedometer drive gear |
| 4. Differential case | 5. Final gear | 6. Differential side bearing (transaxle case side) |
| 7. Differential side bearing outer race (transaxle case side) | 8. Differential side bearing adjusting shim | 9. Pinion mate shaft |
| 10. Side gear | 11. Side gear thrust washer | 12. Pinion mate gear |
| 13. Pinion mate thrust washer | 14. Retaining pin | ■ Replace parts as a set |

Disassembly

INFOID:000000006390418

1. Remove drain plug and gasket from clutch housing.
2. Remove filler plug and then plug and o-ring.

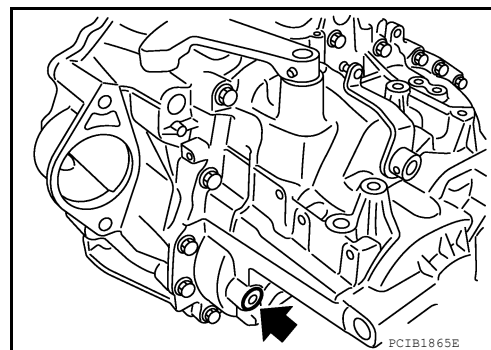


TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

3. Remove plug and gasket from transaxle case.

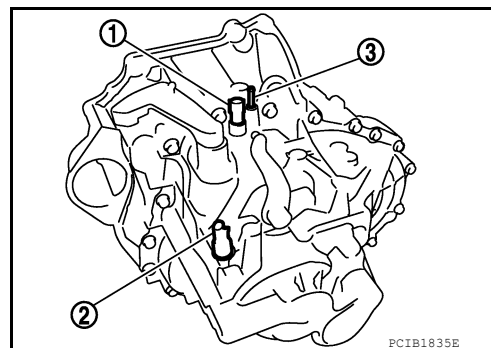


4. Remove transmission range switch (1) from transaxle case.
5. Remove back-up lamp switch (2) and plunger from transaxle case.

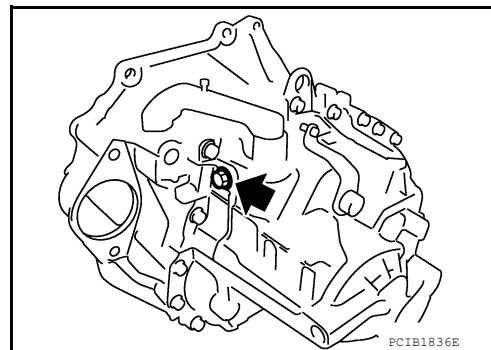
CAUTION:

Do not lose plunger.

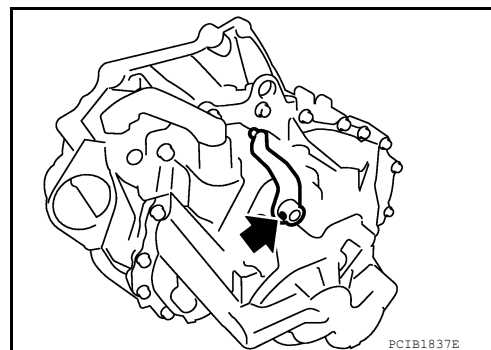
6. Remove air breather tube (3) from transaxle case.



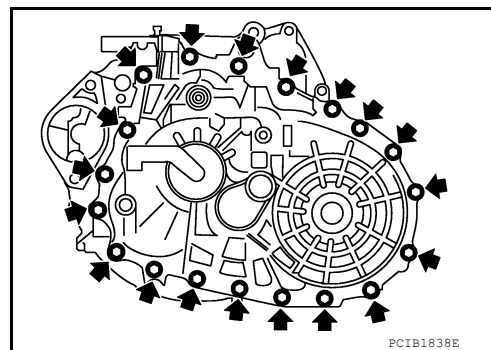
7. Remove guide bolt from transaxle case.



8. Remove retaining pin using suitable tool and then remove selector lever from transaxle case.



9. Remove transaxle case bolts.



TRANSAXLE ASSEMBLY

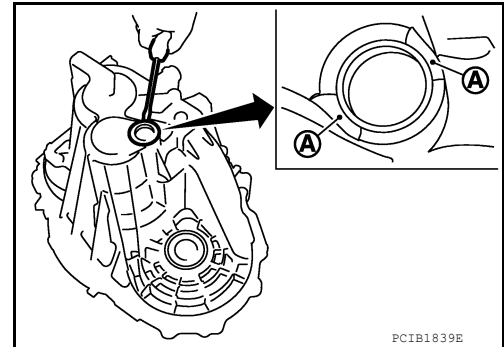
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

10. Remove bore plug from transaxle case.

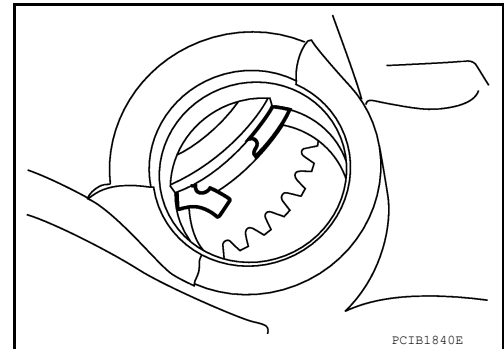
CAUTION:

- Do not damage transaxle case.
- Access bore plug from cutout (A) of transaxle case when removing.



11. Remove transaxle case following the procedures below.

- a. Expand snap ring at mainshaft rear bearing accessing from the bore plug hole. Then pull up transaxle case from clutch housing until snap ring comes off.



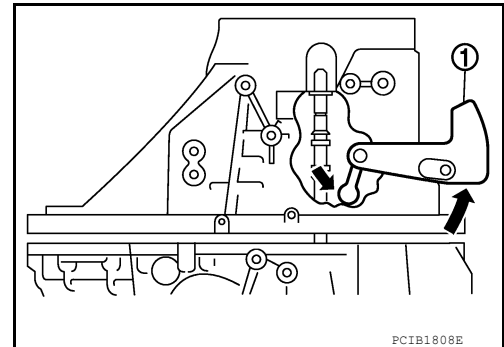
- b. With shifter lever A (1) held in the position shown, remove transaxle case from clutch housing.

CAUTION:

Do not drop each adjusting shim.

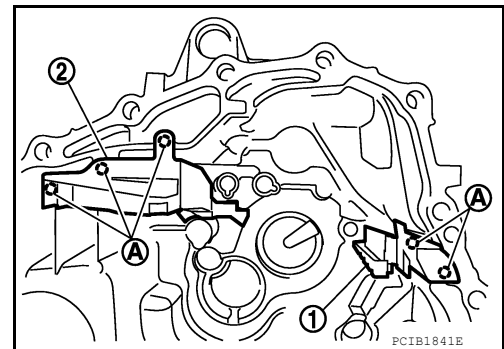
NOTE:

Make sure to hold shifter lever A (1) in the position shown. Otherwise transaxle case cannot be removed from clutch housing.



12. Remove oil gutter A (1) and oil gutter B (2) from transaxle case.

A : Tab of oil gutter

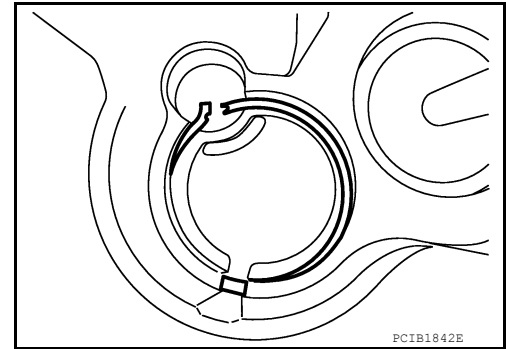


TRANSAXLE ASSEMBLY

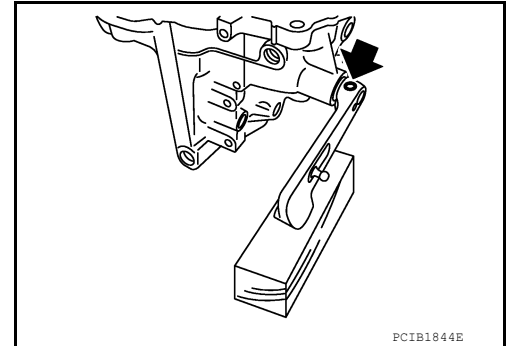
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

13. Remove snap ring from transaxle case.



14. Remove retaining pin using suitable tool and then remove shifter lever A and shifter lever B from transaxle case.

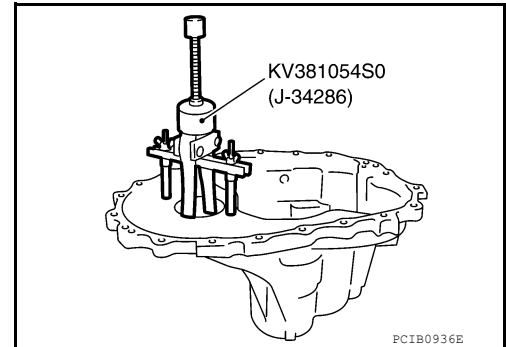


15. Remove differential side bearing outer race from transaxle case using Tool, then remove differential side bearing adjusting shim from transaxle case.

Tool number :KV381054S0 (J-34286)

CAUTION:

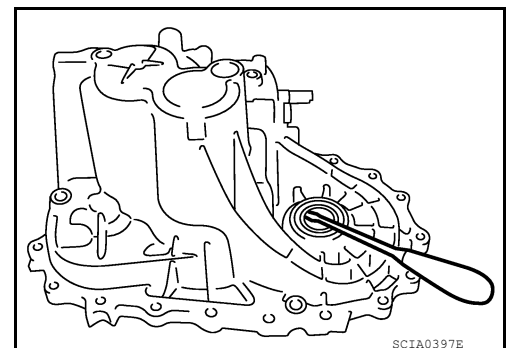
Do not damage transaxle case.



16. Remove differential side oil seal from transaxle case using suitable tool.

CAUTION:

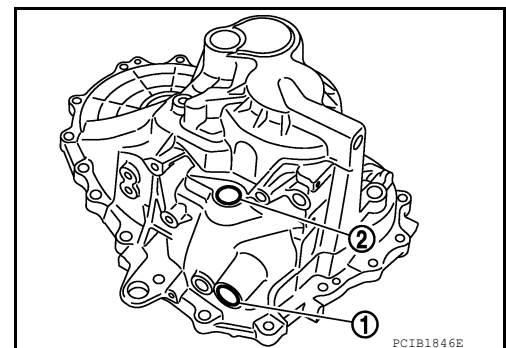
Do not damage transaxle case.



17. Remove shifter lever oil seal (1) and striking rod oil seal (2) from transaxle case.

CAUTION:

Do not damage transaxle case.

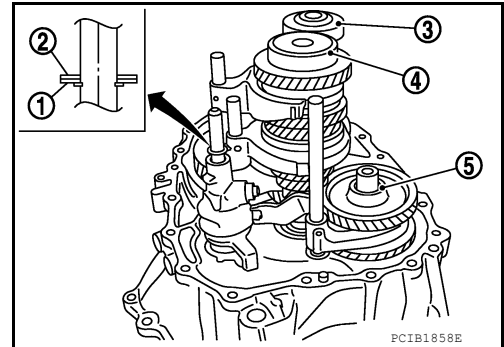


TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

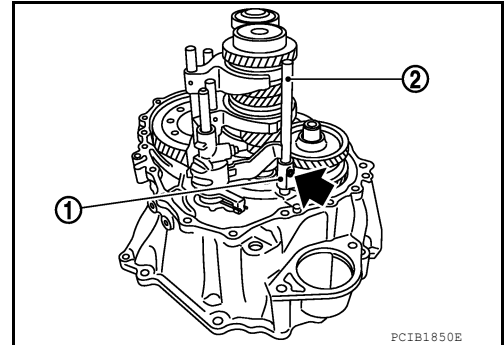
[6MT: RS6F52A]

18. Remove striking rod shim (1), striking rod adjusting shim (2), mainshaft rear bearing adjusting shim (3), input shaft rear bearing adjusting shim (4), and reverse idler gear adjusting shim (5).



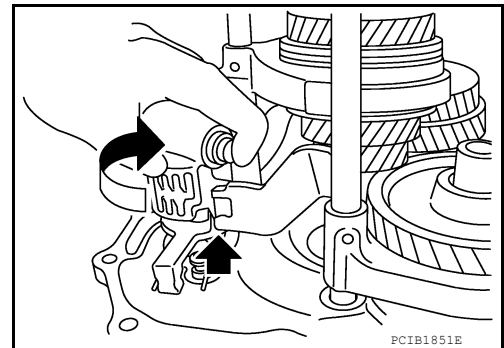
19. Remove retaining pin of reverse shift fork (1) using suitable tool.

2 : Reverse fork rod



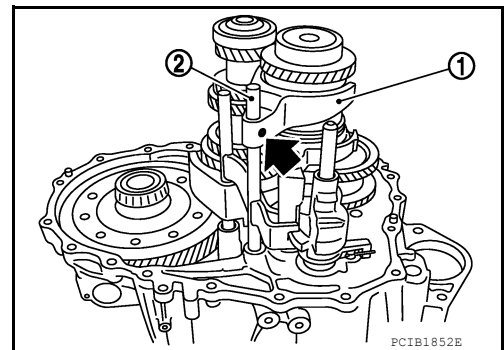
20. Rotate striking lever of striking rod assembly as shown. Then rotate reverse fork rod to a position where bracket of reverse fork rod does not interfere with striking lever of striking rod assembly.

21. Pull out reverse shift fork and reverse fork rod.



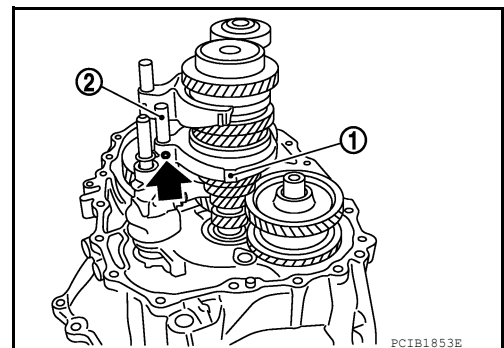
22. Remove retaining pin of 5th-6th shift fork (1) using suitable tool.

2 : 5th-6th fork rod



23. Remove retaining pin of 3rd-4th shift fork (1) using suitable tool.

24. Pull out 3rd-4th fork rod (2).

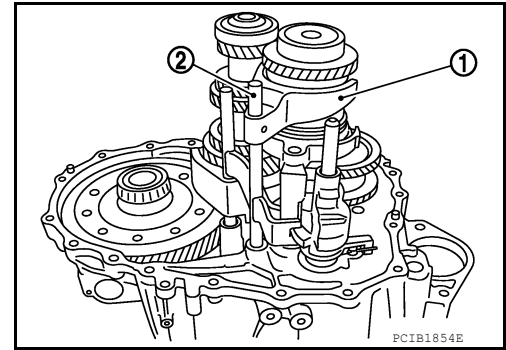


TRANSAXLE ASSEMBLY

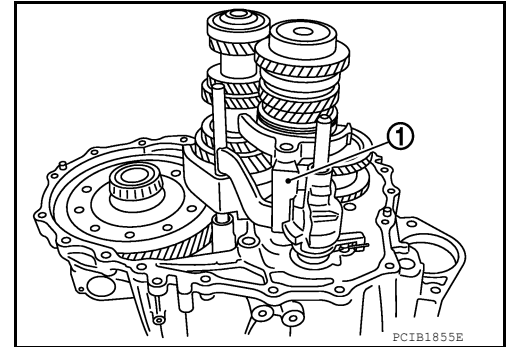
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

25. Pull out 5th-6th shift fork (1) and 5th-6th fork rod (2).

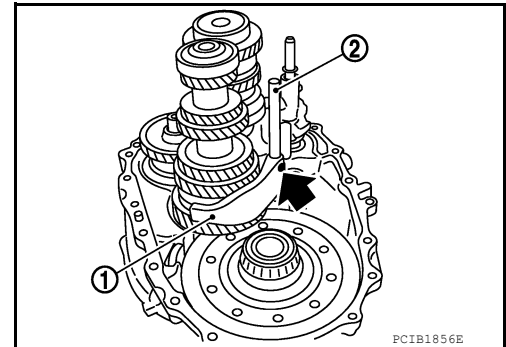


26. Pull out 3rd-4th shift fork (1).

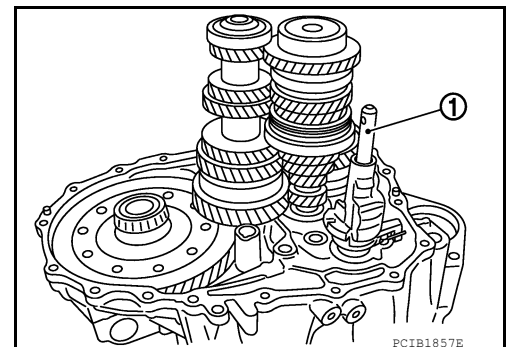


27. Remove retaining pin of 1st-2nd shift fork (1) using suitable tool.

28. Pull out 1st-2nd shift fork and 1st-2nd fork rod (2).



29. Remove striking rod assembly (1).



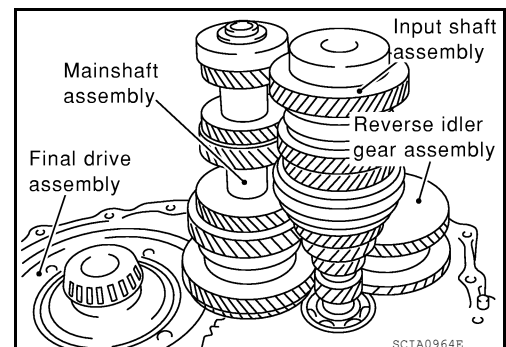
30. Remove gear components from clutch housing in the following procedure.

- Remove a set of input shaft assembly, mainshaft assembly, and reverse idler gear assembly by tapping the tip of input shaft from the back of the clutch housing with a plastic hammer.

CAUTION:

Always withdraw mainshaft straight out. Failure to do so can damage resin oil channel on clutch housing side.

- Remove final drive assembly.

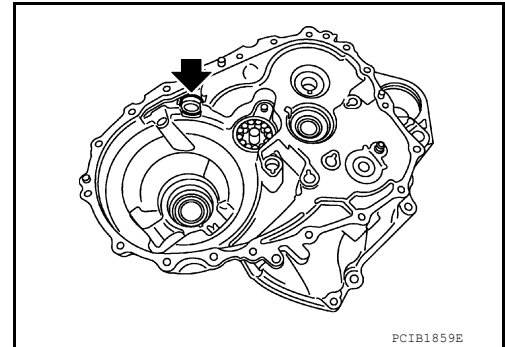


TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

31. Remove magnet from clutch housing.



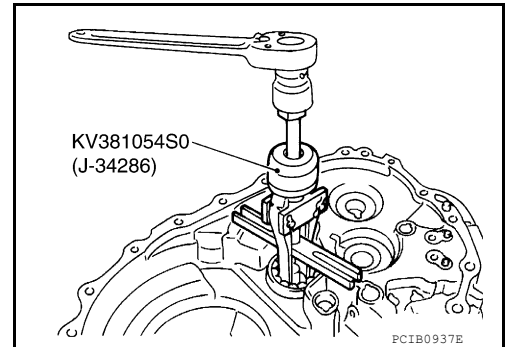
32. Remove mainshaft bearing retainer and then mainshaft front bearing from clutch housing using Tool.

Tool number :KV381054S0 (J-34286)

CAUTION:

Do not damage clutch housing, mainshaft front bearing, and oil channel.

33. Remove oil channel from clutch housing.

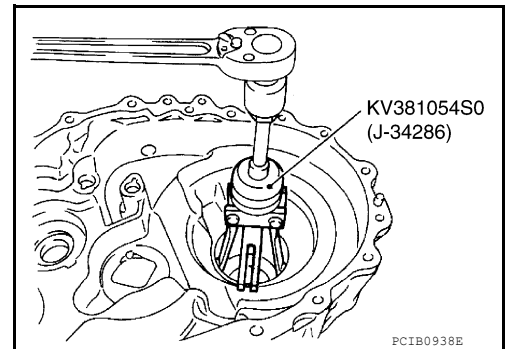


34. Remove differential side bearing outer race from clutch housing using Tool.

Tool number :KV381054S0 (J-34286)

CAUTION:

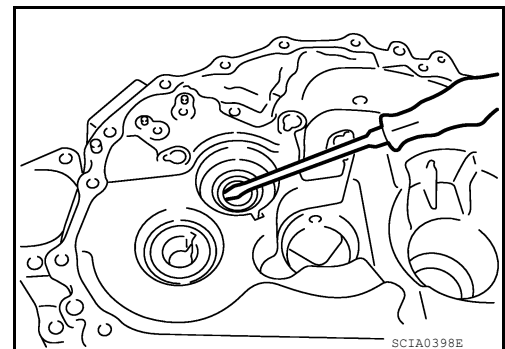
Do not damage clutch housing and differential side bearing outer race.



35. Remove input shaft oil seal from clutch housing using suitable tool.

CAUTION:

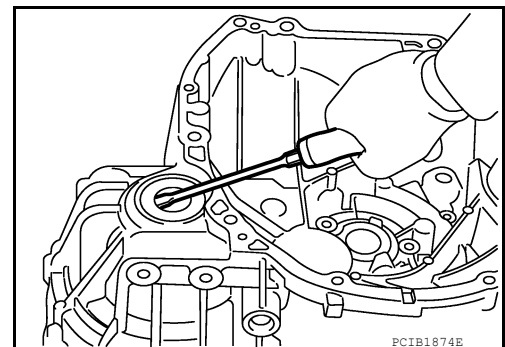
Do not damage clutch housing.



36. Remove differential side oil seal from clutch housing using suitable tool.

CAUTION:

Do not damage clutch housing.



TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

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Assembly

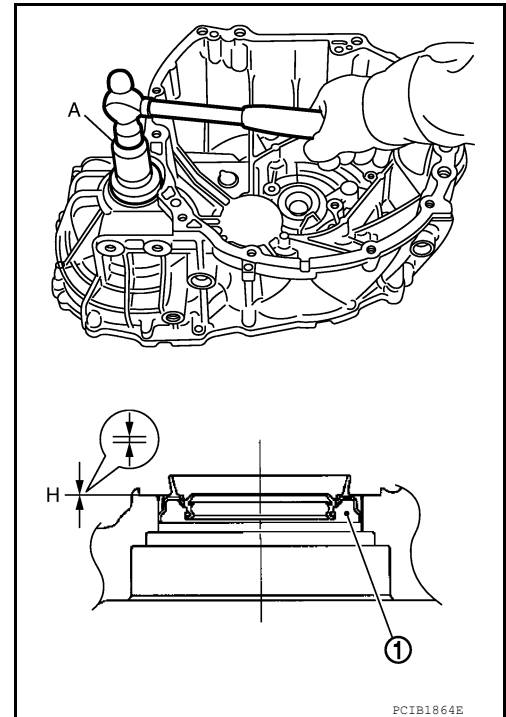
1. Install differential side oil seal (1) to clutch housing using Tool (A).

Dimension (H) : -0.5 - 0.5 mm (-0.020 - 0.020 in)

Tool number : ST33400001 (J-26082)

CAUTION:

- Do not reuse differential side oil seal.
- When installing, do not incline differential side oil seal.
- Do not damage clutch housing.



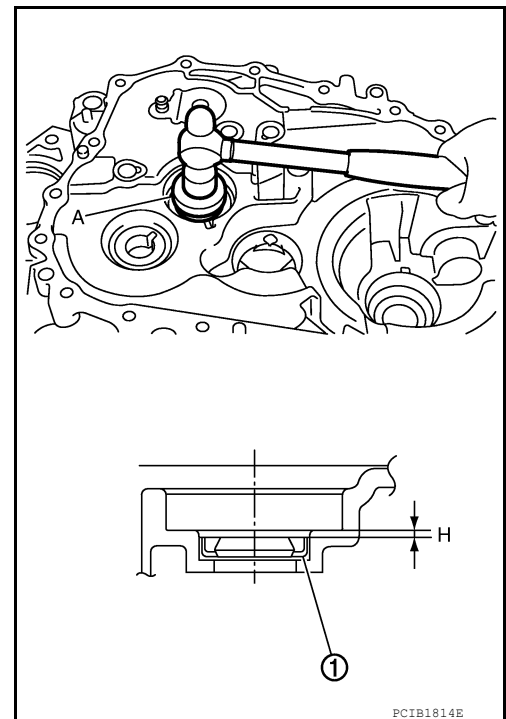
2. Install input shaft oil seal (1) to clutch housing using Tool (A).

Dimension (H) : 1.1 - 2.1 mm (0.043 - 0.083 in)

Tool number : ST35321000 (—)

CAUTION:

- Do not reuse input shaft oil seal.
- When installing, do not incline input shaft oil seal.
- Do not damage clutch housing.



TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

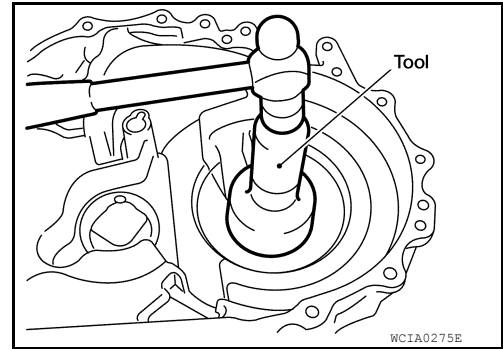
[6MT: RS6F52A]

3. Install differential side bearing outer race to clutch housing using Tool.

Tool number : ST30720000 (J-25405)

CAUTION:

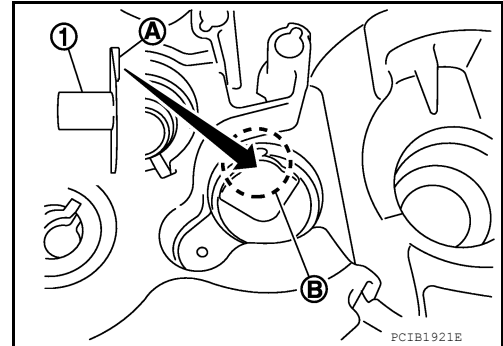
Replace differential side bearing and differential side bearing outer race as a set.



4. Install oil channel (1) on mainshaft side.

CAUTION:

When installing oil channel, fit the rib (A) of oil channel into the processed area of the spot facing (B).

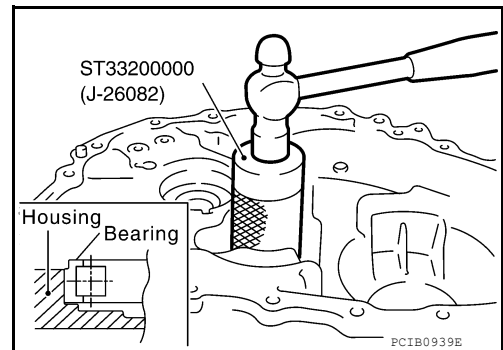


5. Install mainshaft front bearing to clutch housing using Tool.

Tool number : ST33200000 (J-26082)

CAUTION:

Be careful with the orientation of mainshaft front bearing.



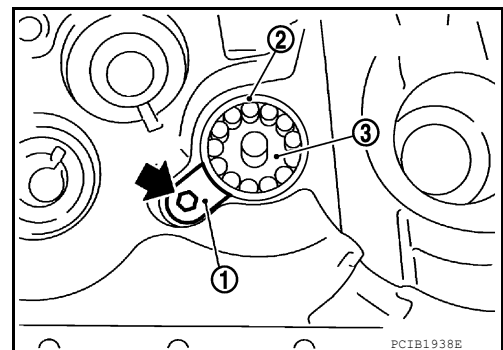
6. Install mainshaft bearing retainer (1) to clutch housing and tighten bolt to the specified torque.

2 : Mainshaft front bearing

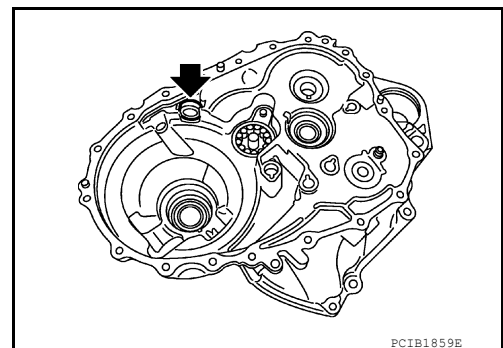
3 : Oil channel

CAUTION:

Install with punched surface facing up.



7. Install magnet to clutch housing.

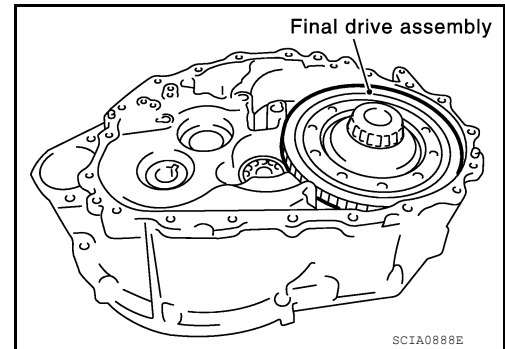


TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

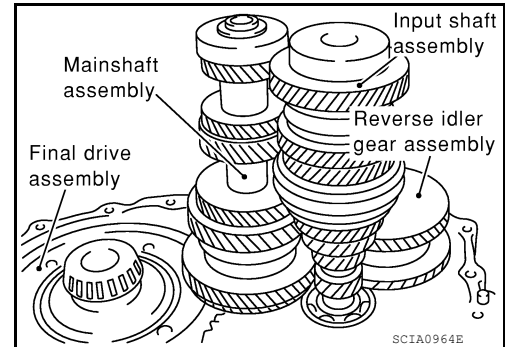
8. Install final drive assembly into clutch housing.



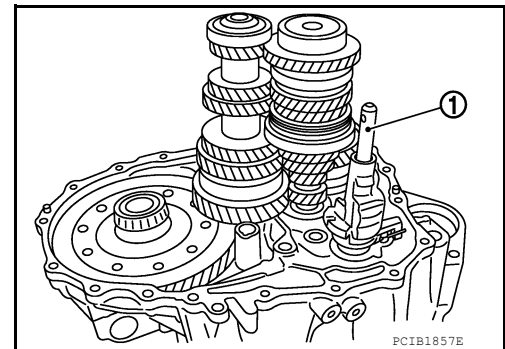
9. Install input shaft assembly, mainshaft assembly, and reverse idler gear assembly into clutch housing.

CAUTION:

- Wrap tape to the spline of input shaft so as not to damage the input shaft oil seal.
- Be careful with the orientation of reverse idler shaft.

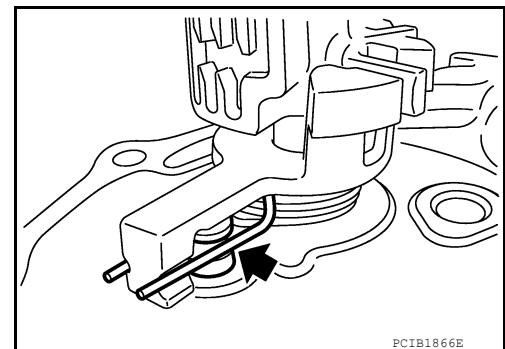


10. Install striking rod assembly (1) into clutch housing.



CAUTION:

- Check that return spring is securely seated in the groove on return pin.



TRANSAXLE ASSEMBLY

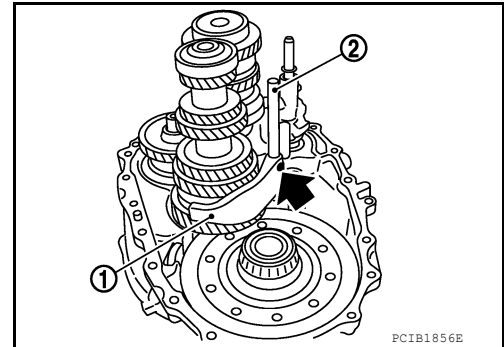
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

11. Install 1st-2nd shift fork (1) and 1st-2nd fork rod (2) and then install retaining pin to 1st-2nd shift fork.

CAUTION:

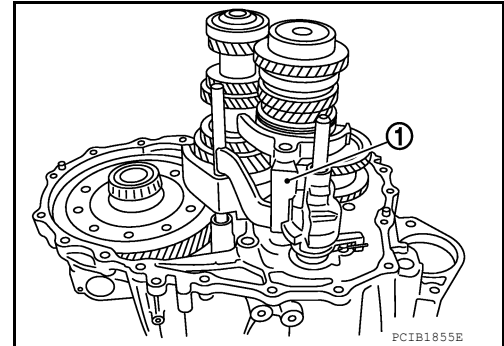
- Do not reuse retaining pin.
- Be careful with the orientation of 1st-2nd shift fork and 1st-2nd fork rod.
- Assemble retaining pin from the direction shown until it becomes flush with the end surface of 1st-2nd shift fork.



12. Install 3rd-4th shift fork (1) to 3rd-4th coupling sleeve.

CAUTION:

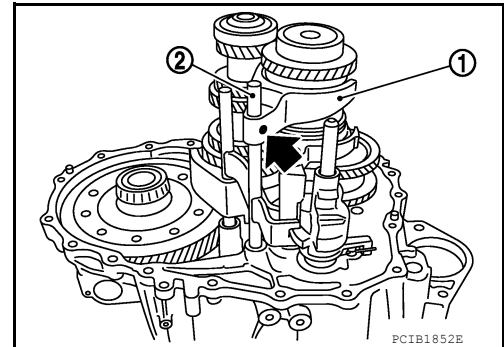
- Be careful with the orientation of 3rd-4th shift fork.



13. Install 5th-6th shift fork (1) and 5th-6th fork rod (2) and then install retaining pin to 5th-6th shift fork.

CAUTION:

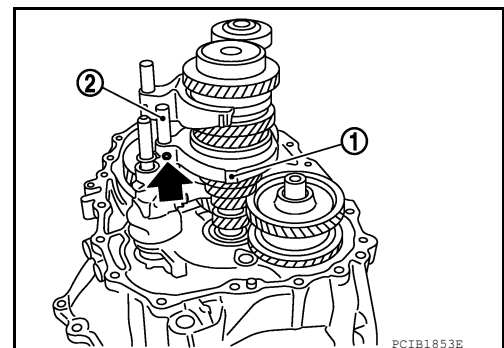
- Do not reuse retaining pin.
- Be careful with the orientation of 5th-6th shift fork and 5th-6th fork rod.
- Assemble retaining pin from the direction shown until it becomes flush with the end surface of 5th-6th shift fork.



14. Install 3rd-4th fork rod (2) and then install retaining pin to 3rd-4th shift fork (1).

CAUTION:

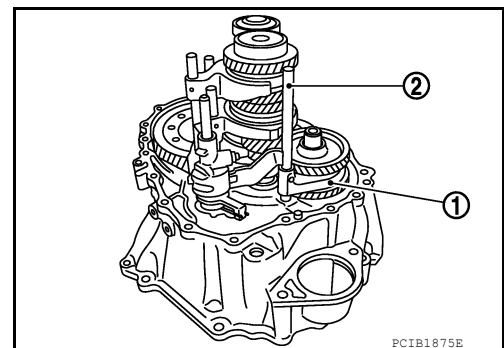
- Do not reuse retaining pin.
- Be careful with the orientation of 3rd-4th fork rod.
- Assemble retaining pin from the direction shown until it becomes flush with the end surface of 3rd-4th shift fork.



15. Install reverse shift fork (1) and reverse fork rod (2).

CAUTION:

- Be careful with the orientation of reverse shift fork and reverse fork rod.

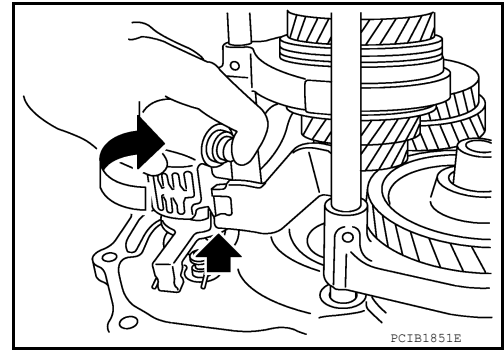


TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

16. Rotate striking lever of striking rod assembly as shown. Then rotate reverse fork rod to a position where bracket of reverse fork rod does not interfere with striking lever of striking rod assembly.

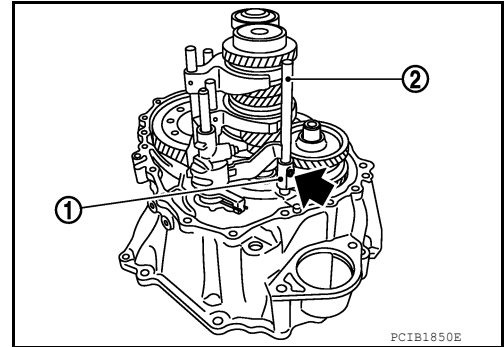


17. Install retaining pin to reverse shift fork (1).

2 : Reverse fork rod

CAUTION:

- Do not reuse retaining pin.
- Assemble retaining pin from the direction shown until it becomes flush with the end surface of reverse shift fork.

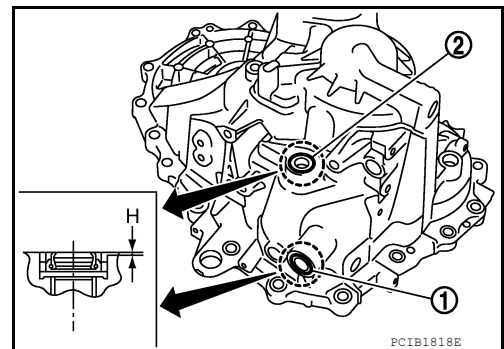


18. Install selected differential side bearing adjusting shim(s) and differential side bearing outer race.
- For selection of adjusting shim(s), refer to [TM-52, "Adjustment"](#).
19. Install selected reverse idler gear adjusting shim onto reverse idler gear assembly.
- For selection of adjusting shim, refer to [TM-52, "Adjustment"](#).
20. Install selected input shaft rear bearing adjusting shim onto input shaft.
- For selection of adjusting shim, refer to [TM-52, "Adjustment"](#).
21. Install selected striking rod adjusting shim onto striking rod assembly.
- For selection of adjusting shim, refer to [TM-52, "Adjustment"](#).
22. Install shifter lever oil seal (1) and striking rod oil seal (2) to transaxle case using suitable tool.

Dimension (H) : 0 - 1.0 mm (0 - 0.039 in)

CAUTION:

- Do not reuse shifter lever oil seal and striking rod oil seal.
- When installing, do not incline shifter lever oil seal and striking rod oil seal.
- Do not damage transaxle case.



TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

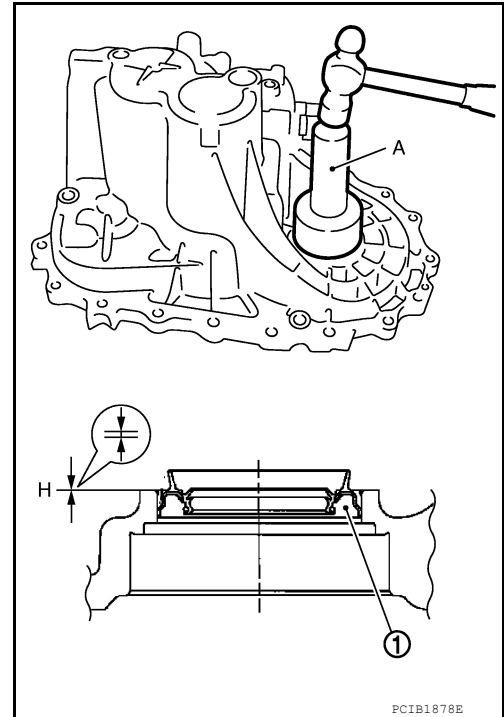
23. Install differential side oil seal (1) to transaxle case using Tool (A).

Dimension (H) : -0.5 - 0.5 mm (-0.020 - 0.020 in)

Tool number : ST30720000 (J-25405)

CAUTION:

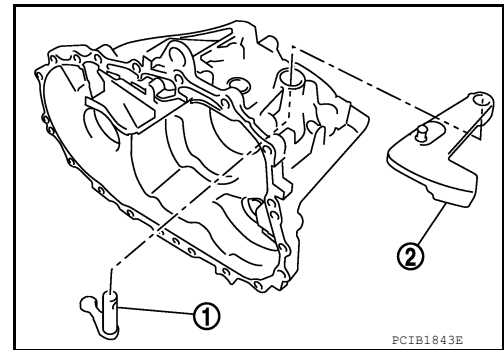
- Do not reuse differential side oil seal.
- When installing, do not incline differential side oil seal.
- Do not damage transaxle case.



24. Install shifter lever B (1) and shifter lever A (2) to transaxle case.

CAUTION:

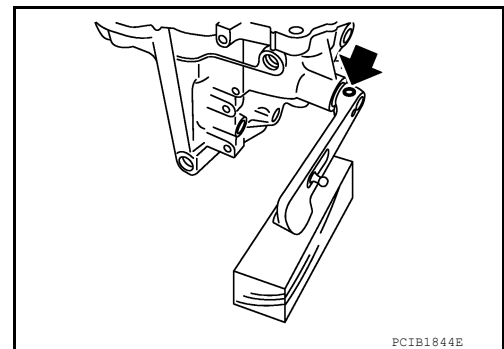
Be careful with the orientation of shifter lever B and shifter lever A.



25. Install retaining pin to shifter lever A.

CAUTION:

- Do not reuse retaining pin.
- Assemble retaining pin from the direction shown until it becomes flush with the end surface of shifter lever A.



26. Install transaxle case according to the following:

- a. Install selected mainshaft rear bearing adjusting shim into transaxle case.
- For selection of adjusting shim, refer to [TM-52. "Adjustment"](#).

TRANSAXLE ASSEMBLY

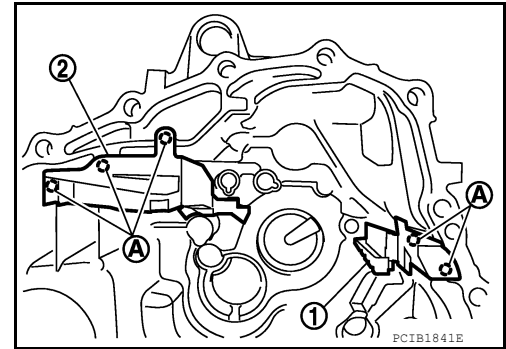
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

- b. Install oil gutter A (1) and oil gutter B (2) to transaxle case.

CAUTION:

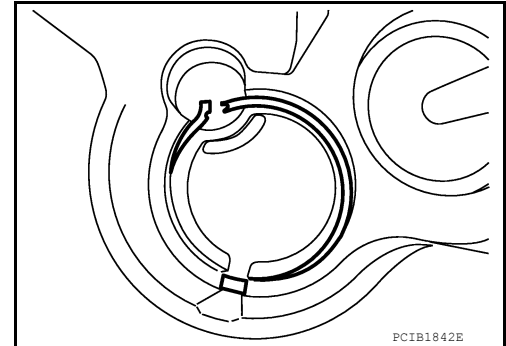
Insert the tabs (A) of oil gutter A and oil gutter B into transaxle case.



- c. Temporarily install snap ring of mainshaft rear bearing into transaxle case.

CAUTION:

Do not reuse snap ring.

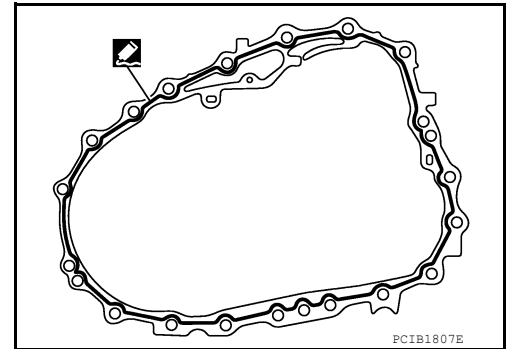


- d. Apply recommended sealant to mating surface of clutch housing as shown.

- Use Genuine Silicone RTV or an equivalent. Refer to [GL-15, "Recommended Chemical Products and Sealants"](#).

CAUTION:

- Remove old sealant adhering to the mating surfaces. Also remove any moisture, oil, or foreign material adhering to both mating surfaces.
- Apply sealant so as not to break the bead.
- The width of sealant bead is 1 - 2 mm (0.04 - 0.08 in).
- The height of sealant bead is 0.4 - 1 mm (0.016 - 0.04 in).
- The overlap length of both ends of sealant bead is 3 - 5 mm (0.12 - 0.20 in).



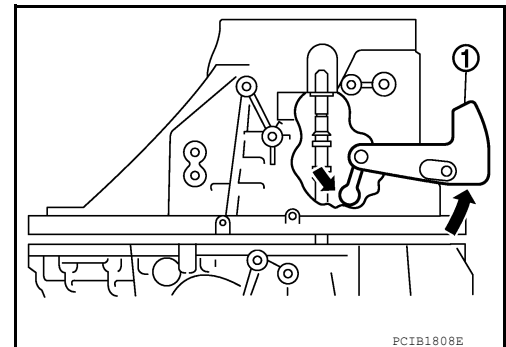
- e. With shifter lever A (1) held in the position shown, temporarily assemble transaxle case to clutch housing.

CAUTION:

Do not damage striking rod oil seal.

NOTE:

Make sure to hold shifter lever A in the position shown. Otherwise transaxle case cannot be installed to clutch housing.



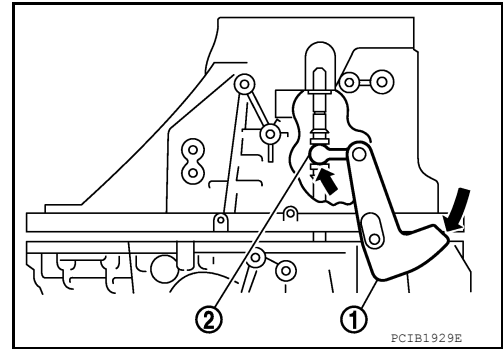
TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

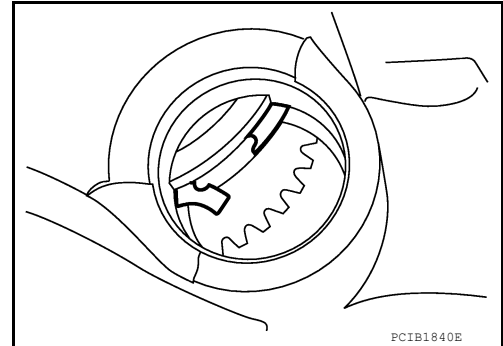
[6MT: RS6F52A]

- f. While rotating shifter lever A (1) in the direction shown, assemble transaxle case to clutch housing.

2 : Shifter lever B



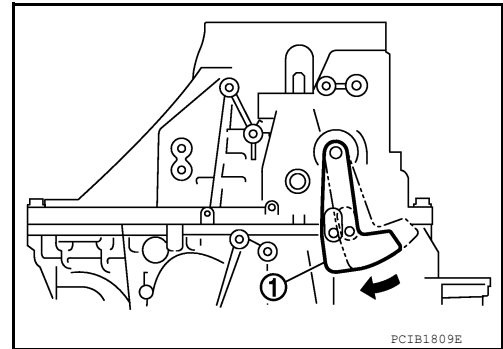
- g. Accessing from the bore plug hole, expand snap ring at mainshaft rear bearing so that the ring catches the periphery of mainshaft rear bearing.
h. Temporarily tighten transaxle case bolts.



- i. Shift the shifter lever A (1) to 2nd gear position.

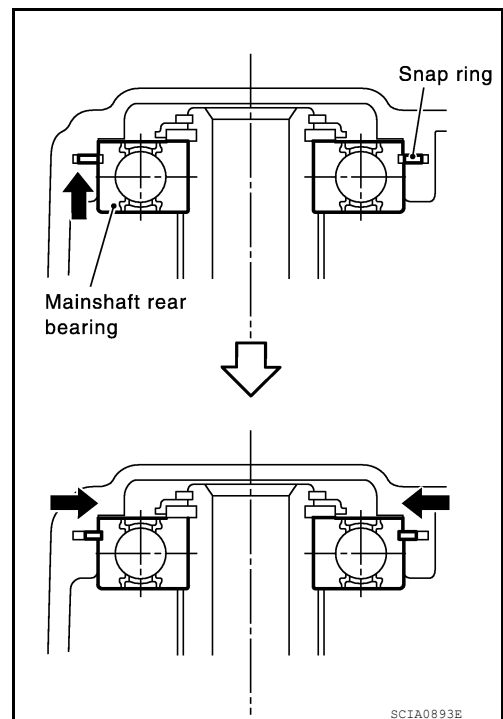
NOTE:

- The 2nd gear position is attained when shifter lever A is in the position shown.



- When transaxle is shifted to the 2nd gear position, mainshaft assembly is lifted.

- j. Seat snap ring in the groove on mainshaft rear bearing. If snap ring is not seated in the groove on mainshaft rear bearing, remove transaxle case and repeat the procedure from step d.

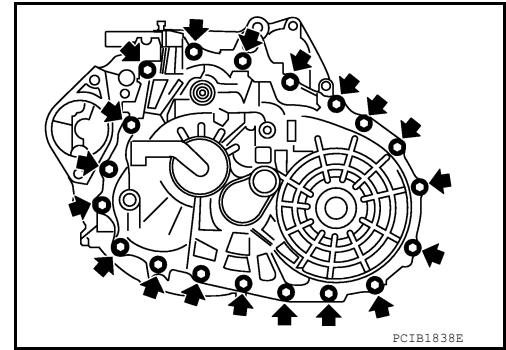


TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

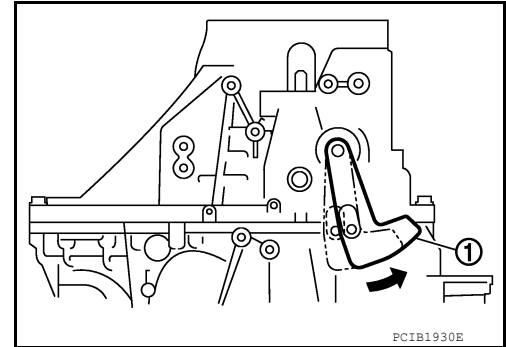
- k. Tighten transaxle case bolts to the specified torque. Refer to [TM-31, "Exploded View"](#).



- l. Shift the shifter lever A (1) to neutral position.

NOTE:

The neutral position is attained when shifter lever A is in the position shown.

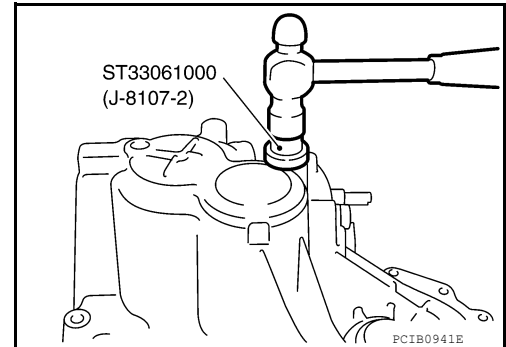


27. Install bore plug to transaxle case using Tool.

Tool number : ST33061000 (J-8107-2)

CAUTION:

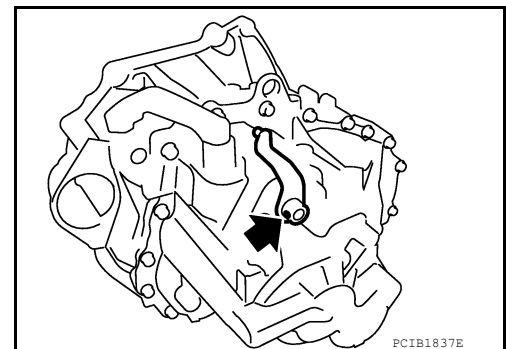
Do not reuse bore plug.



28. Install selector lever to transaxle case and then install retaining pin to selector lever.

CAUTION:

- Do not reuse retaining pin.
- Assemble retaining pin from the direction shown until it becomes flush with the end surface of selector lever.



TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

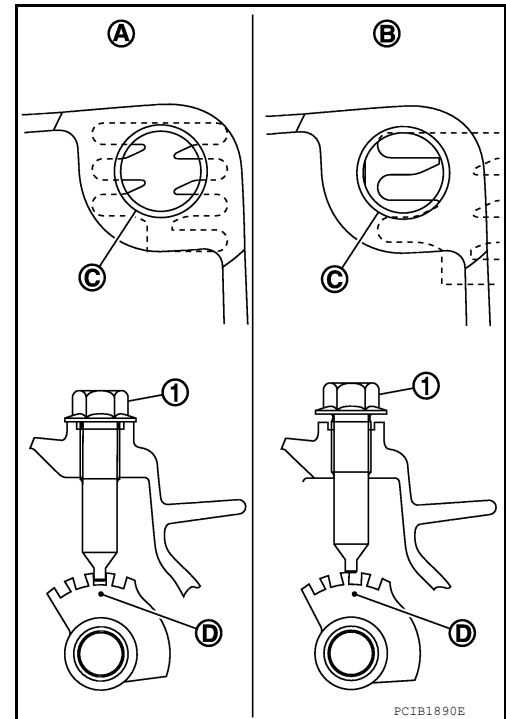
29. Install guide bolt (1) according to the following:

- Shift the shifter lever A and selector lever to neutral position (A).
- Visually confirm from the guide bolt hole (C) that shift lever A is securely set to neutral position (A). If it is not in the neutral position (B), repeat the procedure from step a.

CAUTION:

The guide groove (D) of striking rod assembly will be damaged when assembling guide bolt (1) if the lever is not in the neutral position (A).

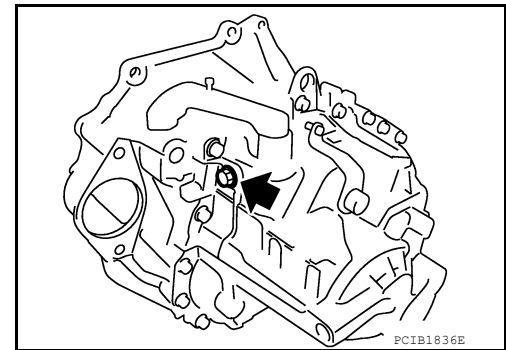
- Check continuity between terminals of transmission range switch to confirm it in the neutral position. If it is not in the neutral position, remove transmission range switch and repeat the procedure from step a. Refer to [TM-22. "Inspection"](#).



- Install guide bolt to transaxle case and then tighten guide bolt to the specified torque.

CAUTION:

Do not reuse guide bolt.



30. Apply recommended sealant to threads of transmission range switch (1). Then install it to transaxle case and tighten to the specified torque.

- Back-up lamp switch (2)
- Air breather tube (3)
- Use Genuine Silicone RTV or an equivalent. Refer to [GI-15. "Recommended Chemical Products and Sealants"](#).

CAUTION:

Remove old sealant and oil adhering to threads.

31. Install plunger to transaxle case.

32. Apply recommended sealant to threads of back-up lamp switch. Then install it to transaxle case and tighten to the specified torque.

- Use Genuine Silicone RTV or an equivalent. Refer to [GI-15. "Recommended Chemical Products and Sealants"](#).

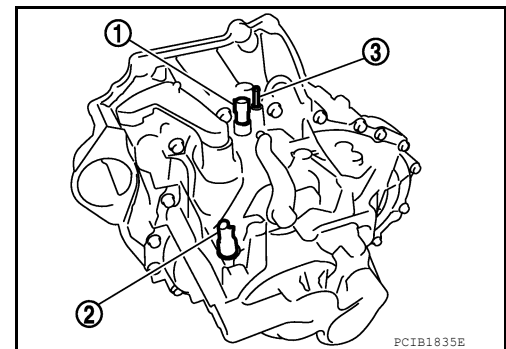
CAUTION:

Remove old sealant and oil adhering to threads.

33. Install air breather tube to transaxle case.

CAUTION:

- Do not reuse air breather tube.
- Assemble air breather tube until its collar element contacts with transaxle case.



TRANSAXLE ASSEMBLY

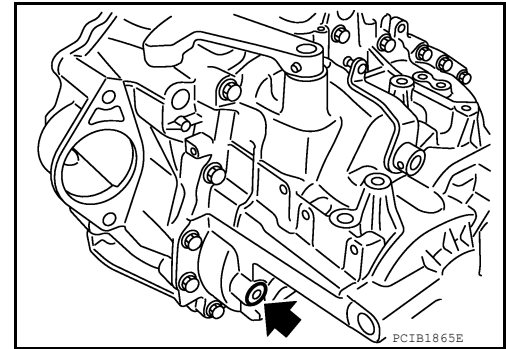
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

34. Install gasket onto plug and then install them into transaxle case. Tighten plug to the specified torque.

CAUTION:

Do not reuse gasket.



35. Install gasket onto drain plug and then install them into clutch housing. Tighten drain plug to the specified torque.

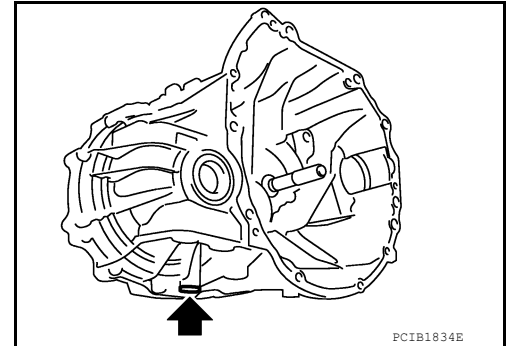
CAUTION:

Do not reuse gasket.

36. Install O-ring onto plug and then install it into clutch housing. Tighten bolt to the specified torque.

CAUTION:

- **Do not reuse O-ring.**
- **After oil is filled, tighten bolt to specified torque.**



Adjustment

INFOID:000000006390420

DIFFERENTIAL SIDE BEARING PRELOAD

- When adjusting differential side bearing preload, select adjusting shim for differential side bearing. To select adjusting shim, measure clearance (L) between transaxle case and differential side bearing outer race.

CAUTION:

Up to two adjusting shims can be selected.

- Calculate dimension (L) (thickness of adjusting shim) using the following procedure to satisfy specification of preload for differential side bearing.

Preload : Refer to [TM-87, "Differential Side Bearing Preload"](#).

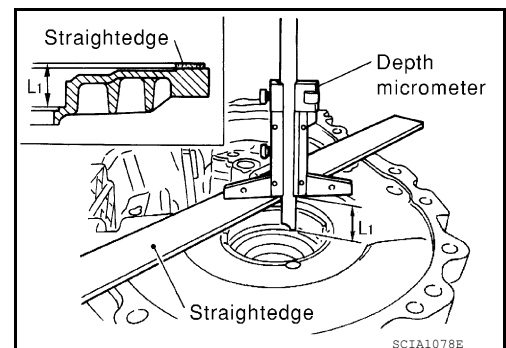
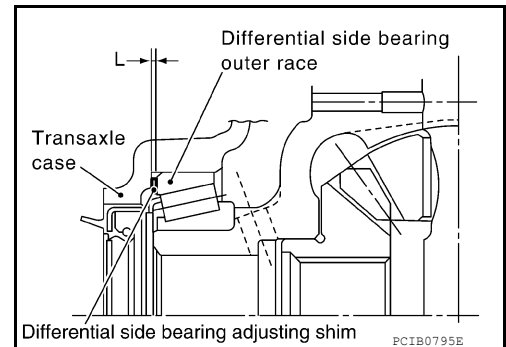
Dimension (L) = (L1 - L2) + Preload

L : Thickness of adjusting shim

L1 : Distance between transaxle case end face and mounting face of adjusting shim

L2 : Distance between differential side bearing outer race and clutch housing end face

1. Using a depth micrometer and straightedge, measure dimension (L1) between transaxle case end face and mounting face of adjusting shim.
2. Install differential side bearing outer race onto differential side bearing on final gear side. Holding lightly differential side bearing outer race horizontally by hand, rotate final gear five times or more (for smooth movement of bearing roller).



TRANSAXLE ASSEMBLY

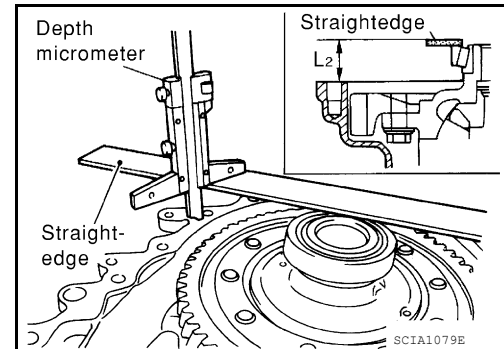
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

- Using a depth micrometer and straightedge as shown, measure dimension (L2) between differential side bearing outer race and clutch housing end face.

CAUTION:

(L2): Measure at four point by approximately 90 degrees and use the average value.

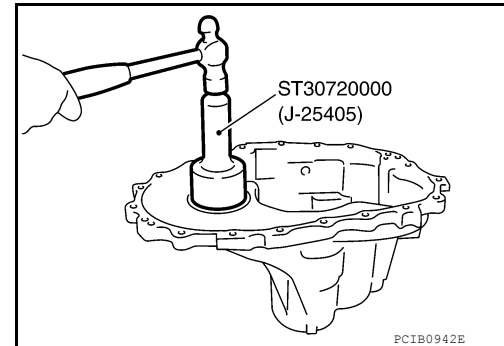


- Install selected differential side bearing adjusting shim and then install differential side bearing outer race using Tool.

Tool number : ST30720000 (J-25405)

CAUTION:

Replace differential side bearing and differential side bearing outer race as a set.



REVERSE IDLER GEAR END PLAY

- When adjusting reverse idler gear end play, select adjusting shim for reverse idler gear. To select adjusting shim (1), measure clearance between transaxle case (2) and reverse idler gear (Rear) (3).

CAUTION:

Only one adjusting shim can be selected.

- Calculate dimension (Q) (thickness of adjusting shim) using the following procedure to satisfy specification of end play for reverse idler gear.

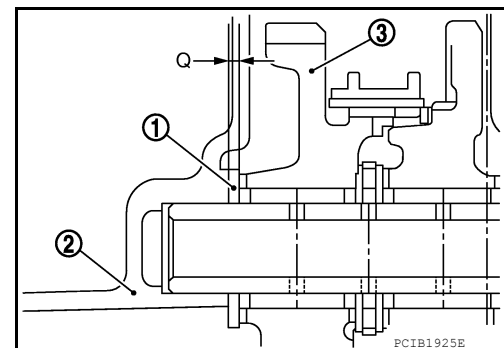
End play : Refer to [TM-86, "End Play"](#).

Dimension (Q) = (Q1 - Q2) - End play

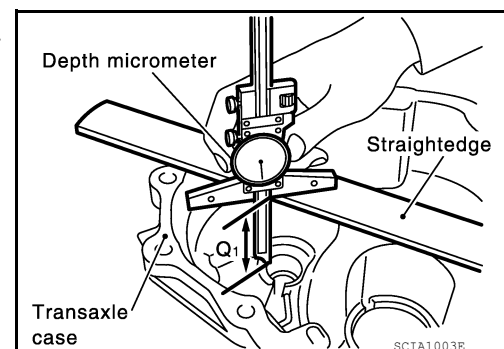
Q : Thickness of adjusting shim

Q1 : Distance between transaxle case end face and mounting face of adjusting shim

Q2 : Distance between clutch housing end face and end face of reverse idler gear (Rear)



- Using a depth micrometer and straightedge, measure dimension (Q1) between transaxle case end face and mounting face of adjusting shim.



TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

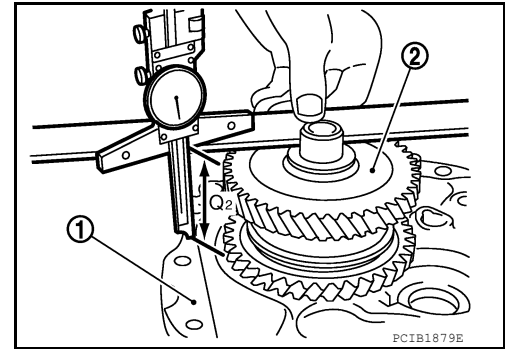
[6MT: RS6F52A]

- Using a depth micrometer and straightedge as shown, measure dimension (Q2) between clutch housing (1) end face and end face of reverse idler gear (Rear) (2).

CAUTION:

Q2: Measure at four point by approximately 90 degrees and use the average value.

- Install selected reverse idler gear adjusting shim onto reverse idler gear (Rear).



INPUT SHAFT END PLAY

- When adjusting input shaft end play, select adjusting shim for input shaft rear bearing. To select adjusting shim, measure clearance between transaxle case and input shaft rear bearing.

CAUTION:

Only one adjusting shim can be selected.

- Calculate dimension (O) (thickness of adjusting shim) using the following procedure to satisfy specification of end play for input shaft rear bearing.

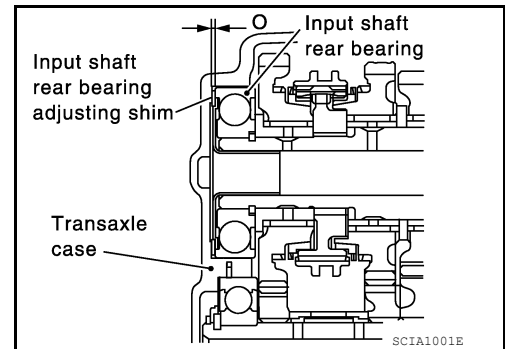
End play : Refer to [TM-86, "End Play"](#).

Dimension (O) = (O1 - O2) - End play

O : Thickness of adjusting shim

O1 : Distance between transaxle case end face and mounting face of adjusting shim

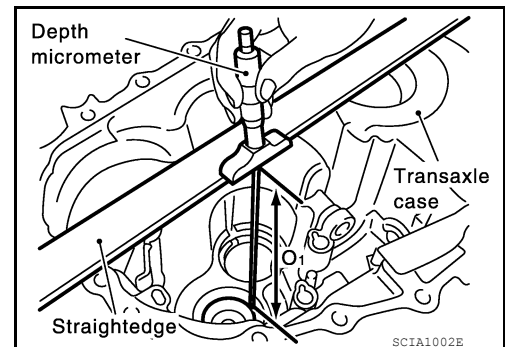
O2 : Distance between clutch housing end face and end face of input shaft rear bearing



- Using a depth micrometer and straightedge, measure dimension (O1) between transaxle case end face and mounting face of adjusting shim.

CAUTION:

O1: Measure at four point by approximately 90 degrees and use the average value.

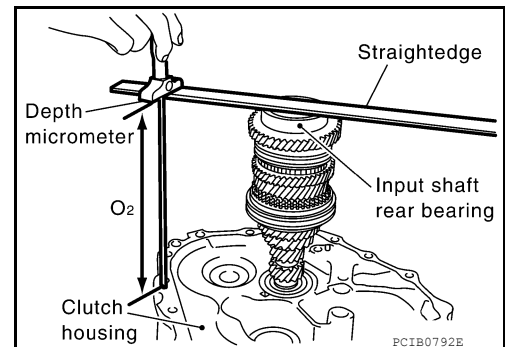


- Using a depth micrometer and straightedge as shown, measure dimension (O2) between clutch housing end face and end face of input shaft rear bearing.

CAUTION:

(O2): Measure at four point by approximately 90 degrees and use the average value.

- Install selected input shaft rear bearing adjusting shim onto input shaft.



STRIKING ROD END PLAY

TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

- When adjusting striking rod end play, select adjusting shim (1) for striking rod (2). To select adjusting shim, measure clearance between transaxle case (3) and striking rod shim (4).

CAUTION:

Only one adjusting shim can be selected.

- Calculate dimension (R) (thickness of adjusting shim) using the following procedure to satisfy specification of end play for striking rod.

End play : Refer to [TM-86, "End Play"](#).

Dimension (R) = (R1 - R2) - End play

R : Thickness of adjusting shim

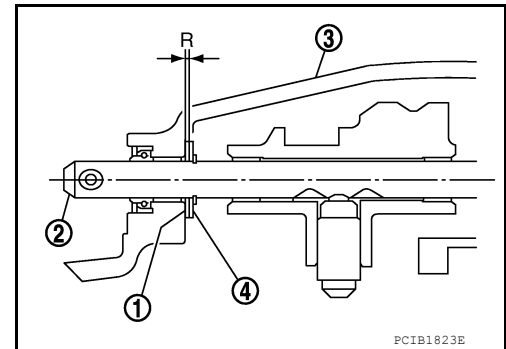
R1 : Distance between transaxle case end face and mounting face of adjusting shim

R2 : Distance between clutch housing end face and end face of striking rod shim

- Using a depth micrometer (A) and straightedge (B), measure dimension (R1) between end face of transaxle case (1) and mounting face of adjusting shim.

CAUTION:

(R1): Measure at four points by approximately 90 degrees and use the average value.



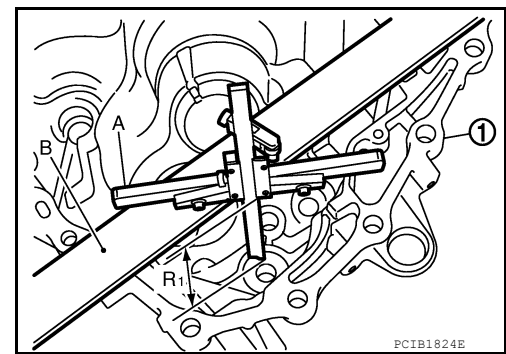
PCIB1823E

- Using a depth micrometer (A) and straightedge (B) as shown, measure dimension (R2) between end face of clutch housing (1) and end face of striking rod shim (2).

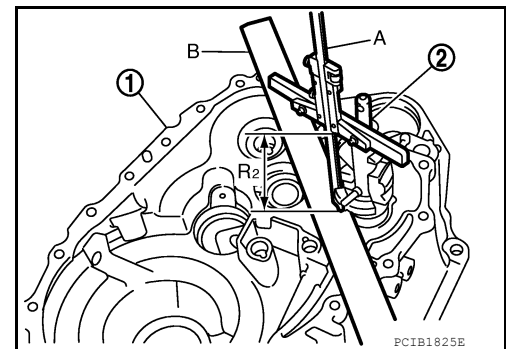
CAUTION:

- (R2): Measure at four points by approximately 90 degrees and use the average value.**
- When measuring, be careful for the inclination of striking rod assembly and striking rod shim.**

- Install selected striking rod adjusting shim onto striking rod assembly.



PCIB1824E



PCIB1825E

MAINSHAFT END PLAY

- When adjusting mainshaft end play, select adjusting shim (1) for mainshaft rear bearing (2). To select adjusting shim, measure clearance (M) between transaxle case (3) and dummy adjusting shim (4) on mainshaft rear bearing.

5 : Snap ring

6 : Mainshaft

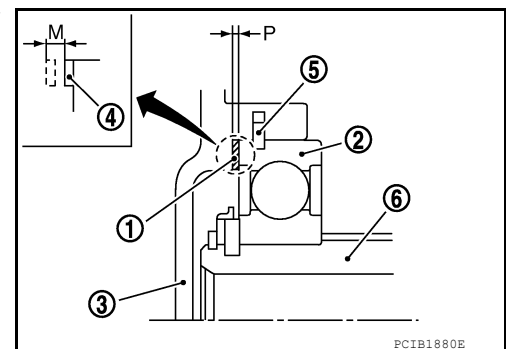
CAUTION:

Only 1 adjusting shim can be selected.

- Calculate dimension (P) (thickness of adjusting shim) using the following procedure to satisfy specification of end play for mainshaft rear bearing.

End play : Refer to [TM-86, "End Play"](#).

Dimension (P) = (M + N) - End play



PCIB1880E

TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

P : Thickness of adjusting shim

M : Distance between dummy adjusting shim on mainshaft rear bearing end face and transaxle case end face

N* : Thickness of dummy adjusting shim

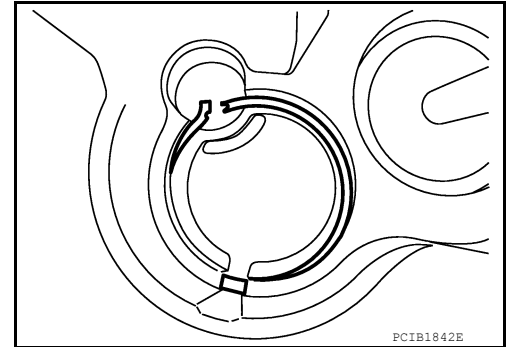
*: Refer to the latest parts information to use a dummy adjusting shim of which part number is the thinnest in thickness.

1. Install transaxle case according to the following:

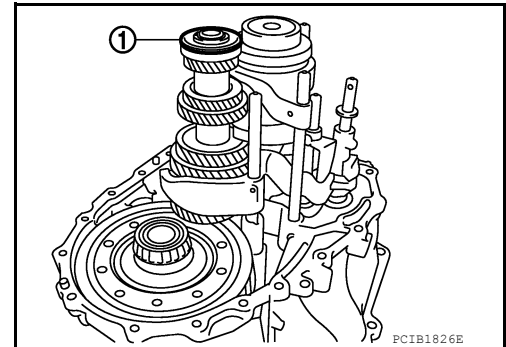
a. Temporarily install snap ring of mainshaft rear bearing into transaxle case.

CAUTION:

Do not reuse snap ring.



b. Install dummy adjusting shim (1) to mainshaft assembly.



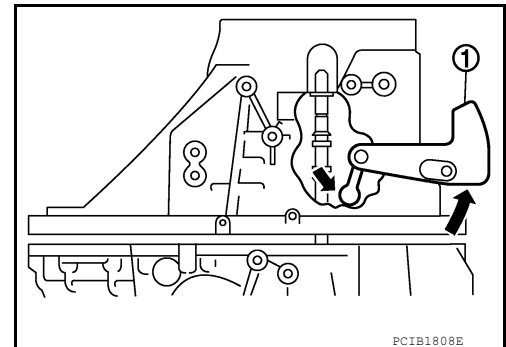
c. With shifter lever A (1) held in the position shown, temporarily assemble transaxle case to clutch housing.

CAUTION:

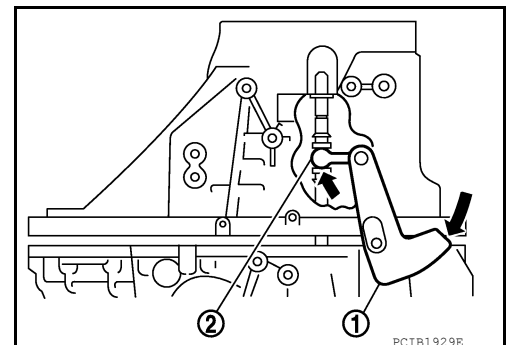
Do not damage striking rod oil seal.

NOTE:

Make sure to hold shifter lever A in the position shown. Otherwise transaxle case cannot be installed to clutch housing.



d. While rotating shifter lever A (1) in the direction of the arrow shown, assemble transaxle case to clutch housing.



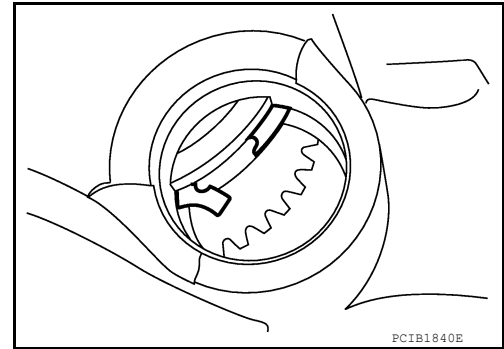
2 : Shifter lever B

TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

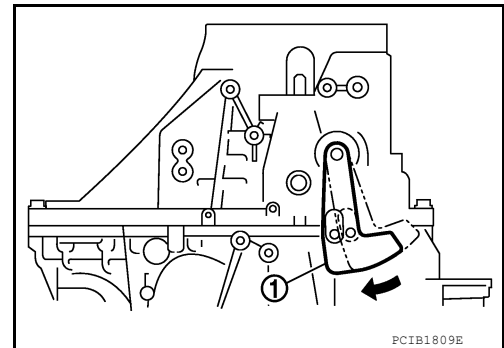
- e. Accessing from the bore plug hole, expand snap ring at mainshaft rear bearing so that the ring catches the periphery of mainshaft rear bearing.
- f. Temporarily tighten transaxle case bolts.



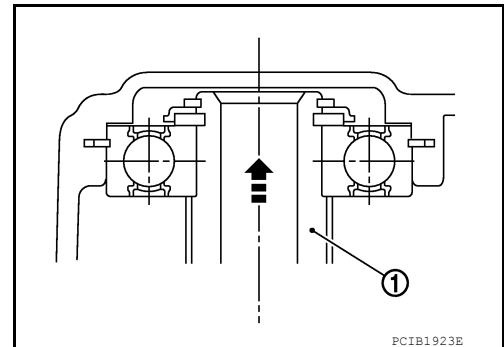
2. Shift the shifter lever A to 2nd gear position.

NOTE:

- The 2nd gear position is attained when shifter lever A (1) is in the position shown.



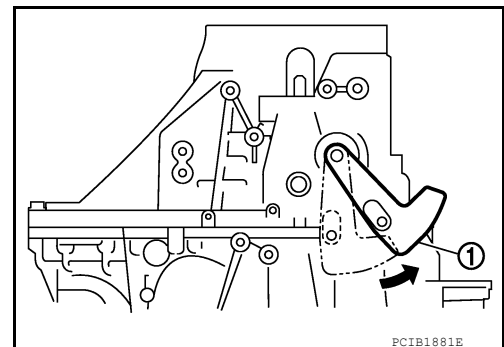
- When transaxle is shifted to the 2nd gear position, mainshaft assembly (1) is lifted.



3. Seat snap ring in the groove on mainshaft rear bearing. If snap ring is not seated in the groove on mainshaft rear bearing, remove transaxle case.
- a. Repeat the procedure 1 from step c.
4. Shift the shifter lever A to 1st gear position, and then shift it to 2nd gear position. Repeat 3 times.

NOTE:

- The mainshaft rear bearing position will be stabilized by shifting between 1st gear position and 2nd gear position alternately.
- The 1st gear position is attained when shifter lever A (1) is in the position shown.

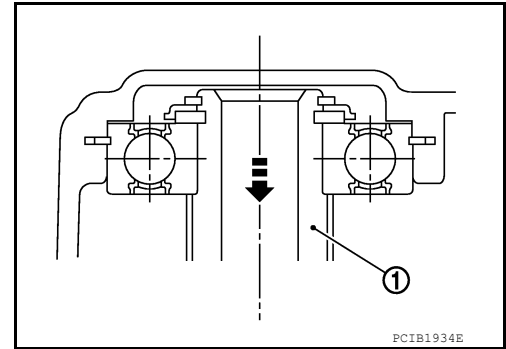


TRANSAXLE ASSEMBLY

< UNIT DISASSEMBLY AND ASSEMBLY >

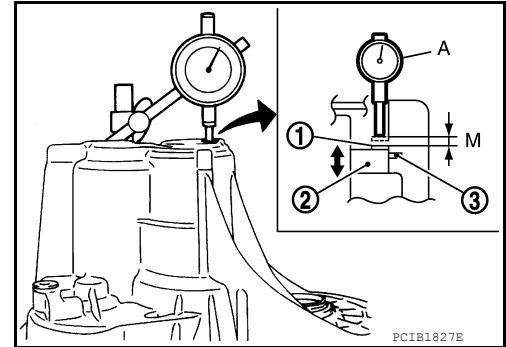
[6MT: RS6F52A]

- When transaxle is shifted to the 1st gear position, mainshaft assembly (1) is declined.

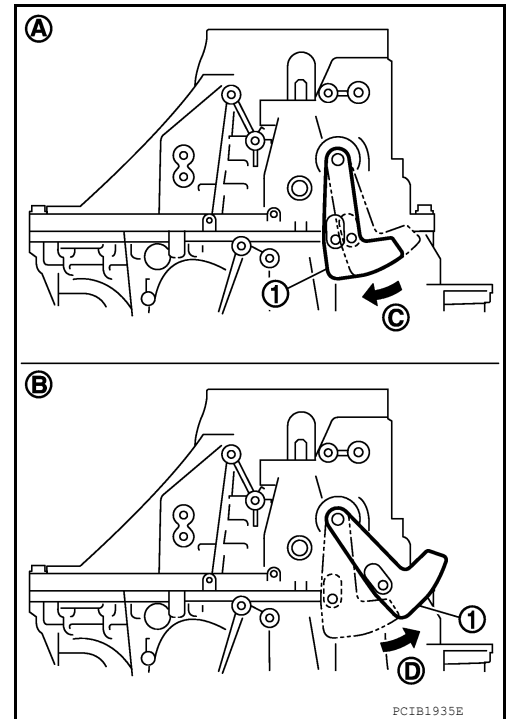


- Set the dial indicator (A) to dummy adjusting shim (1) through the bore plug mounting hole.

- 2 : Mainshaft rear bearing
 3 : Snap ring
 M : Movement between 1st and 2nd gear



- Shift the shifter lever A (1) to 2nd gear position (A), and then rotate it in the direction of the arrow (C) until it stops. Using this position as the reference point, measure the amount of movement when shifting shifter lever A to 1st gear position (B) and rotating it in the direction of the arrow (D) until it stops. This measurement is the (M) dimension.
- When measurement (M) is 0 - 0.06 mm (0 - 0.0024 in), adjustment terminates, and the dummy adjusting shim becomes regular adjusting shim. Select adjusting shim from the computed expressions when measurement (M) is over 0.06 mm (0.0024 in).



INPUT SHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

INPUT SHAFT AND GEAR

Exploded View

INFOID:000000006390421

Refer to [TM-31, "Exploded View"](#).

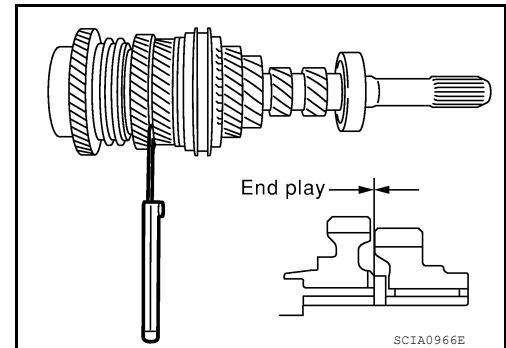
Disassembly

INFOID:000000006390422

1. Before disassembling, measure end play for 3rd, 4th, 5th, and 6th input gears.

End play standard value : Refer to [TM-86, "End Play"](#).

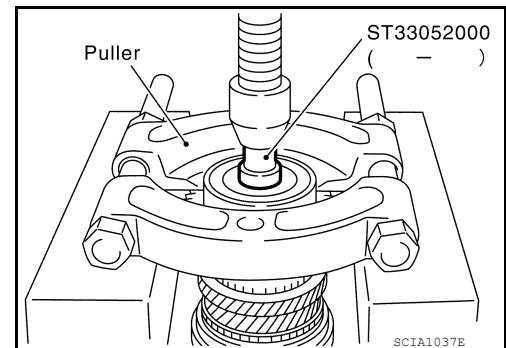
2. Remove oil channel.



3. Press out input shaft rear bearing using Tool and a suitable puller.

Tool number : ST33052000 (—)

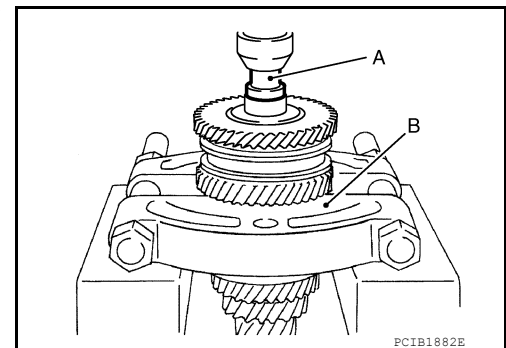
4. Remove snap ring.



5. Press out 6th input gear, 6th needle bearing, 6th input gear bushing, 5th-6th synchronizer hub assembly, and 5th input gear using Tool (A) and a suitable puller (B).

Tool number : ST33052000 (—)

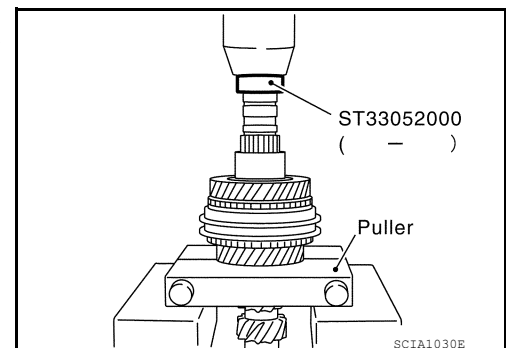
6. Remove 5th needle bearing.



7. Press out 5th input gear bushing, thrust washer, 4th input gear, 4th needle bearing, 4th input gear bushing, 3rd-4th synchronizer hub assembly, and 3rd input gear using Tool and a suitable puller.

Tool number : ST33052000 (—)

8. Remove 3rd needle bearing.

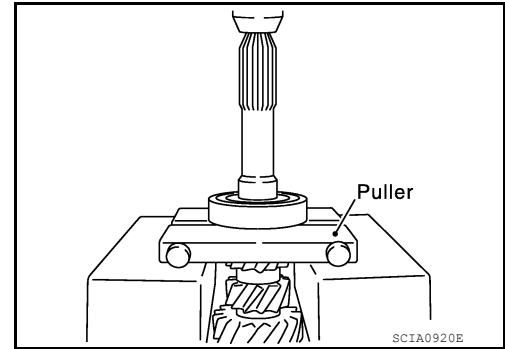


INPUT SHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

9. Press out input shaft front bearing using a suitable puller.



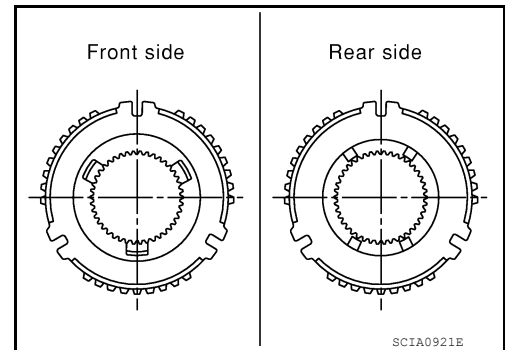
INFOID:000000006390423

Assembly

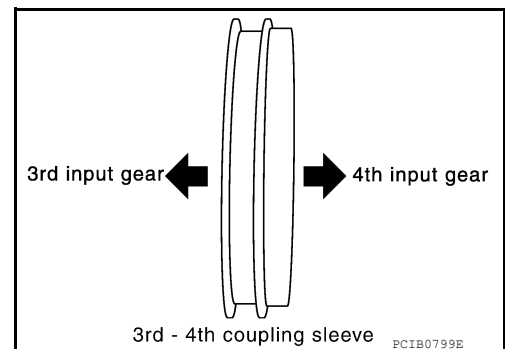
1. Install 3rd needle bearing to input shaft.
2. Install 3rd input gear, 3rd inner baulk ring, 3rd synchronizer cone, and 3rd outer baulk ring to input shaft.
CAUTION:
Replace 3rd inner baulk ring, 3rd synchronizer cone, and 3rd outer baulk ring as a set.
3. Install 3rd-4th spread spring, 3rd-4th shifting insert, and 3rd-4th synchronizer hub onto 3rd-4th coupling sleeve.

CAUTION:

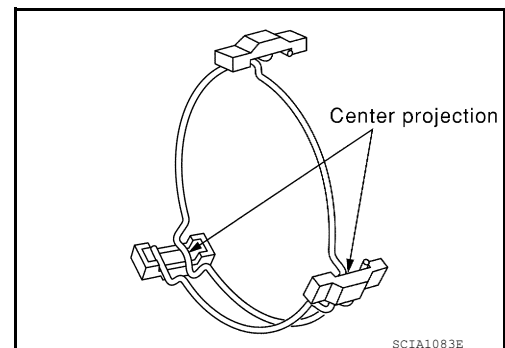
- Be careful with orientation of 3rd-4th synchronizer hub.
- Do not reuse 3rd-4th synchronizer hub and 3rd-4th coupling sleeve.
- Replace 3rd-4th synchronizer hub and 3rd-4th coupling sleeve as a set.



- Be careful with orientation of 3rd-4th coupling sleeve.



- Be sure not to hook center projection of 2 spread springs on same shifting insert.



INPUT SHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

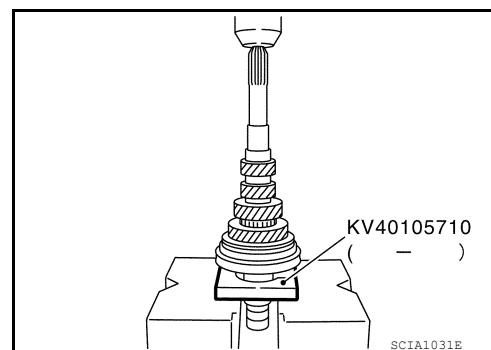
[6MT: RS6F52A]

4. Press in 3rd-4th synchronizer hub assembly using Tool.

Tool number : KV40105710 (—)

CAUTION:

Align grooves of 3rd-4th shifting insert and 3rd outer baulk ring.

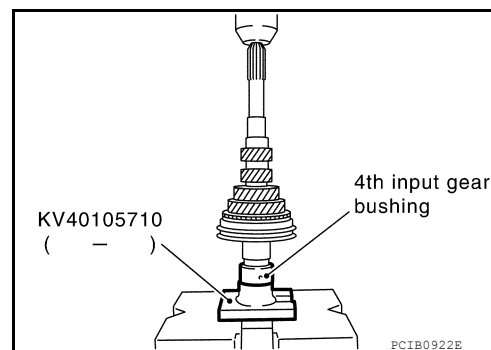


5. Press in 4th input gear bushing using Tool.

Tool number : KV40105710 (—)

6. Install 4th baulk ring.

7. Install 4th needle bearing and 4th input gear to input shaft.



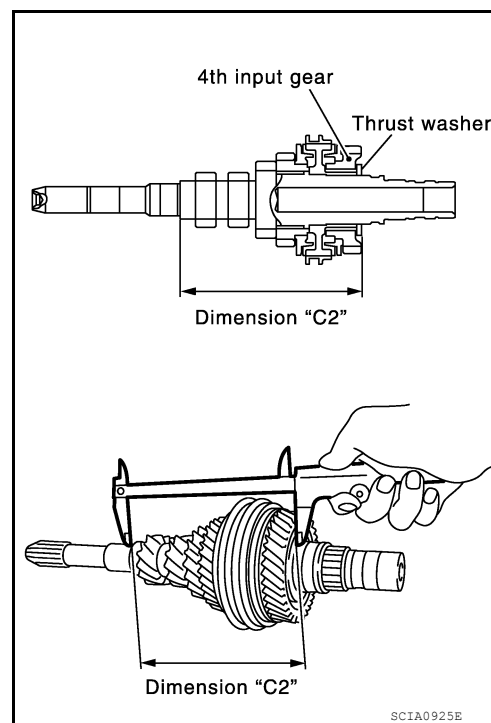
8. Select thrust washer so that dimension (C2) satisfies the standard value below. Then install thrust washer onto input shaft.

Standard value for dimension (C2)

: Refer to [TM-87, "Dimension"](#).

CAUTION:

Only one thrust washer can be selected.



9. Press in 5th input gear bushing using Tool.

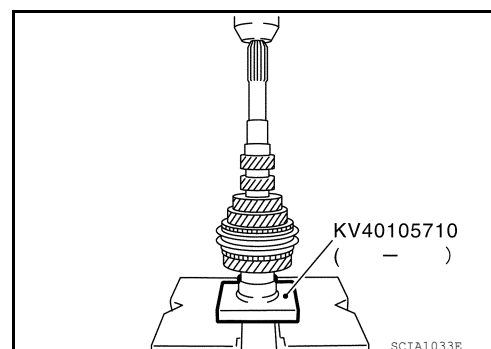
Tool number : KV40105710 (—)

CAUTION:

Do not reuse 5th input gear bushing.

10. Install 5th needle bearing and 5th input gear to input shaft.

11. Install 5th baulk ring.



INPUT SHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

12. Install 5th-6th synchronizer hub, 5th-6th spread spring, and 5th-6th shifting insert onto 5th-6th coupling sleeve.

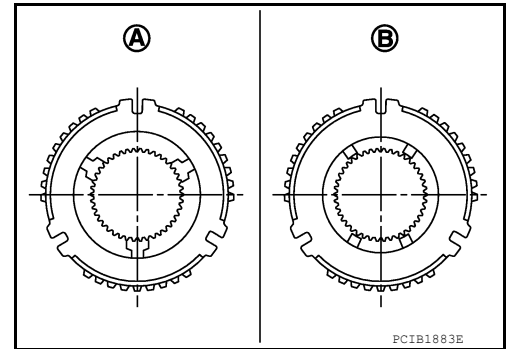
CAUTION:

- Be careful with orientation of 5th-6th synchronizer hub.

A : Front side

B : Rear side

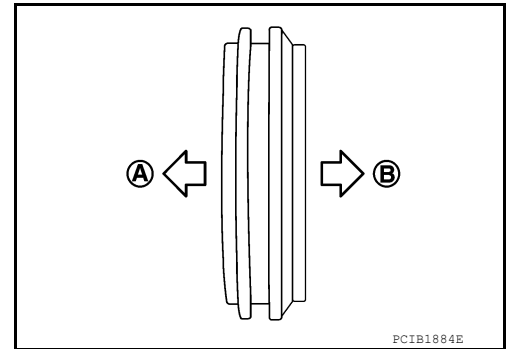
- Do not reuse 5th-6th synchronizer hub and 5th-6th coupling sleeve.
- Replace 5th-6th synchronizer hub and 5th-6th coupling sleeve as a set.



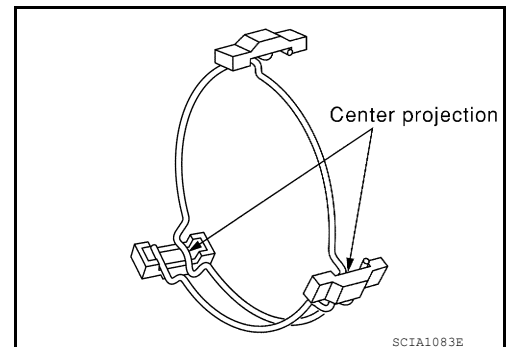
- Be careful with orientation of 5th-6th coupling sleeve.

A : 5th input gear side

B : 6th input gear side



- Be sure not to hook center projection of 2 spread springs on same shifting insert.

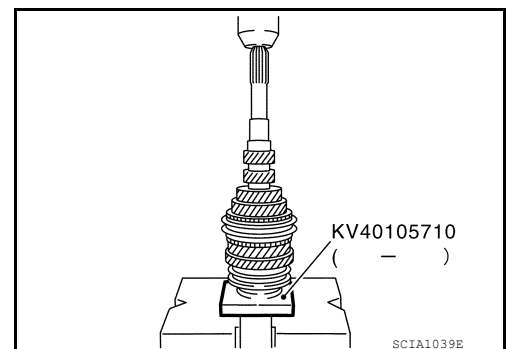


13. Press in 5th-6th synchronizer hub assembly using Tool

Tool number : KV40105710 (—)

CAUTION:

Align grooves of 5th-6th shifting insert and 5th baulk ring.



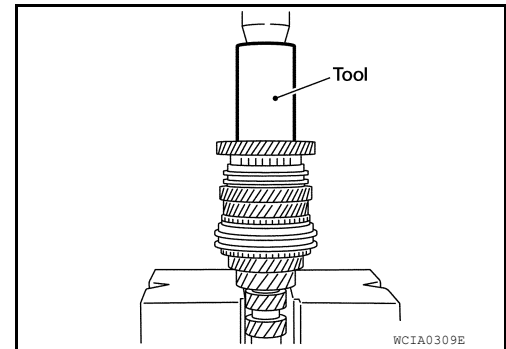
INPUT SHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

14. Install 6th needle bearing, 6th input gear, 6th baulk ring onto 6th input gear bushing and then press in 6th input gear bushing onto input shaft using Tool.

Tool number : ST33200000 (J-26082)



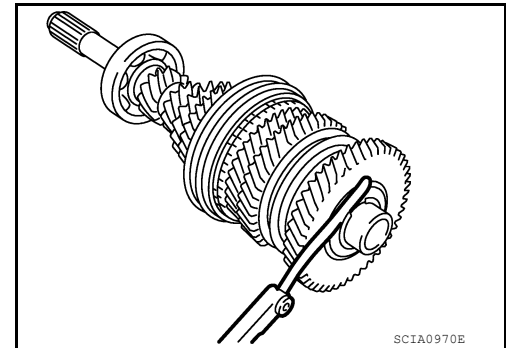
15. Install snap ring onto input shaft and make sure that end play (gap between snap ring and groove) of 6th input gear bushing satisfies the standard value.

End play standard value : Refer to [TM-86, "End Play"](#).

- If measurement is outside the standard range, select snap ring.

CAUTION:

Do not reuse snap ring.

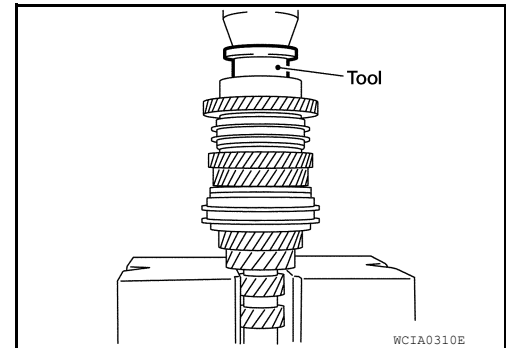


16. Press in input shaft rear bearing using Tool.

Tool number : ST30901000 (J-26010-01)

CAUTION:

Install input shaft rear bearing with its brown surface facing the 6th input gear side.

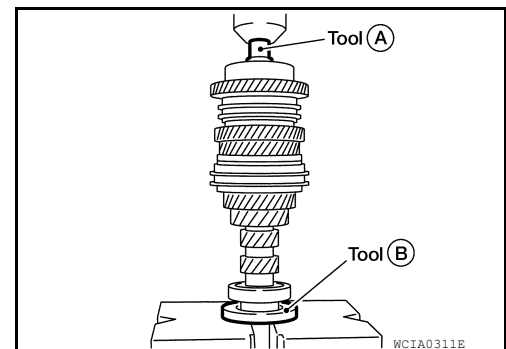


17. Press in input shaft front bearing using Tools A and B.

Tool number **A:** ST33052000 (—)

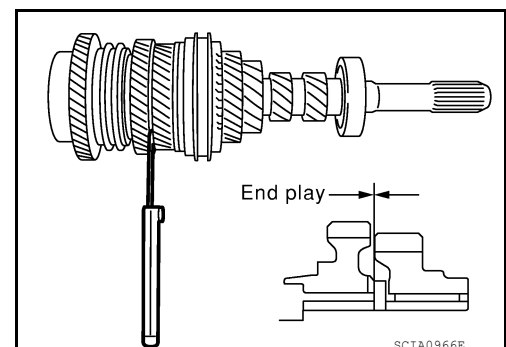
B: ST30032000 (J-26010-01)

18. Install oil channel onto input shaft.



19. Check end play of 3rd, 4th, 5th, and 6th input gears.

End play standard value : Refer to [TM-86, "End Play"](#).



INPUT SHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

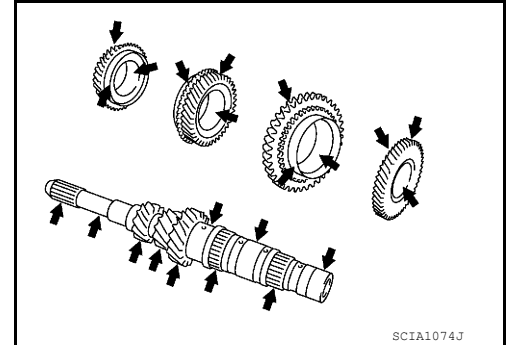
INFOID:000000006390424

Inspection

INPUT SHAFT AND GEAR

Check items below. If necessary, replace them with new ones.

- Damage, peeling, dent, uneven wear, bending, etc. of shaft
- Excessive wear, damage, peeling, etc. of gears

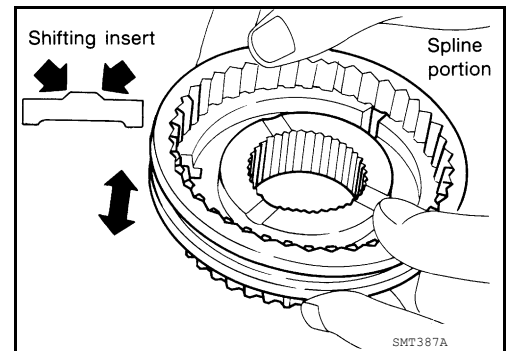


SYNCHRONIZER

Synchronizer Hub and Coupling Sleeve

Check items below. If necessary, replace them with new ones.

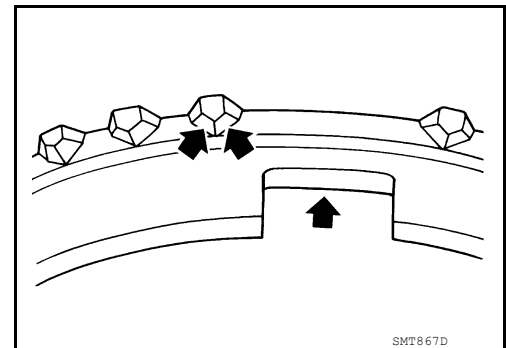
- Damage and excessive wear of contact surfaces of coupling sleeve, synchronizer hub and shifting insert
- Coupling sleeve and synchronizer hub must move smoothly.



Baulk Ring and Spread Spring

Check items below. If necessary, replace them with new ones.

- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.



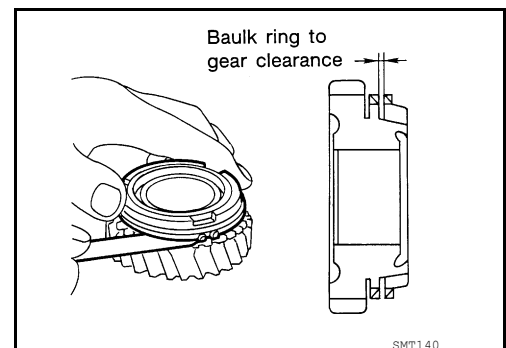
Baulk Ring Clearance for Single Cone Synchronizer (4th, 5th, and 6th)

- Push baulk ring on the cone and measure the clearance between baulk ring and cone. If measurement is below limit, replace it with a new one.

Clearance

Standard value : Refer to [TM-86, "Baulk Ring Clearance"](#).

Limit value : Refer to [TM-86, "Baulk Ring Clearance"](#).



Baulk Ring Clearance for Double Cone Synchronizer (3rd)

INPUT SHAFT AND GEAR

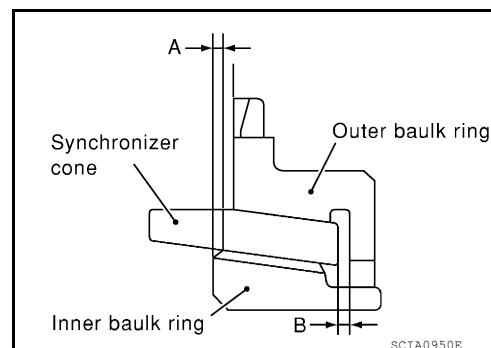
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

- Check the clearance between outer baulk ring, synchronizer cone, and inner baulk ring as follows.

CAUTION:

The clearances (A) and (B) are controlled with outer baulk ring, synchronizer cone, and inner baulk ring as a set. Replace them as a set if the clearances are outside the limit value.



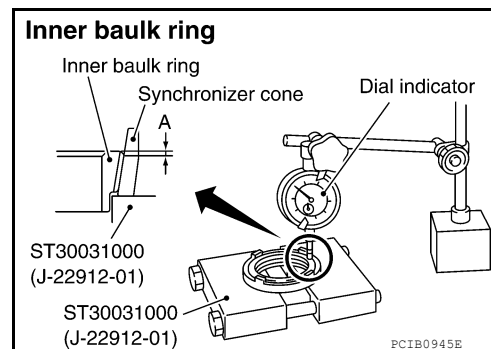
- Measure the clearance (A) at 2 points or more diagonally opposite using Tool. Then calculate mean value.

Tool number : ST30031000 (J-22912-01)

Clearance (A)

Standard value : Refer to [TM-86, "Baulk Ring Clearance"](#).

Limit value : Refer to [TM-86, "Baulk Ring Clearance"](#).

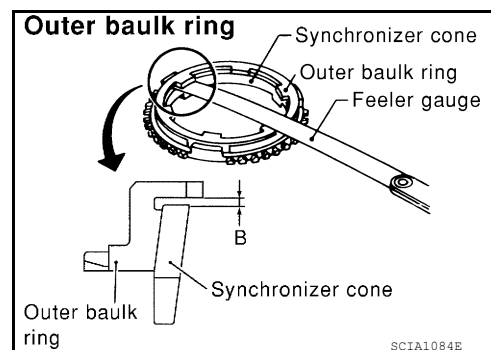


- Measure the clearance (B) at 2 points or more diagonally opposite using a feeler gauge. And then calculate mean value.

Clearance (B)

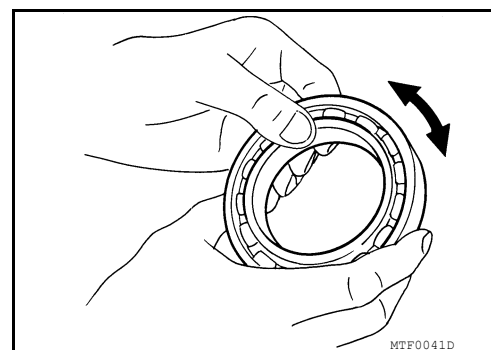
Standard value : Refer to [TM-86, "Baulk Ring Clearance"](#).

Limit value : Refer to [TM-86, "Baulk Ring Clearance"](#).



BEARING

Check bearing for damage and rough rotation. If necessary, replace with new one.



MAINSHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

MAINSHAFT AND GEAR

Exploded View

INFOID:000000006390425

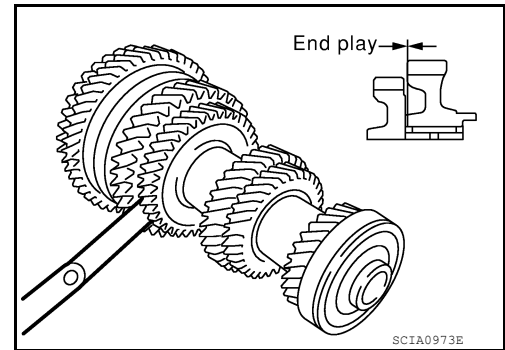
Refer to [TM-31, "Exploded View"](#).

Disassembly

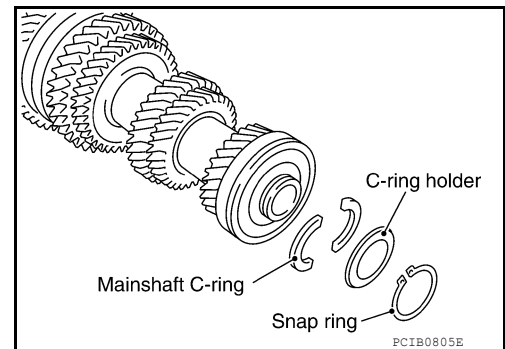
INFOID:000000006390426

1. Before disassembling, measure the end play of 1st and 2nd main gears.

End play standard value : Refer to [TM-86, "End Play"](#).



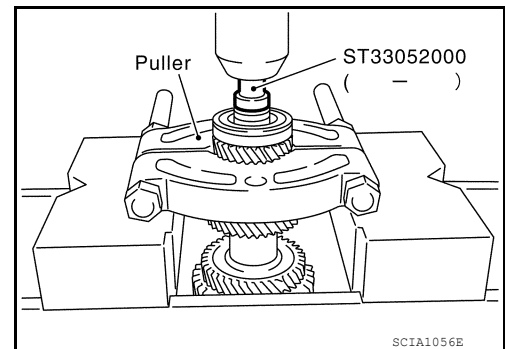
2. Remove snap ring.
3. Remove C-ring holder and then remove mainshaft C-ring.



4. Press out mainshaft rear bearing, 6th main gear adjusting shim, and 6th main gear using Tool and a suitable puller.

Tool number : ST33052000 (—)

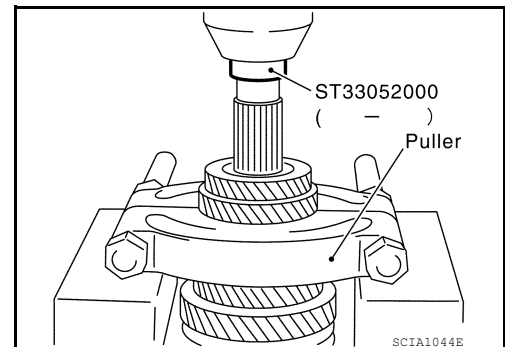
5. Remove 5th-6th mainshaft spacer.



6. Press out 4th main gear and 5th main gear using Tool and a suitable puller.

Tool number : ST33052000 (—)

7. Remove 4th main gear adjusting shim.
8. Remove 3rd-4th mainshaft spacer.

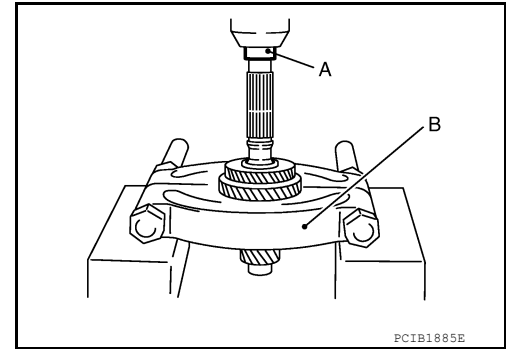


[6MT: RS6F52A]

- Press out 3rd main gear and 2nd main gear using Tool (A) and a suitable puller (B).

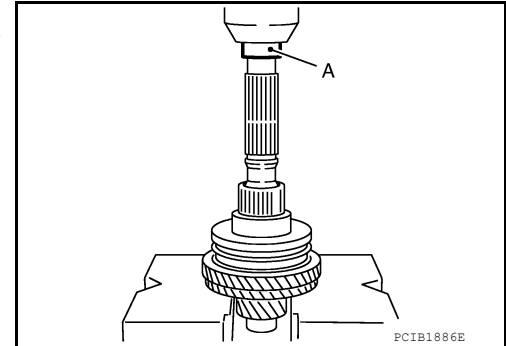
Tool number : KV40105020 (—)

- Remove 2nd needle bearing.



- Press out 2nd main gear bushing, 1st-2nd synchronizer hub assembly, 1st main gear, 1st needle bearing, 1st main gear bushing, and reverse main gear using Tool (A).

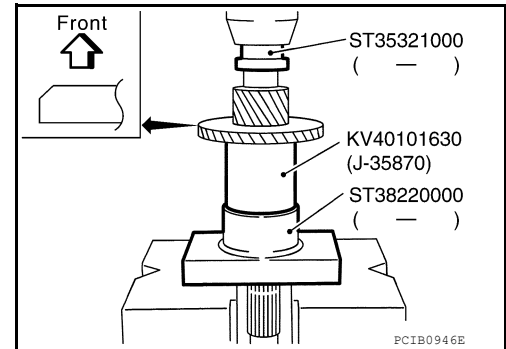
Tool number : KV40105020 (—)



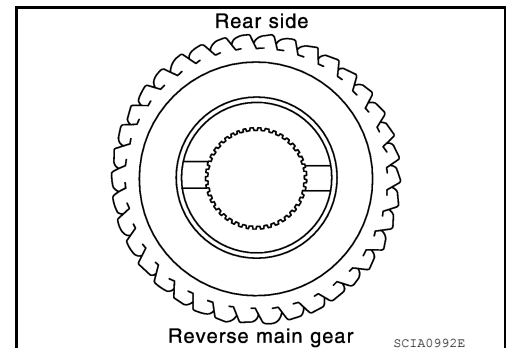
INFOID:000000006390427

- Press in reverse main gear using Tools.

Tool numbers : ST35321000 (—)
: KV40101630 (J-35870)
: ST38220000 (—)



- Be careful with orientation of reverse main gear.
- Do not reuse reverse main gear.



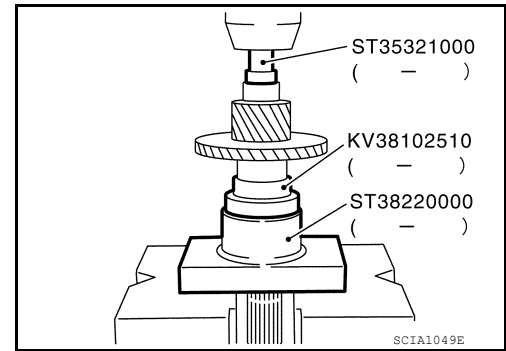
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

2. Press in 1st main gear bushing using Tools.

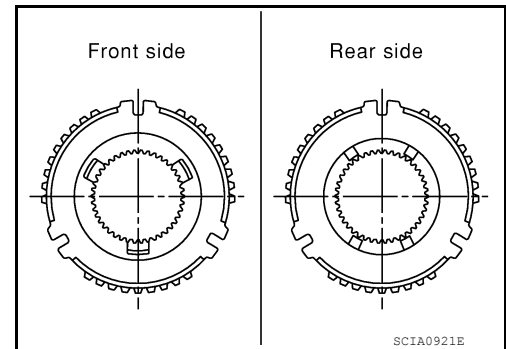
Tool numbers : ST35321000 (—)
: KV38102510 (—)
: ST38220000 (—)

3. Install 1st needle bearing and then 1st main gear.

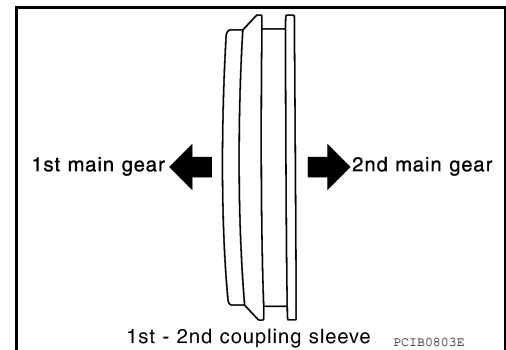


4. Install 1st-2nd spread spring, 1st-2nd shifting insert, and 1st-2nd synchronizer hub onto 1st-2nd coupling sleeve.

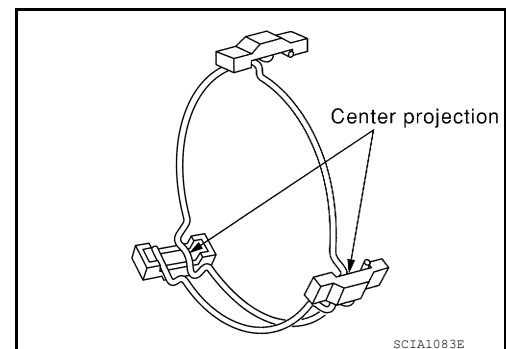
- Be careful with orientation of 1st-2nd synchronizer hub.
- Do not reuse 1st-2nd synchronizer hub and 1st-2nd coupling sleeve.
- Replace 1st-2nd synchronizer hub and 1st-2nd coupling sleeve as a set.



- Be careful with orientation of 1st-2nd coupling sleeve.



- Be sure not to hook center projection of 2 spread springs on same 1st-2nd shifting insert.



MAINSHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

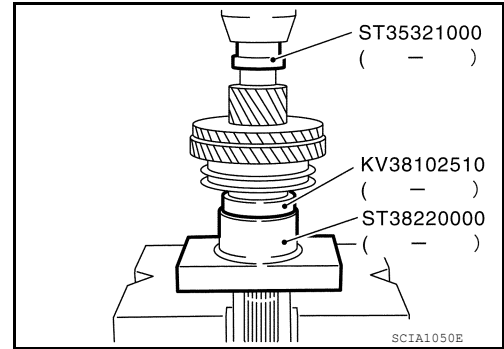
[6MT: RS6F52A]

5. Install 1st inner baulk ring, 1st synchronizer cone, and 1st outer baulk ring onto mainshaft and then press in 1st-2nd synchronizer hub assembly onto mainshaft using Tools.

Tool numbers : ST35321000 (—)
: KV38102510 (—)
: ST38220000 (—)

CAUTION:

- Outer baulk ring, synchronizer cone, and inner baulk ring on 2nd gear-side must have been removed.
- Be careful with orientation of coupling sleeve.
- Replace 1st inner baulk ring, 1st synchronizer cone, and 1st outer baulk ring as a set.



6. Press in 2nd main gear bushing using Tools.

Tool numbers : ST35321000 (—)
: KV40105710 (—)

7. Install 2nd outer baulk ring, 2nd synchronizer cone, and 2nd inner baulk ring.

CAUTION:

Replace 2nd outer baulk ring, 2nd synchronizer cone, and 2nd inner baulk ring as a set.

8. Install 2nd needle bearing and 2nd main gear.

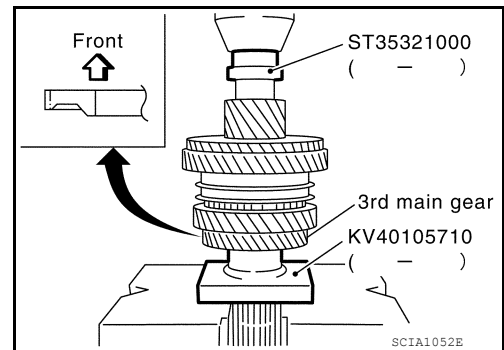
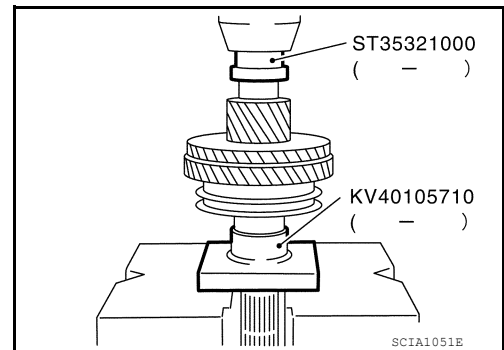
9. Press in 3rd main gear using Tools.

Tool numbers : ST35321000 (—)
: KV40105710 (—)

CAUTION:

- Be careful with orientation of 3rd main gear.
- Do not reuse 3rd main gear.

10. Install 3rd-4th mainshaft spacer.



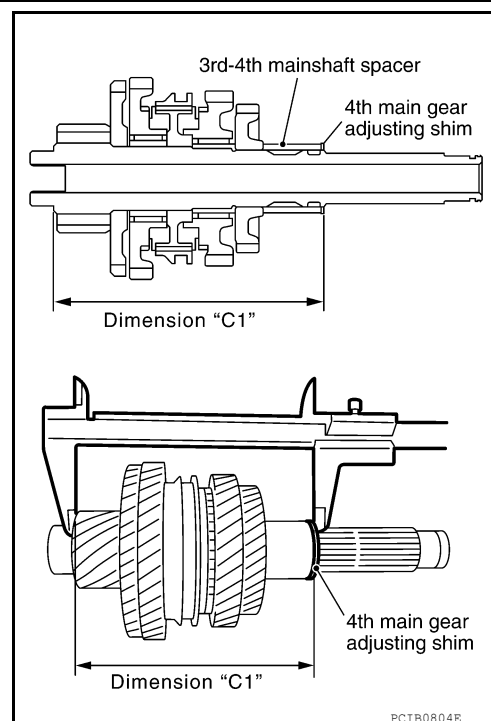
[6MT: RS6F52A]

- Select 4th main gear adjusting shim so that dimension (C1) satisfies the standard value below and install 4th main gear adjusting shim onto mainshaft.

Standard value for dimension (C1) : Refer to [TM-87](#),
"Dimension".

CAUTION:

Only one adjusting shim can be selected.

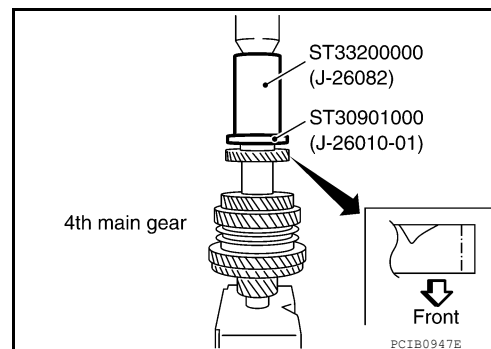


- Press in 4th main gear using Tools.

Tool numbers : ST33200000 (J-26082)
: ST30901000 (—)

CAUTION:

- Be careful with orientation of 4th main gear.
- Do not reuse 4th main gear.



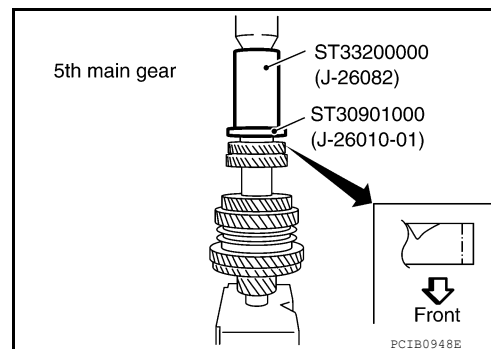
- Press in 5th main gear using Tools.

Tool numbers : ST33200000 (J-26082)
: ST30901000 (—)

CAUTION:

- Be careful with orientation of 5th main gear.
- Do not reuse 5th main gear.

- Install 5th-6th mainshaft spacer.

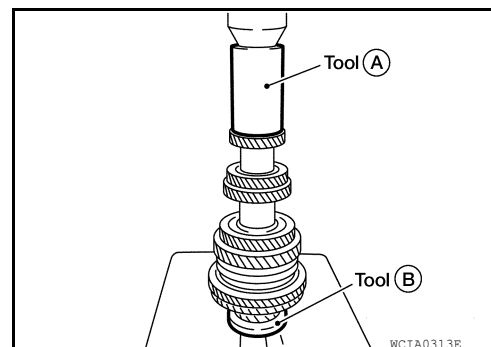


- Press in 6th main gear using Tools (A) and (B).

Tool numbers A: ST33200000 (J-26082)
B: ST30901000 (—)

CAUTION:

Do not reuse 6th main gear.



MAINSHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

16. Select 6th main gear adjusting shim and then install it onto mainshaft.

- Calculate thickness (S) of 6th main gear adjusting shim following the procedure below so that end play dimension between 6th main gear and mainshaft rear bearing becomes the dimension shown below.

End play : Refer to [TM-86, "End Play"](#).

Dimension (S) = (S₁ - S₂) - End play

S : Thickness of adjusting shim

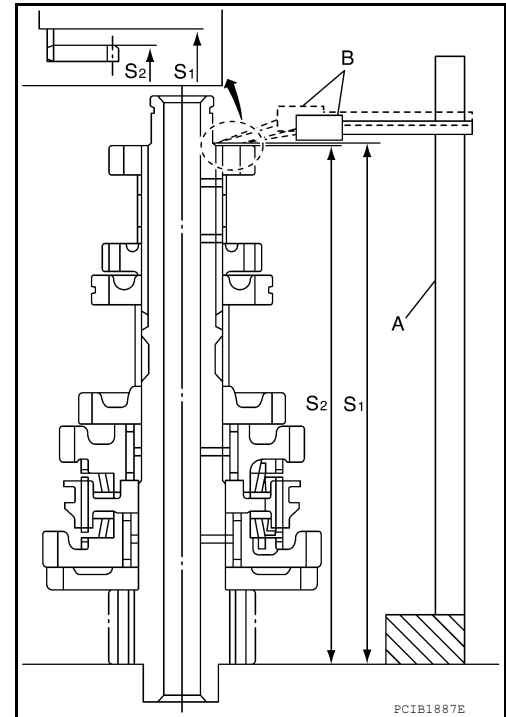
S₁ : Dimension from mainshaft standard face to mainshaft rear bearing press-fit end face

S₂ : Dimension from mainshaft standard face to 6th main gear end face

CAUTION:

Only one adjusting shim can be selected.

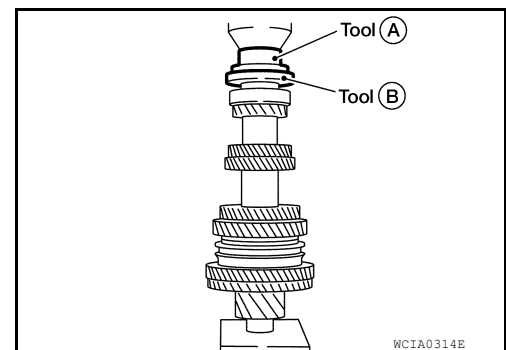
- Measure dimension (S₁) and (S₂) using a height gauge (A) and pick tester (B).
- Install selected 6th main gear adjusting shim to mainshaft.



17. Press in mainshaft rear bearing using Tools.

Tool numbers A: ST30720000 (J-25405)

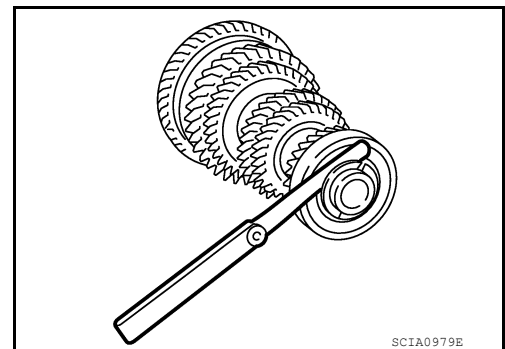
B: ST30901000 (—)



18. Install mainshaft C-ring onto mainshaft and check that end play of mainshaft rear bearing satisfies the standard value.

End play standard value : Refer to [TM-86, "End Play"](#).

- If measurement is outside the standard range, reselect mainshaft C-ring.



MAINSHAFT AND GEAR

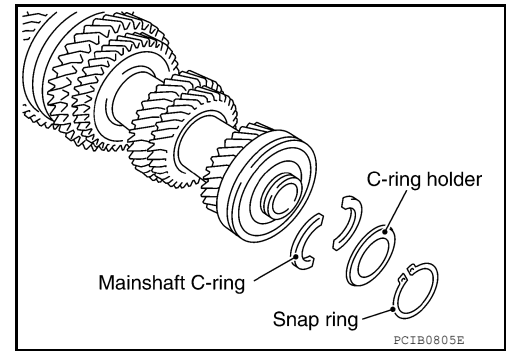
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

19. Install C-ring holder and then install snap ring.

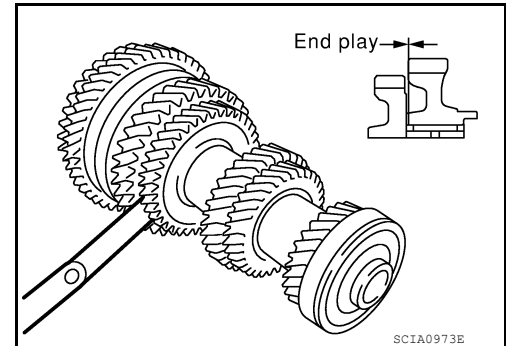
CAUTION:

Do not reuse snap ring.



20. Check end play of 1st and 2nd main gears.

End play standard value : Refer to [TM-86, "End Play"](#).



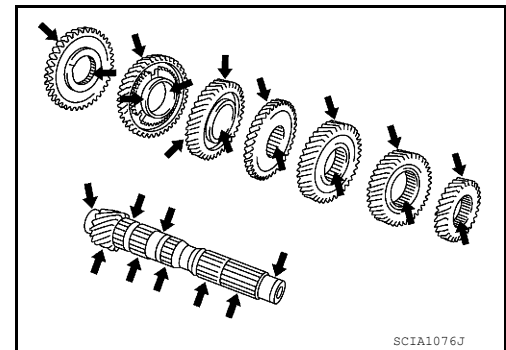
INFOID:000000006390428

Inspection

MAINSHAFT AND GEAR

Check items below. If necessary, replace them with new ones.

- Damage, peeling, dent, uneven wear, bending, and other non-standard conditions of the shaft.
- Excessive wear, damage, peeling, and other non-standard conditions of the gears.

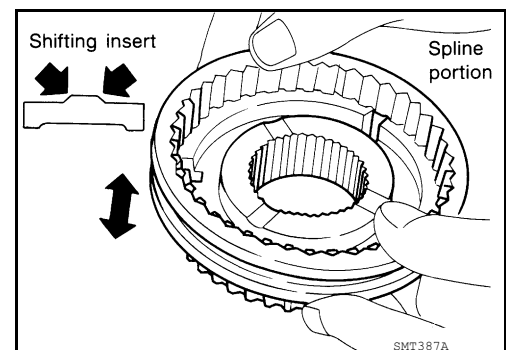


SYNCHRONIZER

Synchronizer Hub and Coupling Sleeve

Check items below. If necessary, replace them with new ones.

- Damage and unusual wear on contact surfaces of coupling sleeve, synchronizer hub and shifting insert.
- Coupling sleeve and synchronizer hub must move smoothly.



Baulk Ring and Spread Spring

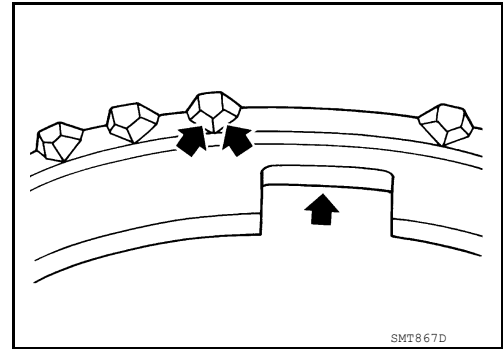
MAINSHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

Check items below. If necessary, replace them with new ones.

- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.

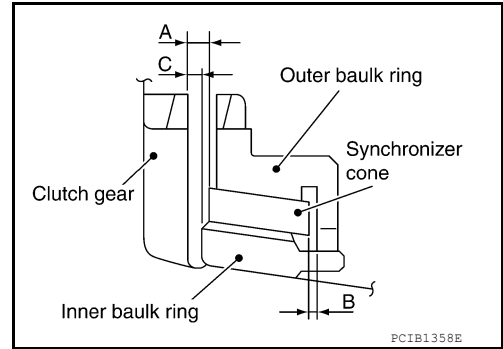


Baulk Ring Clearance for Triple Cone Synchronizer (1st and 2nd)

- Check the clearance between outer baulk ring, synchronizer cone, and inner baulk ring as follows.

CAUTION:

The clearances (A), (B), and (C) are controlled with outer baulk ring, synchronizer cone, and inner baulk ring as a set. Replace them as a set if the clearances are outside the limit value.

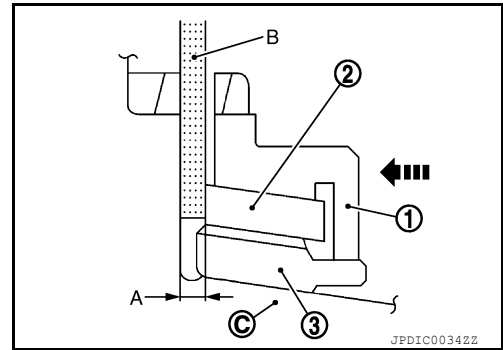


1. Measure the clearance (A) at two points or more diagonally opposite using a feeler gauge (B) when pressing outer baulk ring (1), synchronizer cone (2), and inner baulk ring (3) toward gear taper cone (C). Then calculate mean value.

Clearance (A)

Standard value : Refer to [TM-86, "Baulk Ring Clearance"](#).

Limit value : Refer to [TM-86, "Baulk Ring Clearance"](#).

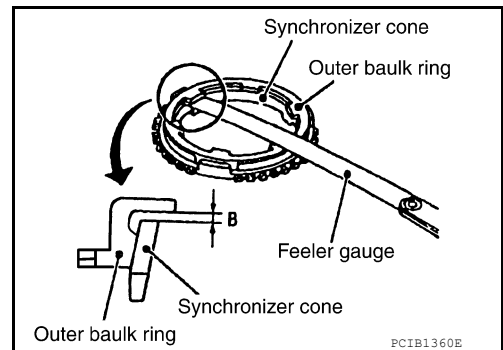


2. Measure the clearance (B) at two points or more diagonally opposite using a feeler gauge. Then calculate mean value.

Clearance (B)

Standard value : Refer to [TM-86, "Baulk Ring Clearance"](#).

Limit value : Refer to [TM-86, "Baulk Ring Clearance"](#).



MAINSHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

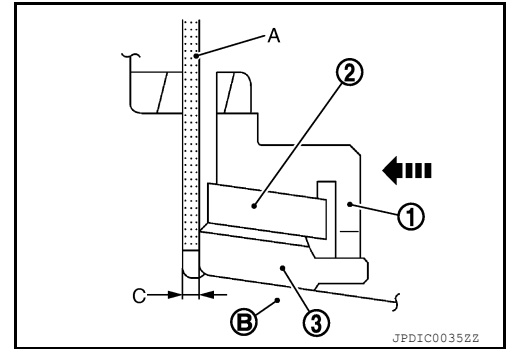
[6MT: RS6F52A]

3. Measure the clearance (C) at two points or more diagonally opposite using a feeler gauge (A) when pressing outer baulk ring (1), synchronizer cone (2), and inner baulk ring (3) toward gear taper cone (B). Then calculate mean value.

Clearance (C)

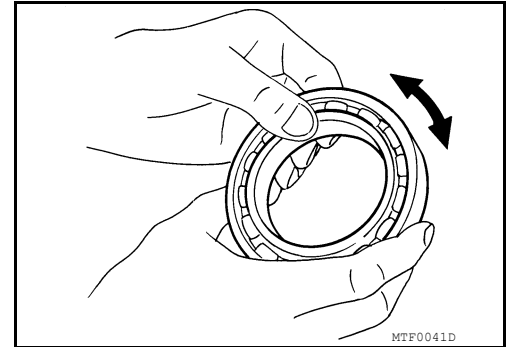
Standard value : Refer to [TM-86, "Baulk Ring Clearance"](#).

Limit value : Refer to [TM-86, "Baulk Ring Clearance"](#).



BEARING

Check bearing for damage and rough rotation. If necessary, replace with new one.



REVERSE IDLER SHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

REVERSE IDLER SHAFT AND GEAR

Exploded View

INFOID:000000006390429

Refer to [TM-31, "Exploded View"](#).

Disassembly

INFOID:000000006390430

1. Remove reverse idler gear (Rear), reverse coupling sleeve, and reverse insert spring simultaneously.
2. Remove reverse idler gear needle bearing.
3. Remove thrust needle bearing.
4. Remove reverse baulk ring.
5. Remove reverse idler gear (Front).
6. Remove reverse idler gear needle bearing.
7. Remove thrust needle bearing.
8. Remove retaining pin from reverse idler shaft.

Assembly

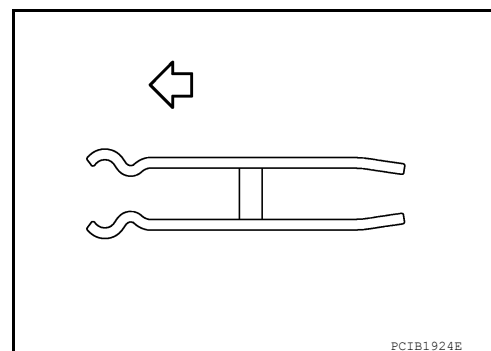
INFOID:000000006390431

Assembly is in the reverse order of disassembly.

⇐ Front

CAUTION:

- Be careful with orientation of reverse insert spring.
- Do not reuse retaining pin.



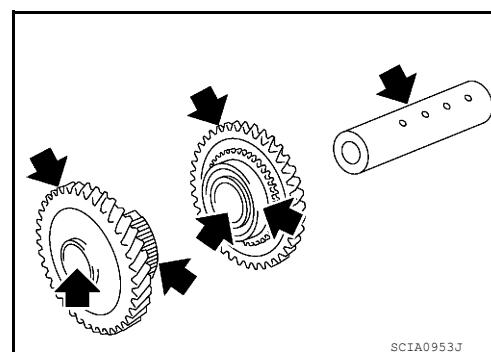
INFOID:000000006390432

Inspection

REVERSE IDLER SHAFT AND GEAR

Check items below. If necessary, replace them with new ones.

- Damage, peeling, dent, uneven wear, bending, and other non-standard conditions of the shaft.
- Excessive wear, damage, peeling, and other non-standard conditions of the gears.



SYNCHRONIZER

Synchronizer Hub and Coupling Sleeve

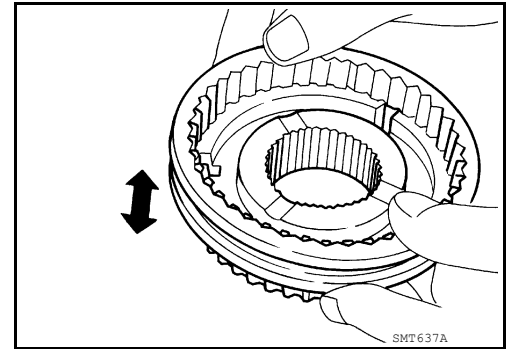
REVERSE IDLER SHAFT AND GEAR

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

Check items below. If necessary, replace them with new ones.

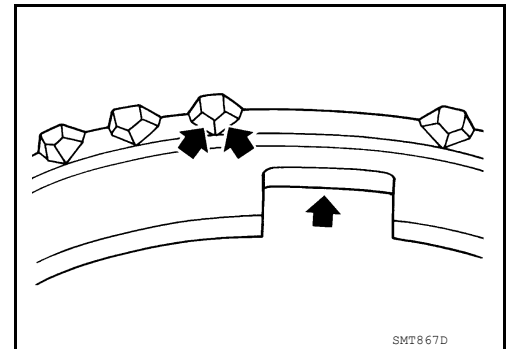
- Damage and unusual wear on contact surfaces of coupling sleeve, synchronizer hub of reverse idler gear (Rear), and insert spring.
- Coupling sleeve and synchronizer hub of reverse idler gear (Rear) must move smoothly.



Baulk Ring

Check items below. If necessary, replace them with new ones.

- If any crack, damage, or excessive wear is found on cam face of baulk ring or working face of insert, replace it.



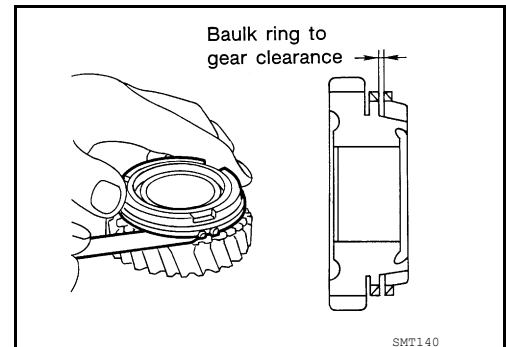
Baulk Ring Clearance for Single Cone Synchronizer (Reverse)

- Push baulk ring on the cone and measure the clearance between baulk ring and cone. If the measurement is below limit, replace it with a new one.

Clearance

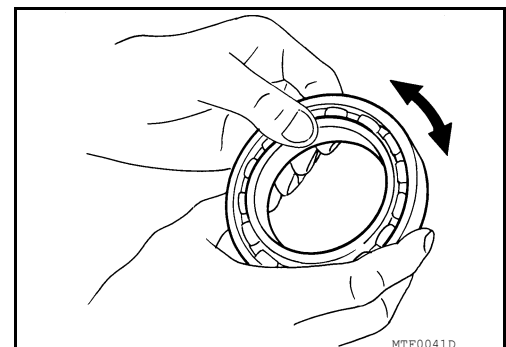
Standard value : Refer to [TM-86, "Baulk Ring Clearance"](#).

Limit value : Refer to [TM-86, "Baulk Ring Clearance"](#).



BEARING

Check bearing for damage and rough rotation. If necessary, replace with new one.



FINAL DRIVE

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

FINAL DRIVE

Exploded View

INFOID:000000006390433

Refer to [TM-31, "Exploded View"](#).

Disassembly

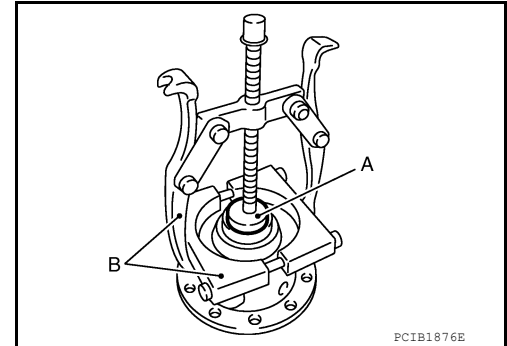
INFOID:000000006390434

1. Remove final gear bolts and then separate the final gear from differential case.
2. Remove differential side bearing (clutch housing side) using Tool (A) and suitable puller (B).

Tool number : ST33061000 (J-8107-2)

CAUTION:

Hook a puller on the cage of differential side bearing.

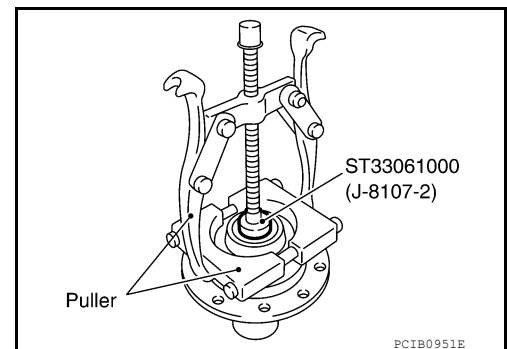


3. Remove speedometer drive gear.
4. Remove differential side bearing (transaxle case side) using Tool and suitable puller.

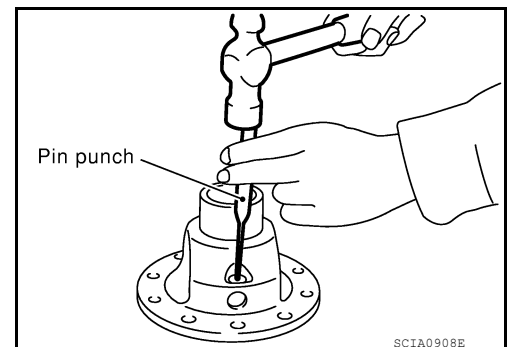
Tool number : ST33061000 (J-8107-2)

CAUTION:

Hook a puller on the inner race of differential side bearing.



5. Remove retaining pin from differential case using suitable tool and then remove pinion mate shaft.
6. Rotate pinion mate gears and remove pinion mate gears, pinion mate thrust washers, side gears, and side gear thrust washers from differential case.



Assembly

INFOID:000000006390435

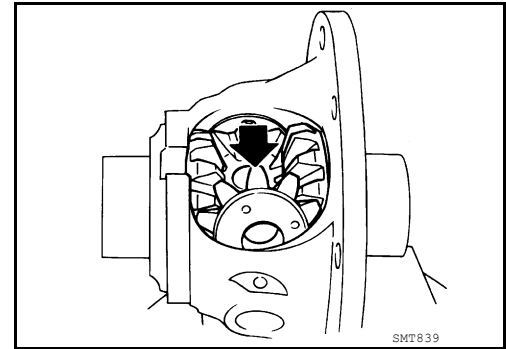
1. Apply gear oil to sliding area of differential case, each gear, and thrust washer.

FINAL DRIVE

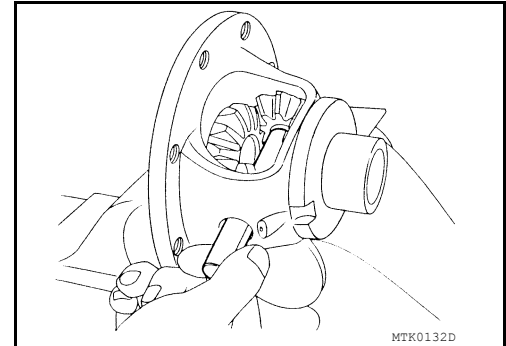
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

2. Install side gear thrust washers and side gears into differential case.
3. While rotating pinion mate thrust washers and pinion mate gears, aligning them diagonally, install them into differential case.

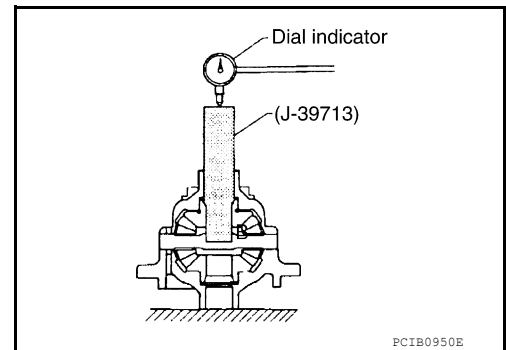


4. Insert pinion mate shaft into differential case.
CAUTION:
Do not damage pinion mate thrust washers.



5. Measure end play of side gears following the procedure below. Then select side gear thrust washer.
 - a. Put differential case vertically so that its side gear to be measured faces upward.
 - b. Place the Tool and a dial indicator onto side gears.

Tool number : — (J-39713)

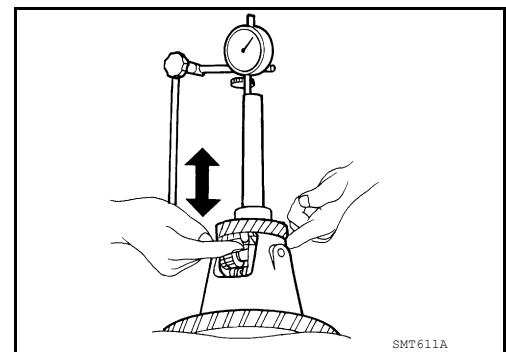


- c. Move side gears up and down to measure the clearance and select thrust washer so that it satisfies the standard value.

Allowable Clearance between side gear and differential case with thrust washer : Refer to [TM-87, "Differential Side Gear Clearance"](#).

CAUTION:

- There should be no resistance and gears should rotate freely.
- Place differential case upside down. Measure the end play for opposite side-gears likewise securely.
- Only one thrust washer can be selected.



FINAL DRIVE

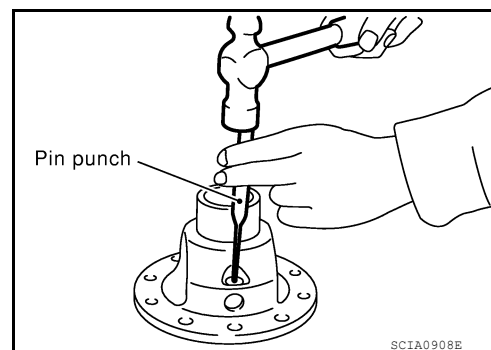
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

6. Install retaining pin into pinion mate shaft using suitable tool.

CAUTION:

Do not reuse retaining pin.



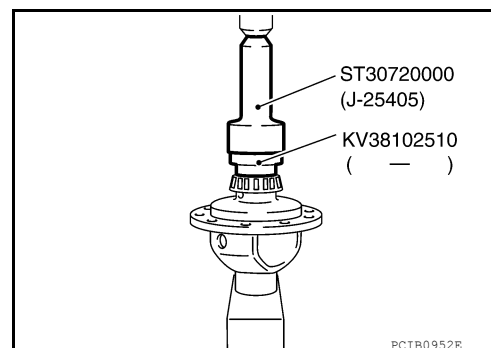
7. Press in differential side bearing (transaxle case side) to differential case using Tools.

Tool numbers : ST30720000 (J-25405)

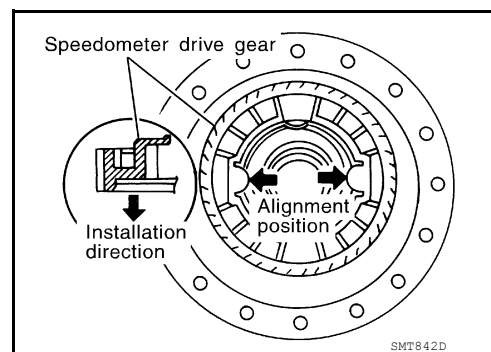
: KV38102510 (—)

CAUTION:

Replace differential side bearing and differential side bearing outer race as a set.



8. Align and install speedometer drive gear onto differential case.



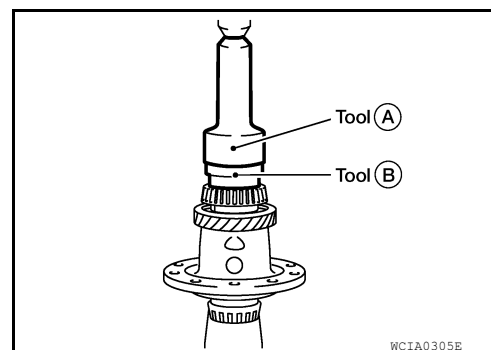
9. Press in differential side bearing (clutch housing side) to differential case using Tools (A) and (B).

Tool numbers A: ST30720000 (J-25405)

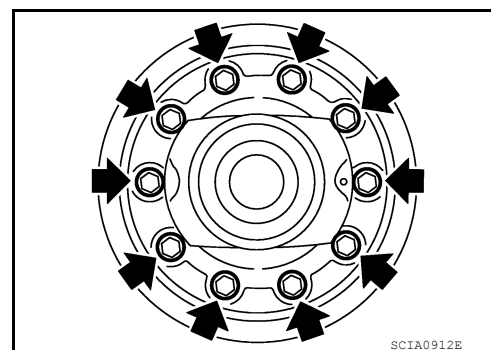
B: KV38102510 (—)

CAUTION:

- Do not reuse differential side bearing and differential side bearing outer race.
- Replace differential side bearing and differential side bearing outer race as a set.



10. Install final gear into differential case and tighten final gear bolts to the specified torque.



FINAL DRIVE

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

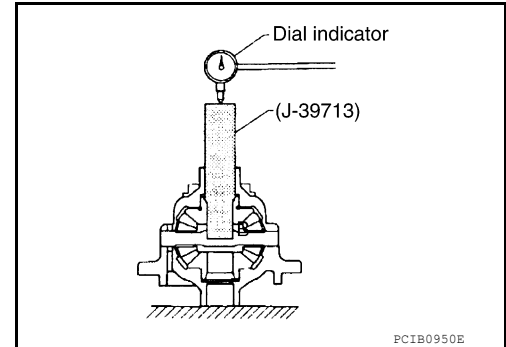
INFOID:000000006390436

Inspection

INSPECTION BEFORE DISASSEMBLY

- Check the clearance between side gear and differential case as follows.
1. Clean final drive assembly sufficiently to prevent side gear thrust washer, differential case, side gear, and other parts from sticking by gear oil.
 2. Put differential case vertically so that side gear to be measured faces upward.
 3. Place Tool and a dial indicator onto side gear.

Tool number : — (J-39713)



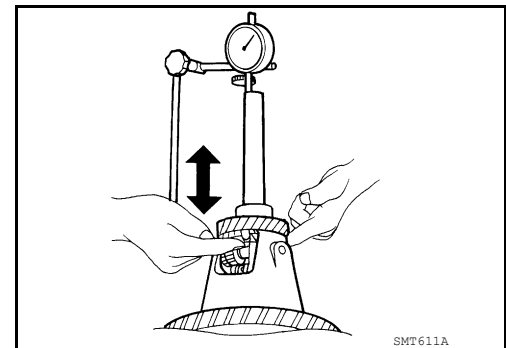
4. Move side gear up and down, and measure the clearance.

Allowable Clearance between side gear and differential case with thrust washer : Refer to [TM-87, "Differential Side Gear Clearance"](#).

CAUTION:

There should be no resistance and gears should rotate freely.

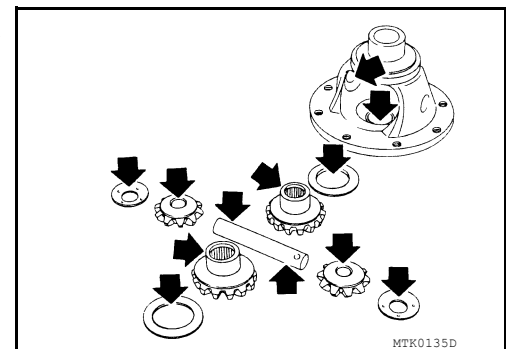
5. If not within specification, adjust the clearance by changing side gear thrust washer thickness.
6. Turn differential case upside down and measure the clearance between side gear and differential case on the other side in the same way.



INSPECTION AFTER DISASSEMBLY

Gear, Washer, Shaft, And Case

- Check side gears, side gear thrust washers, pinion mate shaft, pinion mate gears, pinion mate thrust washers and differential case. If necessary, replace with a new one.



Bearing

FINAL DRIVE

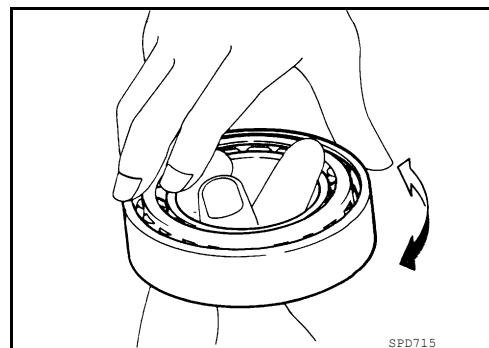
< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

- Check for bearing damage and rough rotation. If necessary, replace with a new one.

CAUTION:

When replacing tapered roller bearing, replace outer and inner races as a set.



A

B

C

TM

E

F

G

H

I

J

K

L

M

N

O

P

SHIFT FORK AND FORK ROD

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

SHIFT FORK AND FORK ROD

Exploded View

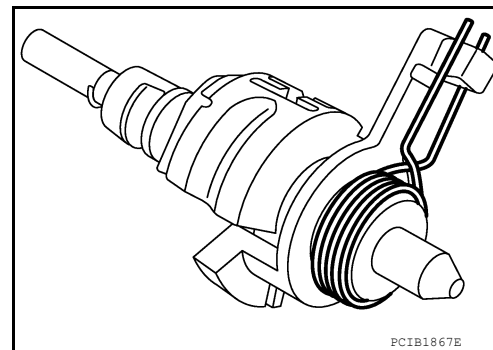
INFOID:000000006390437

Refer to [TM-31, "Exploded View"](#).

Disassembly

INFOID:000000006390438

1. Remove return spring to striking rod assembly.



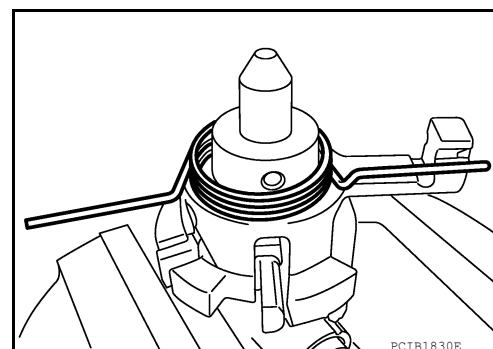
Assembly

INFOID:000000006390439

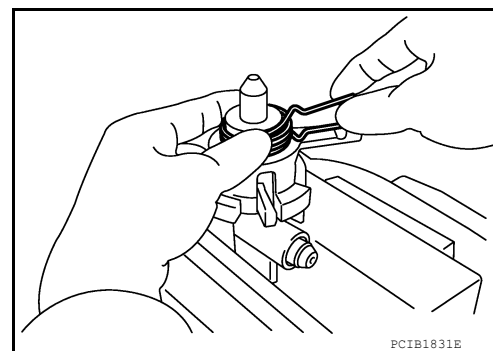
1. Temporarily install return spring to striking rod assembly.

CAUTION:

Be careful with the orientation of return spring.

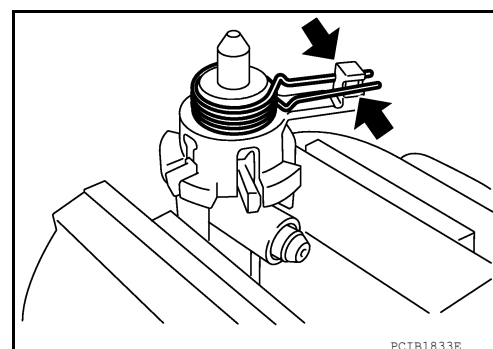


2. Attach one end of the return spring to striking interlock of striking rod assembly while holding return spring.



CAUTION:

- When installing, check that return spring is securely seated in the groove of striking interlock of striking rod assembly.



SHIFT FORK AND FORK ROD

< UNIT DISASSEMBLY AND ASSEMBLY >

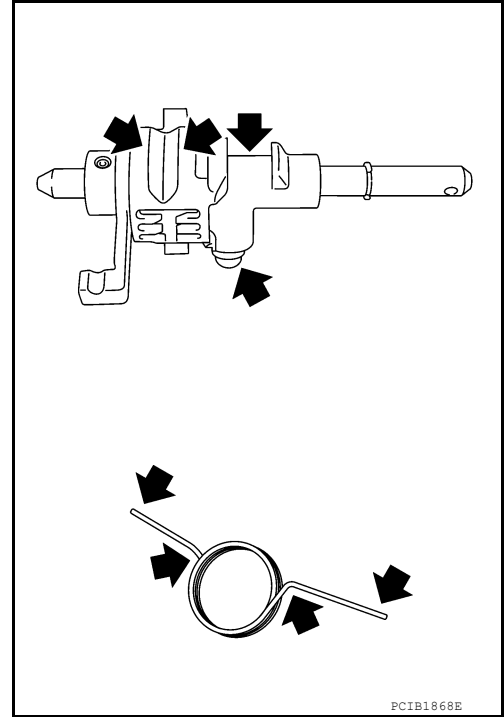
[6MT: RS6F52A]

Inspection

INFOID:000000006390440

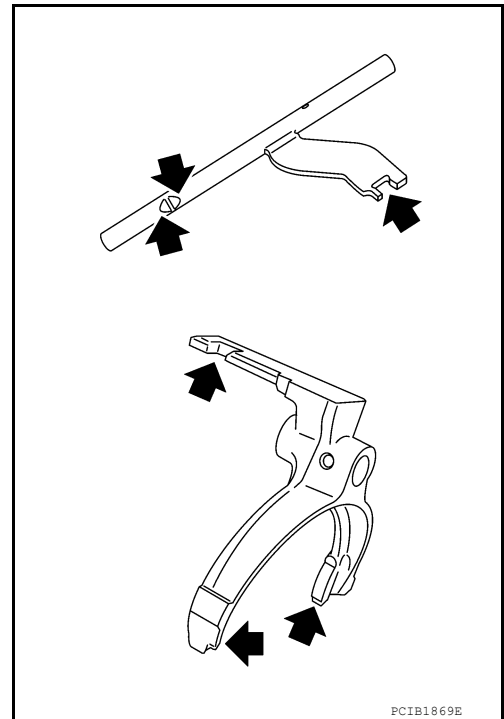
STRIKING ROD ASSEMBLY AND RETURN SPRING

- Check contact surfaces and sliding area for wear, damage, bending, etc. If necessary, replace parts.



FORK ROD AND SHIFT FORK

- Check contact surfaces and sliding area for wear, damage, bending, etc. If necessary, replace parts.



SHIFT FORK

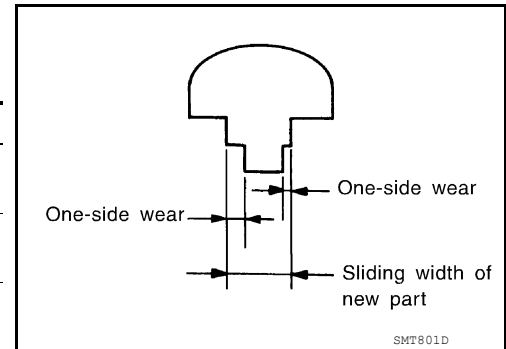
SHIFT FORK AND FORK ROD

< UNIT DISASSEMBLY AND ASSEMBLY >

[6MT: RS6F52A]

- Check if the width of shift fork hook (sliding area with coupling sleeve) is within allowable specification below.

Item	One-side wear specification	Sliding width of new part
1st-2nd	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)
3rd-4th	0.2 mm (0.008 in)	7.80 - 7.93 mm (0.3071 - 0.3122 in)
5th-6th	0.2 mm (0.008 in)	6.10 - 6.23 mm (0.2402 - 0.2453 in)
Reverse	0.2 mm (0.008 in)	12.80 - 12.93 mm (0.5039 - 0.5091 in)



SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[6MT: RS6F52A]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

INFOID:000000006390441

TRANSAXLE

Engine type			QR25DE		
Transaxle model			RS6F52A		
Number of speed			6		
Synchromesh type			Warner		
Shift pattern			<div><div><div>R</div><div>1</div><div>3</div><div>5</div></div><div><div></div><div></div><div>N</div><div></div></div><div><div>2</div><div>4</div><div>6</div></div></div> <div>PCIB1769E</div>		
Gear ratio	1st		3.153		
	2nd		1.950		
	3rd		1.392		
	4th		1.055		
	5th		0.809		
	6th		0.630		
	Reverse		3.002		
Number of teeth	Input gear	1st	14		
		2nd	20		
		3rd	28		
		4th	36		
		5th	42		
		6th	49		
		Reverse	14		
	Main gear	1st	49		
		2nd	39		
		3rd	39		
		4th	38		
		5th	34		
		6th	33		
		Reverse	38		
	Reverse idler gear	Front	37		
		Rear	38		
Oil level			mm (in)		
			61.0 - 67.0 (2.402 - 2.638)		
Oil capacity (Reference)			ℓ (US pt, Imp pt)		
			1.7 (3-5/8, 3)		
Remarks	Reverse synchronizer		Installed		
	Double-cone synchronizer		3rd		
	Triple-cone synchronizer		1st and 2nd		

FINAL GEAR

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[6MT: RS6F52A]

Transaxle model		RS6F52A
Final gear ratio		4.133
Number of teeth	Final gear/Pinion	61/16
	Side gear/Pinion mate gear	14/10

End Play

INFOID:000000006390442

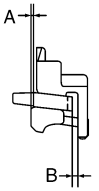
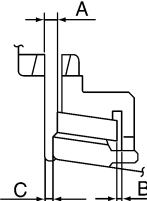
Unit: mm (in)

Items	Standard value
1st main gear	0.20 - 0.30 (0.0079 - 0.0118)
2nd main gear	0.06 - 0.16 (0.0024 - 0.0063)
6th main gear	0 - 0.1 (0 - 0.004)
3rd input gear	0.18 - 0.31 (0.0071 - 0.0122)
4th input gear	0.20 - 0.30 (0.0079 - 0.0118)
5th input gear	0.06 - 0.16 (0.0024 - 0.0063)
6th input gear	0.06 - 0.16 (0.0024 - 0.0063)
Reverse idler gear	0.04 - 0.10 (0.0016 - 0.0039)
6th input gear bushing	0 - 0.1 (0 - 0.004)
Input shaft	0 - 0.06 (0 - 0.0024)
Mainshaft	0 - 0.06 (0 - 0.0024)
Mainshaft C-ring	0 - 0.06 (0 - 0.0024)
Striking rod	0.05 - 0.152 (0.0020 - 0.0060)

Baulk Ring Clearance

INFOID:000000006390443

Unit: mm (in)

Measurement point		Standard value	Limit value
3rd (Double-cone synchronizer)	Clearance between synchronizer cone and inner baulk ring end face "A"	0.6 - 0.8 (0.024 - 0.031)	0.2 (0.008)
	Clearance between outer baulk ring pawl and synchronizer cone "B"	0.6 - 1.1 (0.024 - 0.043)	0.2 (0.008)
 <p>PCIB0249E</p>			
1st and 2nd (Triple-cone synchronizer)	Clearance between synchronizer cone and clutch gear end face "A"	0.6 - 1.2 (0.024 - 0.047)	0.3 (0.012)
	Clearance between outer baulk ring pawl and synchronizer cone "B"	0.6 - 1.1 (0.024 - 0.043)	0.2 (0.008)
	Clearance between inner baulk ring and clutch gear end face "C"	0.7 - 1.1 (0.028 - 0.043)	0.3 (0.012)
 <p>PCIB0835J</p>			
4th		0.9 - 1.45 (0.035 - 0.057)	0.7 (0.028)
5th		0.95 - 1.4 (0.037 - 0.055)	0.7 (0.028)
6th		0.95 - 1.4 (0.037 - 0.055)	0.7 (0.028)
Reverse		0.95 - 1.4 (0.037 - 0.055)	0.7 (0.028)

SERVICE DATA AND SPECIFICATIONS (SDS)

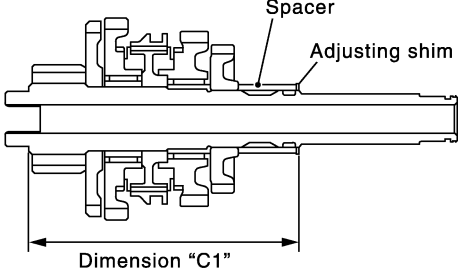
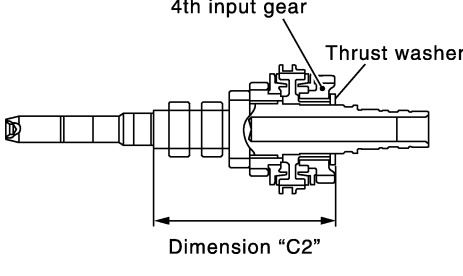
< SERVICE DATA AND SPECIFICATIONS (SDS)

[6MT: RS6F52A]

Dimension

INFOID:000000006390444

Unit: mm (in)

Measurement point	Standard value
Mainshaft: Dimension "C1"  <p>SCIA1009E</p>	173.85 - 173.95 (6.844 - 6.848)
Input shaft: Dimension "C2"  <p>SCIA1008E</p>	154.7 - 154.8 (6.091 - 6.094)

Differential Side Bearing Preload

INFOID:000000006390445

Unit: mm (in)

Differential side bearing preload: L*	0.15 - 0.21 (0.0059 - 0.0083)
---------------------------------------	-------------------------------

*: Install shims which are "deflection of differential case" + "L" in thickness.

Differential Side Gear Clearance

INFOID:000000006390446

Unit: mm (in)

Allowable clearance between side gear and differential case with thrust washer	0.1 - 0.2 (0.004 - 0.008)
--	---------------------------

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

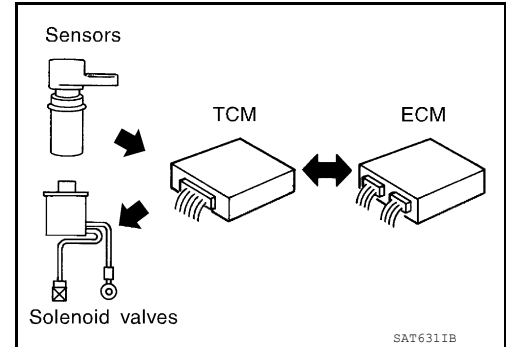
Work Flow

INFOID:000000006390447

INTRODUCTION

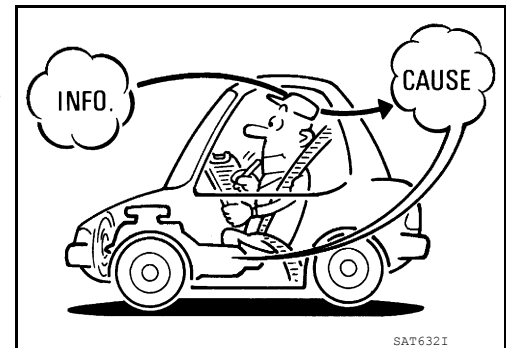
The TCM receives a signal from the vehicle speed sensor, transmission range switch and provides shift control or lock-up control via CVT solenoid valves.

Input and output signals must always be correct and stable in the operation of the CVT system. The CVT system must be in good operating condition and be free of valve seizure, solenoid valve malfunction, etc.



It is much more difficult to diagnose an error that occurs intermittently rather than continuously. Most intermittent errors are caused by poor electric connections or improper wiring. In this case, careful checking of suspected circuits may help prevent the replacement of good parts.

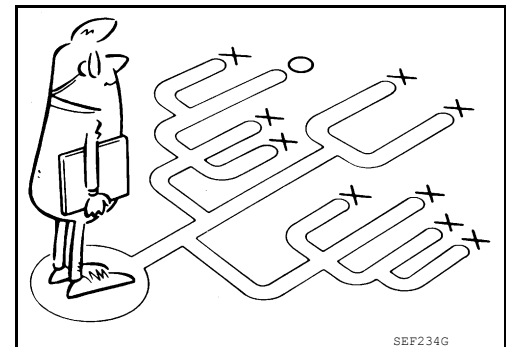
A visual check only may not find the cause of the errors. A road test with CONSULT-III or a circuit tester connected should be performed. Follow the "DETAILED FLOW".



Before undertaking actual checks, take a few minutes to talk with a customer who approaches with a driveability complaint. The customer can supply good information about such errors, especially intermittent ones. Find out what symptoms are present and under what conditions they occur. A "Diagnostic Work Sheet" as shown on the example (Refer to [TM-89](#)) should be used.

Start your diagnosis by looking for "conventional" errors first. This will help troubleshoot driveability errors on an electronically controlled engine vehicle.

Also check related Service bulletins.



DETAILED FLOW

1. COLLECT THE INFORMATION FROM THE CUSTOMER

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred) using diagnosis worksheet. Refer to [TM-89, "Diagnostic Work Sheet"](#).

>> GO TO 2.

2. CHECK SYMPTOM 1

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

- Fail-safe. Refer to [TM-195, "Fail-safe"](#).
- CVT fluid inspection. Refer to [TM-225, "Inspection"](#).
- Line pressure test. Refer to [TM-232, "Inspection and Judgment"](#).
- Stall test. Refer to [TM-230, "Inspection and Judgment"](#).

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CVT: RE0F09B]

>> GO TO 3.

3.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.
 - Record DTC.
 - Erase DTC. Refer to [TM-123, "CONSULT-III Function \(TRANSMISSION\)"](#).

Is any DTC detected?

YES >> GO TO 4.

NO >> GO TO 6.

4.PERFORM DIAGNOSTIC PROCEDURE

Perform "Diagnostic Procedure" for the displayed DTC.

>> GO TO 5.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform "DTC Confirmation Procedure" for the displayed DTC.

Is DTC detected?

YES >> GO TO 4.

NO >> GO TO 6.

6.CHECK SYMPTOM 2

Try to confirm the symptom described by the customer.

Is any malfunction present?

YES >> GO TO 7.

NO >> **INSPECTION END**

7.ROAD TEST

1. Perform "ROAD TEST". Refer to [TM-234, "Description"](#).

>> GO TO 8.

8.CHECK SYMPTOM 3

Try to confirm the symptom described by the customer.

Is any malfunction present?

YES >> GO TO 2.

NO >> **INSPECTION END**

Diagnostic Work Sheet

INFOID:000000006390448

INFORMATION FROM CUSTOMER

KEY POINTS

- **WHAT**..... Vehicle & CVT model
- **WHEN**..... Date, Frequencies
- **WHERE**..... Road conditions
- **HOW**..... Operating conditions, Symptoms

Customer name	MR/MS	Model & Year	VIN
Trans. Model		Engine	Mileage
Malfunction Date		Manuf. Date	In Service Date
Frequency		<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent (times a day)	

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CVT: RE0F09B]

Symptoms	<input type="checkbox"/> Vehicle does not move. (<input type="checkbox"/> Any position <input type="checkbox"/> Particular position)
	<input type="checkbox"/> No shift
	<input type="checkbox"/> Lock-up malfunction
	<input type="checkbox"/> Shift shock or slip (<input type="checkbox"/> N → D <input type="checkbox"/> N → R <input type="checkbox"/> Lock-up <input type="checkbox"/> Any drive position)
	<input type="checkbox"/> Noise or vibration
	<input type="checkbox"/> No pattern select
	<input type="checkbox"/> Others ()

DIAGNOSTIC WORK SHEET

1	<input type="checkbox"/> Read the item on cautions concerning fail-safe and understand the customer's complaint.		TM-195
2	<input type="checkbox"/> CVT fluid inspection, stall test and line pressure test		
		<input type="checkbox"/> CVT fluid inspection	TM-225
		<input type="checkbox"/> Leak (Repair leak location.) <input type="checkbox"/> State <input type="checkbox"/> Amount	
		<input type="checkbox"/> Stall test	
		<input type="checkbox"/> Torque converter one-way clutch <input type="checkbox"/> Reverse brake <input type="checkbox"/> Forward clutch <input type="checkbox"/> Steel belt <input type="checkbox"/> Engine <input type="checkbox"/> Line pressure low <input type="checkbox"/> Primary pulley <input type="checkbox"/> Secondary pulley	
	<input type="checkbox"/> Line pressure inspection - Suspected part:		TM-230, TM-232
3	<input type="checkbox"/> Perform self-diagnosis.		TM-123
		Enter checks for detected items.	
4	<input type="checkbox"/> Perform road test.		TM-234
	4-1.	Check before engine is started	TM-234
	4-2.	Check at idle	TM-235
	4-3.	Cruise test	TM-236
5	<input type="checkbox"/> Inspect each system for items found to be NG in the self-diagnosis and repair or replace the malfunctioning parts.		
6	<input type="checkbox"/> Perform all road tests and enter the checks again for the required items.		TM-234
7	<input type="checkbox"/> For any remaining NG items, perform the "diagnosis procedure" and repair or replace the malfunctioning parts.		
8	<input type="checkbox"/> Erase the results of the self-diagnosis from the TCM.		TM-123

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly

INFOID:000000006390449

SERVICE AFTER REPLACING TCM AND TRANSAXLE ASSEMBLY

Perform the applicable service according to the following table when replacing TCM or transaxle assembly.

CAUTION:

- **Never start the engine until the service is completed.**
- **“DTC P1701” may be indicated soon after replacing TCM or transaxle assembly (after erasing the memory in the pattern B). Restart the self-diagnosis after erasing the self-diagnosis result using CONSULT-III. Check that no error is detected.**

TCM	Transaxle assembly	Service pattern
Replaced with new unit	Not replaced the unit	“PATTERN A”
Not replaced the unit	Replaced with new or old unit	“PATTERN B”
Replaced with old unit	Not replaced the unit	
	Replaced with new or old unit	“PATTERN C”
Replaced with new unit	Replaced with new or old unit	

NOTE:

Old unit means that the unit has been already used for another vehicle.

PATTERN A

1. Shift the selector lever to “P” position after replacing TCM.
2. Turn ignition switch ON.
3. Check that the shift position indicator in the combination meter turns ON (It indicates approximately 1 or 2 seconds after turning ignition switch ON.)
 - Check the following items if shift position indicator does not turn ON. Repair or replace accordingly as necessary.
 - The harness between TCM and ROM ASSY in transaxle assembly is open or shorted.
 - Terminals disconnected, loose, or bent from connector housing.

PATTERN B

1. Turn ignition switch ON after replacing each part.
2. Connect the vehicle with CONSULT-III.
3. Start engine.
 - CAUTION:**
Never start driving.
4. Select “Data monitor” in “TRANSMISSION”.
5. Warm up transaxle assembly until “ATFTEMP COUNT” indicates 47 [approximately 20°C (68°F)] or more, and then turn ignition switch OFF.
6. Turn ignition switch ON.
 - CAUTION:**
Never start engine.
7. Select “Self Diagnostic Results” in “TRANSMISSION”.
8. Shift the selector lever to “R” position.
9. Depress slightly the accelerator pedal (Pedal angle: 2/8) while depressing the brake pedal.
10. Select “Erase” with step 9.
11. Release brake pedal and accelerator pedal.
12. Turn ignition switch OFF while keeping the selector lever in “R” position.
13. Wait approximately 10 seconds.
14. Turn ignition switch ON while keeping the selector lever in “R” position.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[CVT: RE0F09B]

15. Select "Special function" in "TRANSMISSION".
16. Check that the value on "CALIB DATA" in CONSULT-III is the same as the data listed in the table below.
 - Restart the procedure from step 3 if the values are not the same.

CALIB DATA

Item name	Display value
UNIT CLB ID 1	00
UNIT CLB ID 2	00
UNIT CLB ID 3	00
UNIT CLB ID 4	00
UNIT CLB ID 5	00
UNIT CLB ID 6	00

17. Shift the selector lever to "P" position.
18. Check that the shift position indicator in combination meter turns ON. (It indicates approximately 1 or 2 seconds after shifting the selector lever to "P" position.)
 - Check the following items if shift position indicator does not turn ON. Repair or replace accordingly as necessary.
 - The harness between TCM and ROM ASSY in transaxle assembly is open or shorted.
 - Terminals disconnected, loose, or bent from connector housing.
 - Power supply and ground of TCM. Refer to [TM-172, "Description"](#).

PATTERN C

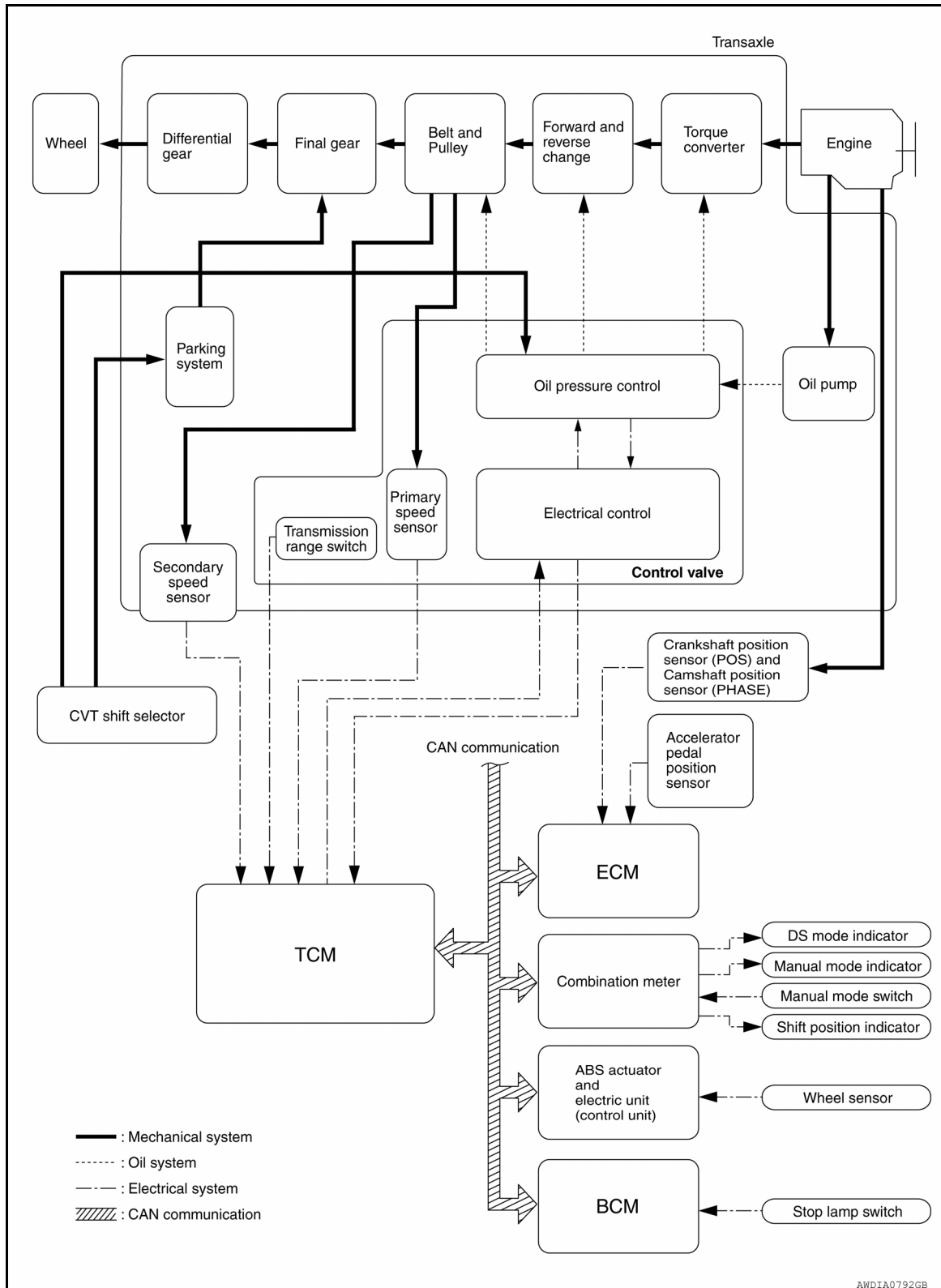
1. Replace transaxle assembly first, and then replace TCM.
2. Perform the service of "PATTERN A".
(Perform the service of "PATTERN B" if TCM is replaced first.)

SYSTEM DESCRIPTION

CVT SYSTEM

System Diagram

INFOID:000000006390450



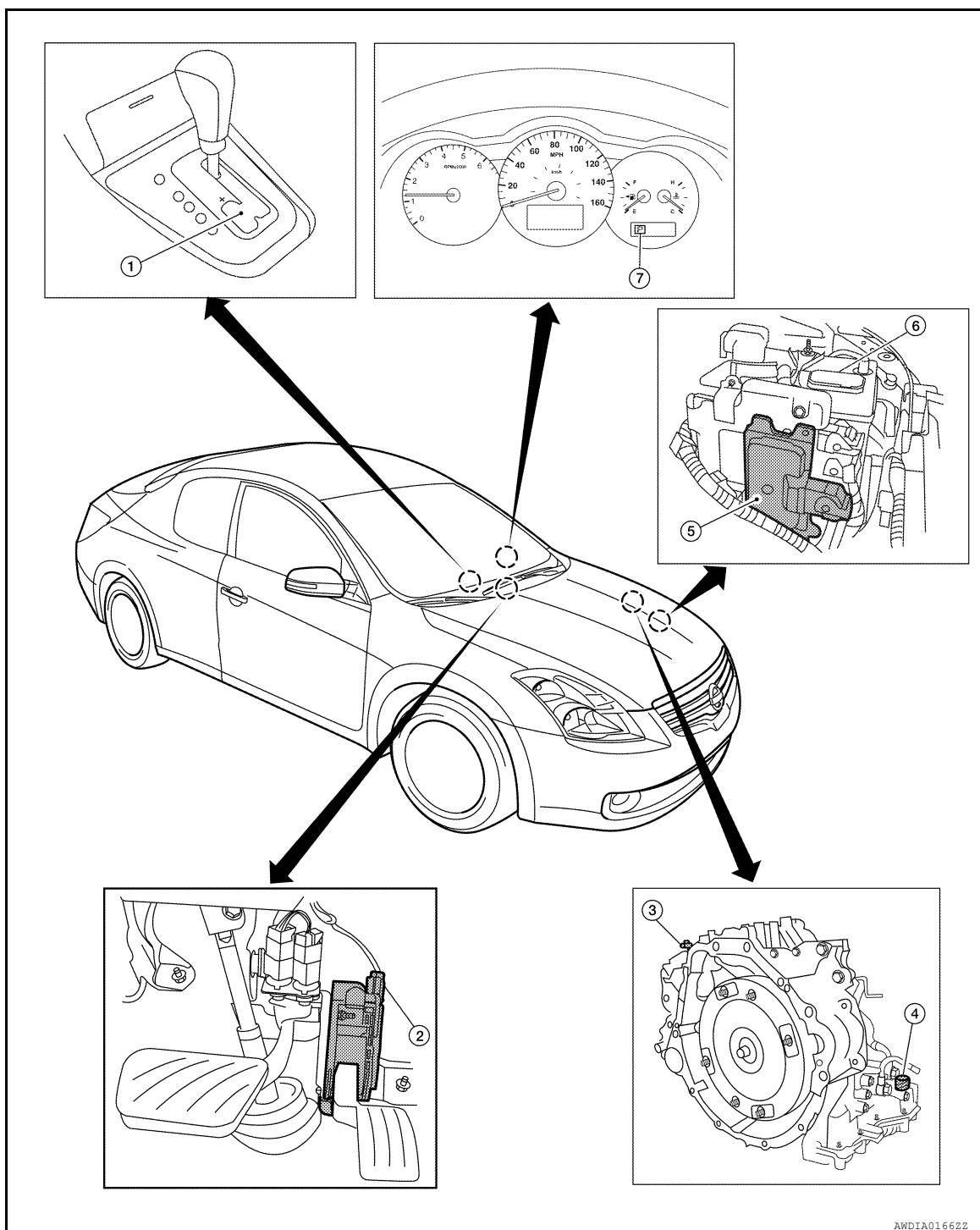
CVT SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Coupe

INFOID:000000006390451



- | | | |
|---|--|---------------------------|
| 1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch) | 2. Accelerator pedal position (APP) sensor | 3. Secondary speed sensor |
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator
Manual mode indicator
DS mode indicator | | |

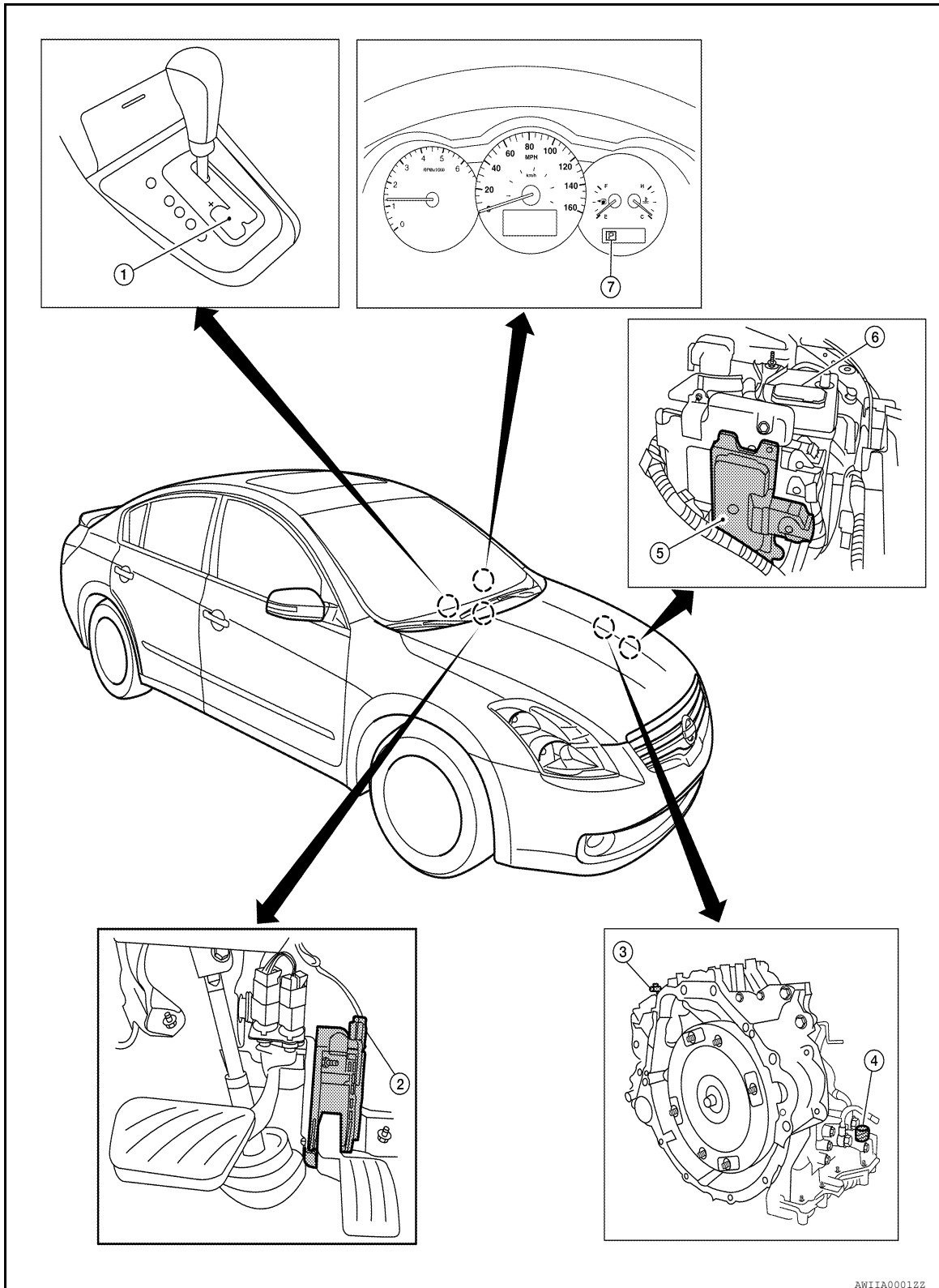
CVT SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Sedan

INFOID:000000006390452



1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch)
2. Accelerator pedal position (APP) sensor
3. Secondary speed sensor

CVT SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

-
- | | | |
|-------------------------------|--------|------------|
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator | | |
| Manual mode indicator | | |
| DS mode indicator | | |

MECHANICAL SYSTEM

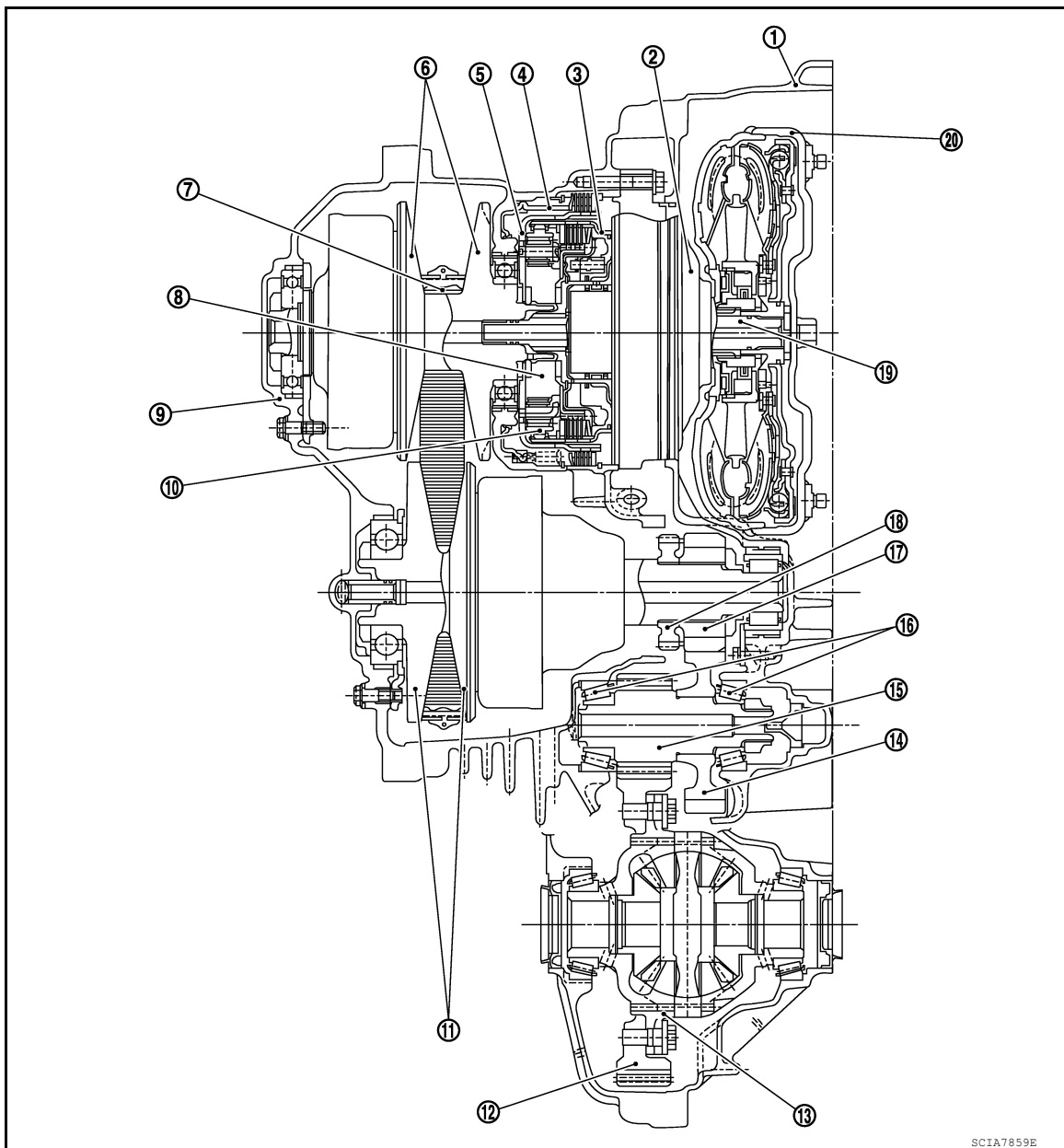
< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

MECHANICAL SYSTEM

Cross-Sectional View

INFOID:000000006390453



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

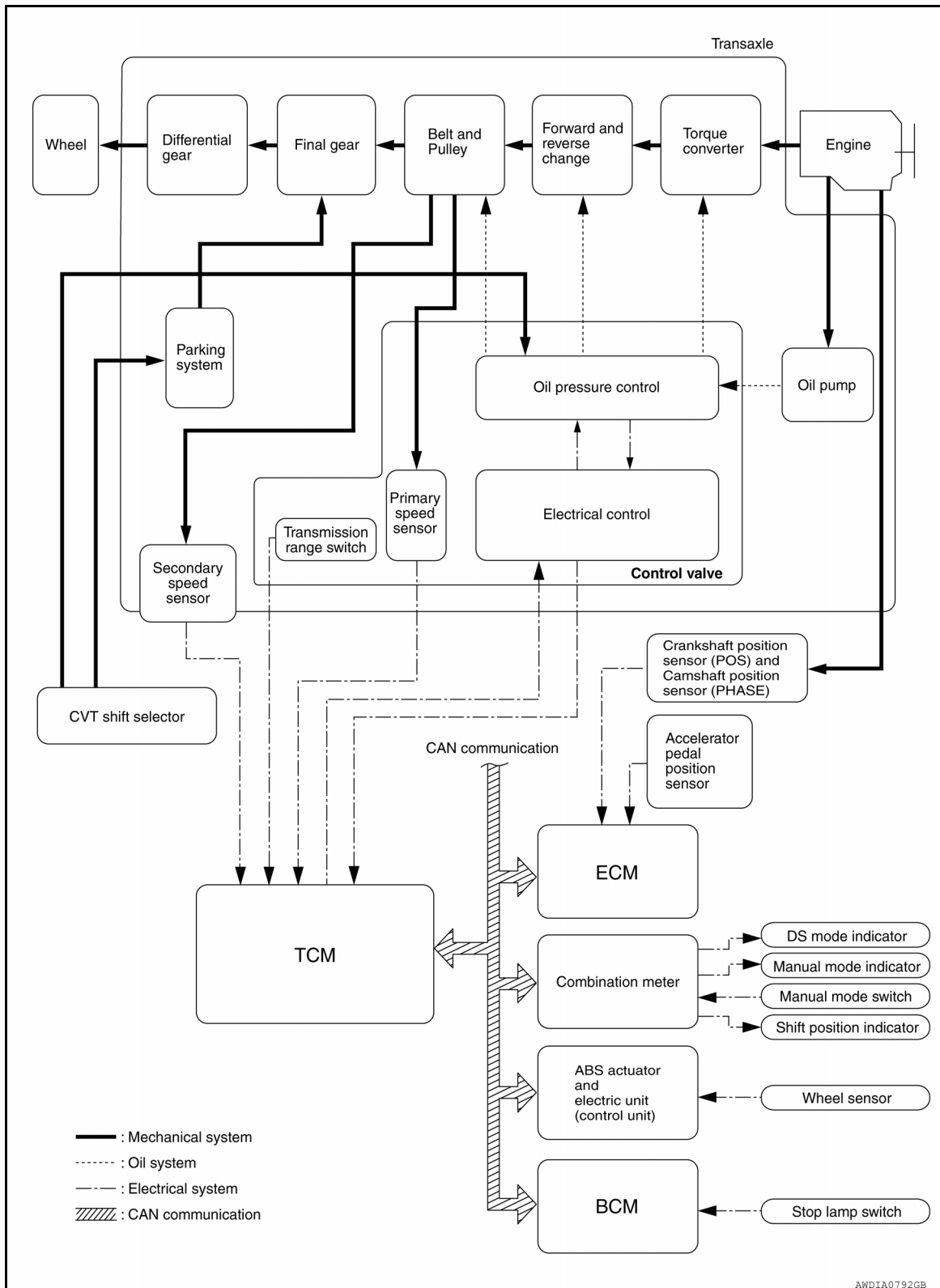
MECHANICAL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

System Diagram

INFOID:000000006390454



System Description

INFOID:000000006390455

Transmits the power from the engine to the drive wheel.

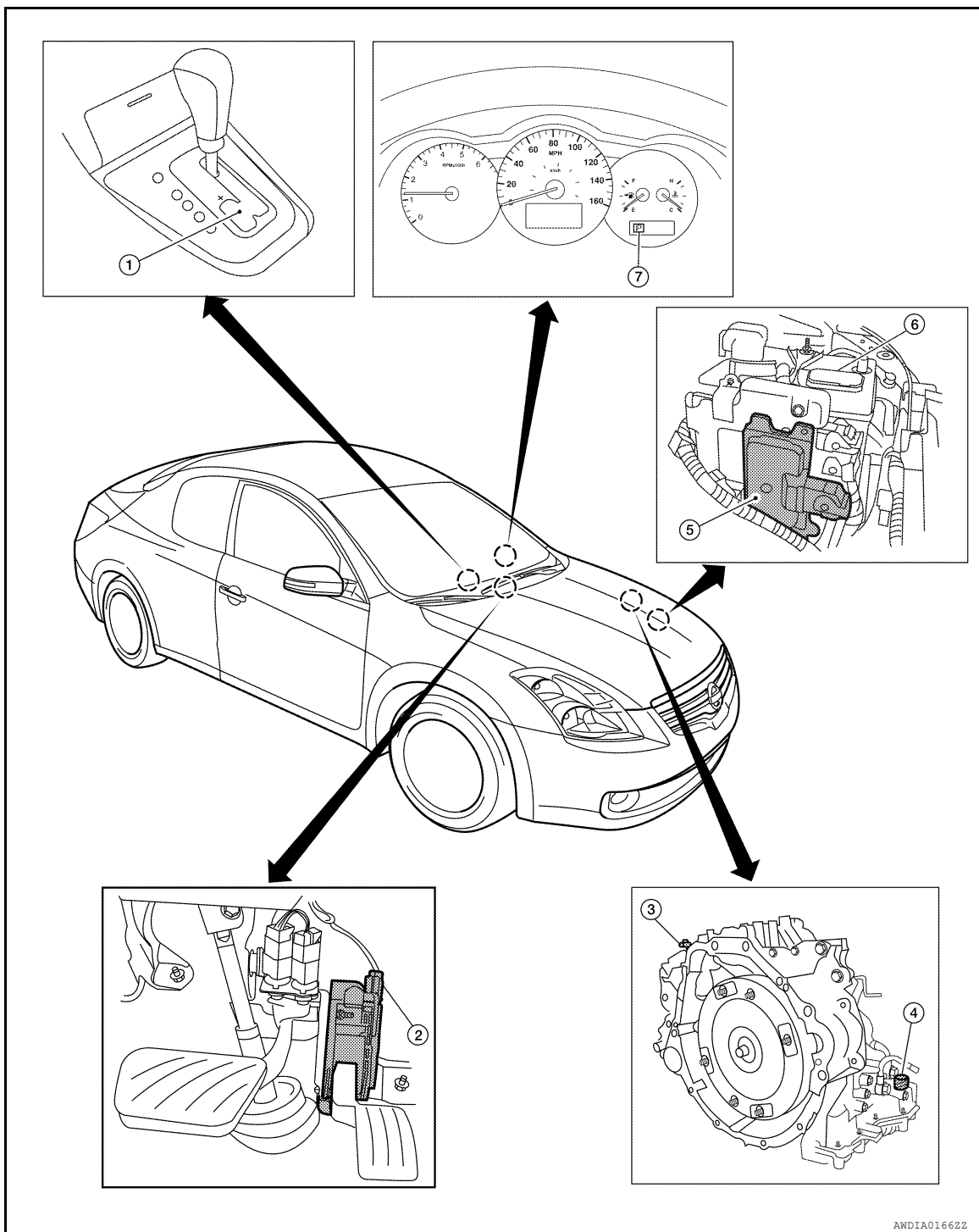
MECHANICAL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Coupe

INFOID:000000006390456



- | | | |
|---|--|---------------------------|
| 1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch) | 2. Accelerator pedal position (APP) sensor | 3. Secondary speed sensor |
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator
Manual mode indicator
DS mode indicator | | |

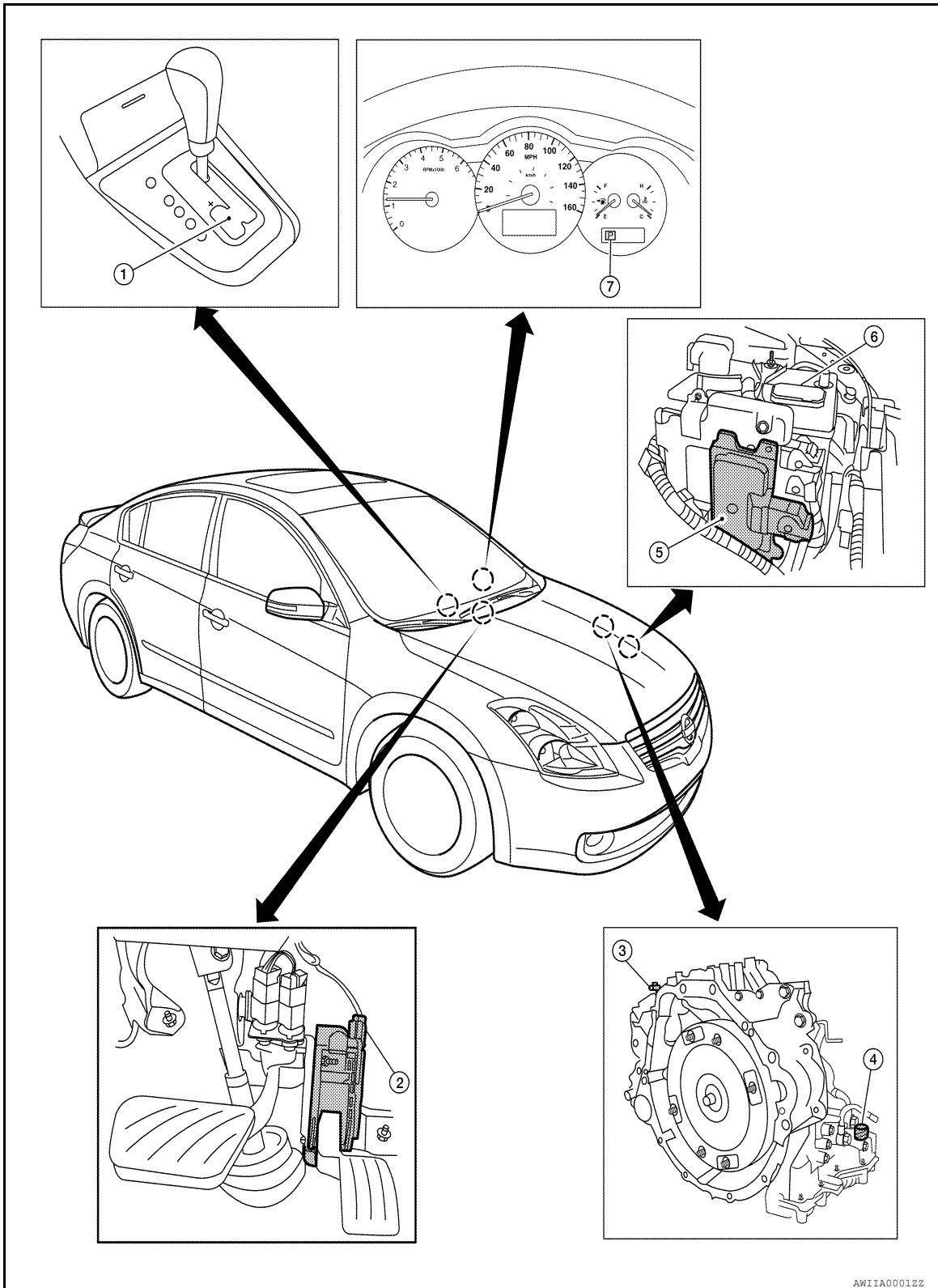
MECHANICAL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Sedan

INFOID:000000006390457



1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch)
2. Accelerator pedal position (APP) sensor
3. Secondary speed sensor

MECHANICAL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

- | | | |
|-------------------------------|--------|------------|
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator | | |
| Manual mode indicator | | |
| DS mode indicator | | |

Component Description

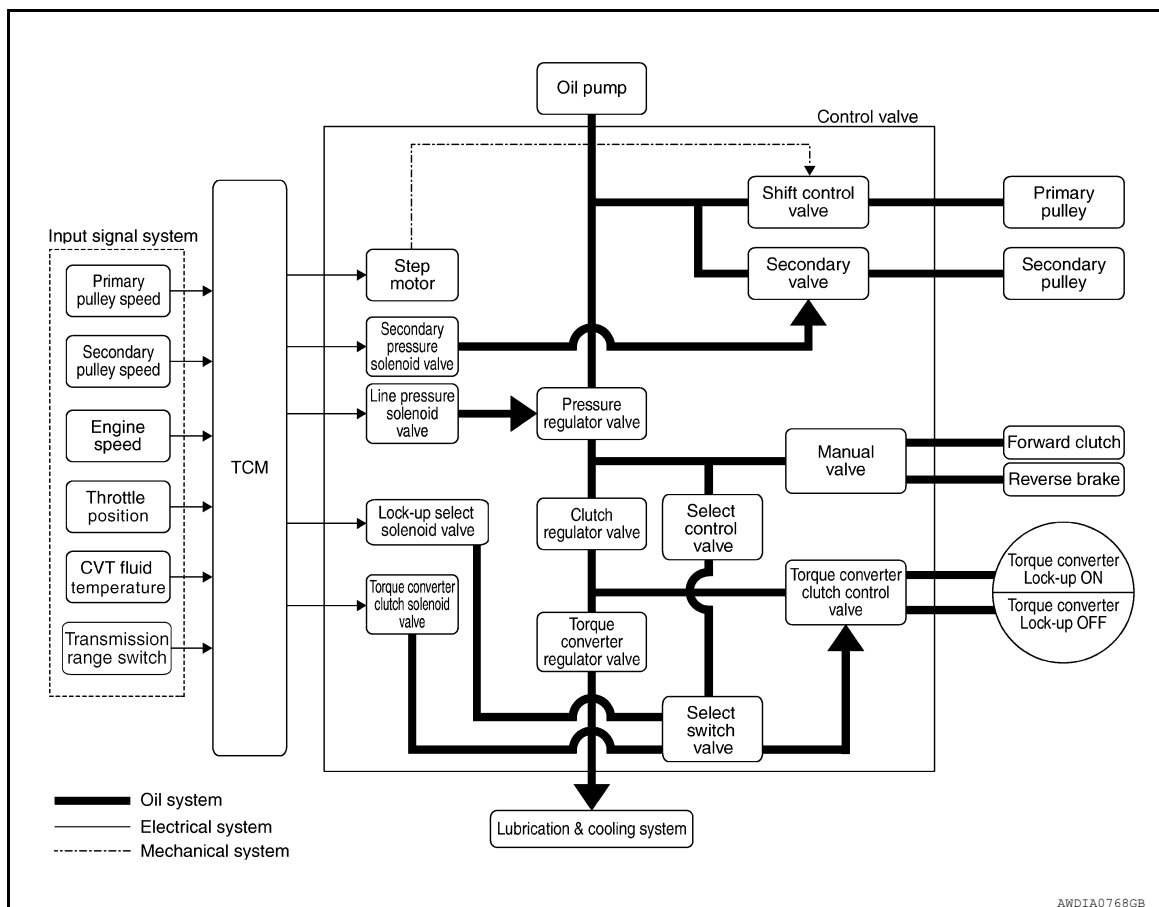
INFOID:000000006390458

Item	Function
Torque converter	The torque converter is the device that increases the engine torque as well as the conventional CVT and transmits it to the transaxle.
Oil pump	It is a parachoid type oil pump with the flow control valve directly controlled by the engine. Discharged oil from oil pump is transmitted to the control valve. It is used as the oil of primary and secondary pulley operation and the oil of clutch operation and the lubricant for each part.
Planetary gear	Perform the transmission of drive power and the switching of forward/backward movement.
Forward clutch	
Reverse brake	
Primary pulley	It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the steel belt (the steel star wheels are placed continuously and the belt is guided with the multilayer steel rings on both sides). The groove width changes according to wrapping radius of steel belt and pulley from low status to over-drive status continuously with non-step. It is controlled with the oil pressures of primary pulley and secondary pulley.
Secondary pulley	
Steel belt	
Output gear	The drive power from the secondary pulley returns the deceleration gears [primary deceleration (output gear/idler gear pair) and secondary deceleration (reduction gear/final gear pair)]. It is transmitted from differential to drive wheel.
Idler gear	
Reduction gear	
Final gear	
Differential	
Manual shaft	The parking rod rotates the parking pole and the parking pole engages with the parking gear when the manual shaft is in P position. As a result the parking gear and the output axis are fixed.
Parking rod	
Parking pawl	
Parking gear	

[CVT: RE0F09B]

System Diagram

INFOID:0000000006390459



INFOID:0000000006390460

LINE PRESSURE AND SECONDARY PRESSURE CONTROL

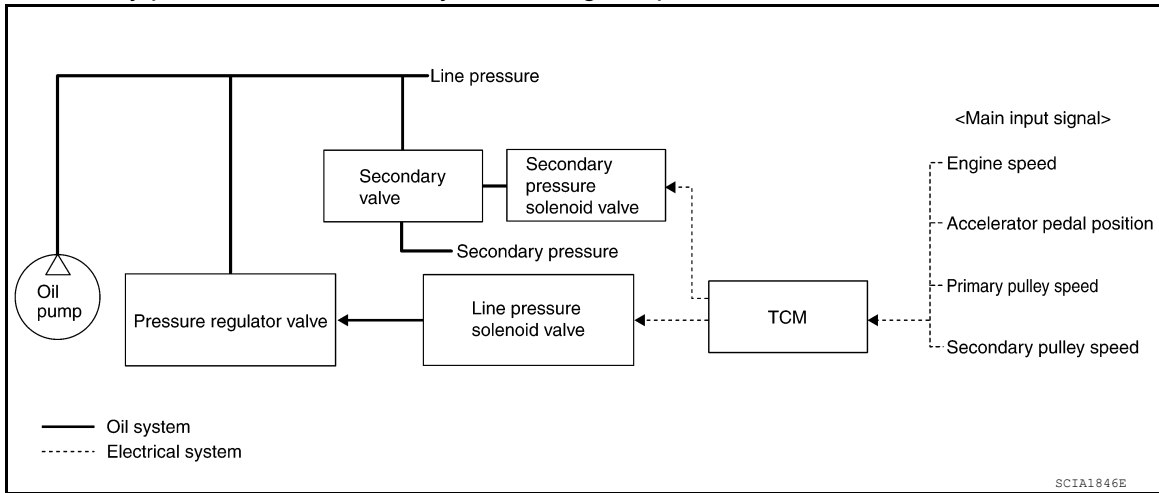
- When an input torque signal equivalent to the engine drive force is sent from the ECM to the TCM, the TCM controls the line pressure solenoid valve and secondary pressure solenoid valve.

HYDRAULIC CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

- This line pressure solenoid controls the pressure regulator valve as the signal pressure and adjusts the pressure of the operating oil discharged from the oil pump to the line pressure most appropriate to the driving state. Secondary pressure is controlled by decreasing line pressure.



Normal Control

Optimize the line pressure and secondary pressure, depending on driving conditions, on the basis of the throttle position, the engine speed, the primary pulley (input) revolution speed, the secondary pulley (output) revolution speed, the brake signal, the transmission range switch signal, the lock-up signal, the voltage, the target gear ratio, the fluid temperature, and the fluid pressure.

Feedback Control

When controlling the normal fluid pressure or the selected fluid pressure, the secondary pressure can be set more accurately by using the fluid pressure sensor to detect the secondary pressure and controlling the feedback.

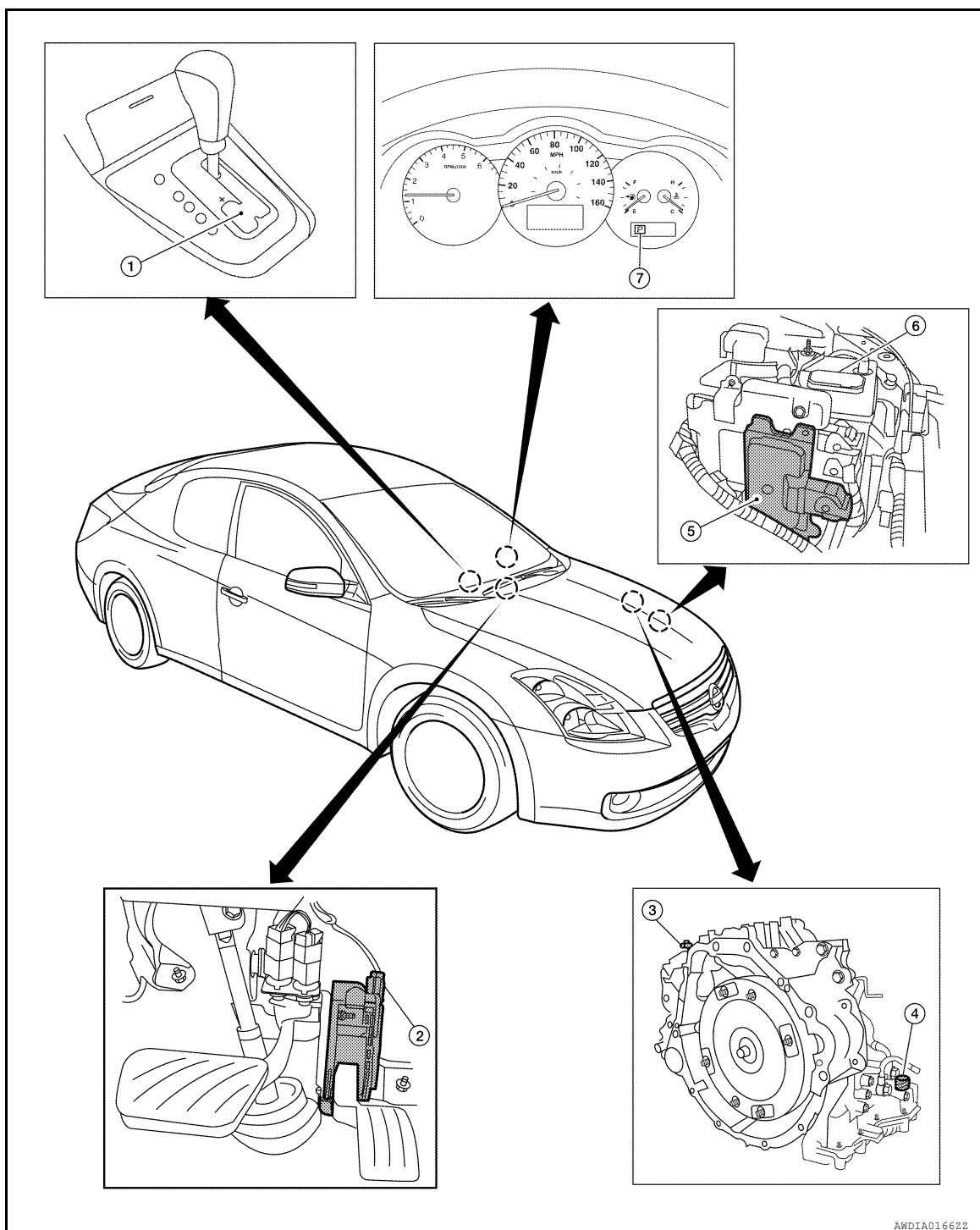
HYDRAULIC CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Coupe

INFOID:000000006390461



- | | | |
|---|--|---------------------------|
| 1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch) | 2. Accelerator pedal position (APP) sensor | 3. Secondary speed sensor |
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator
Manual mode indicator
DS mode indicator | | |

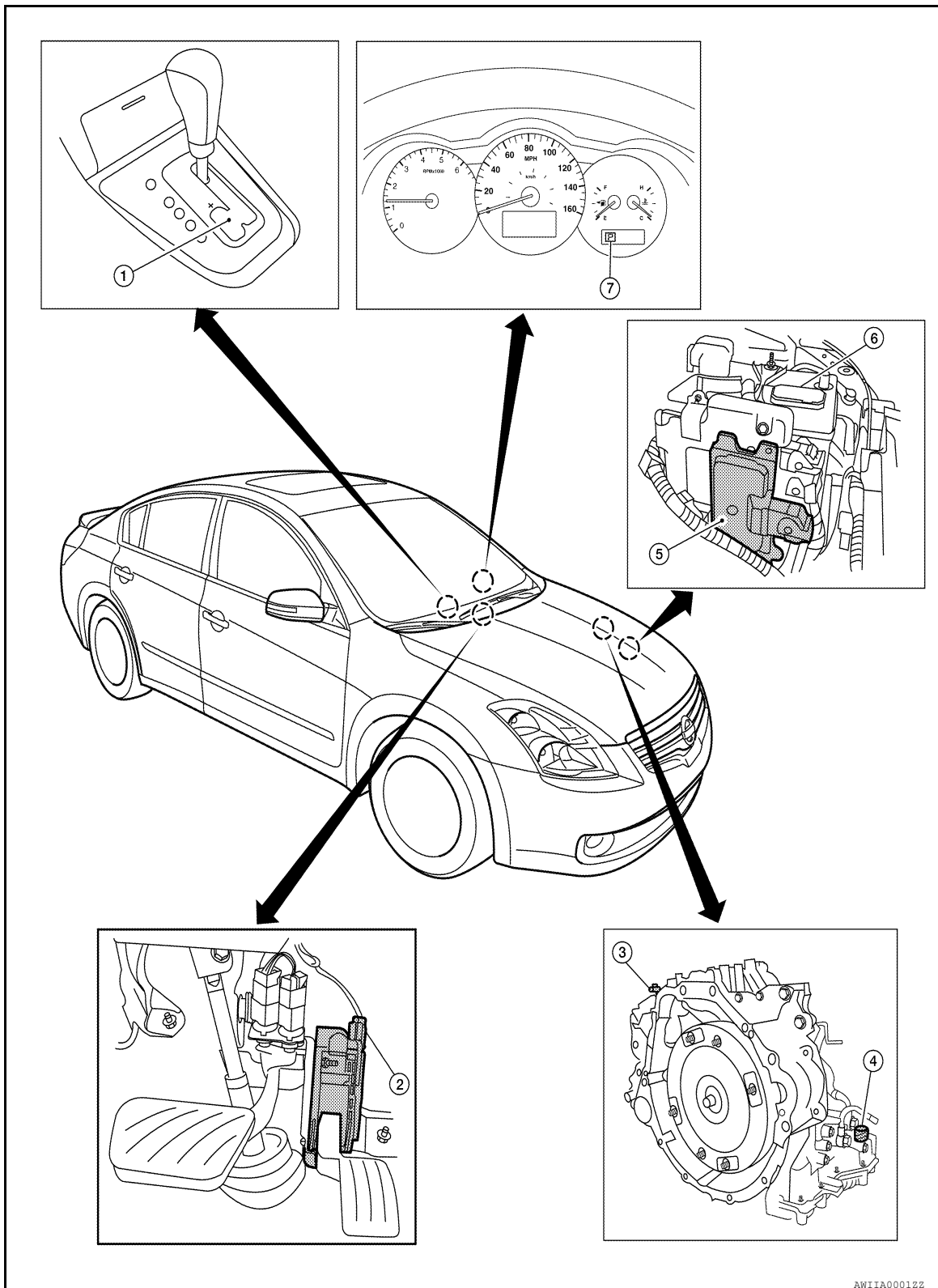
HYDRAULIC CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Sedan

INFOID:000000006390462



1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch)
2. Accelerator pedal position (APP) sensor
3. Secondary speed sensor

HYDRAULIC CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

- | | | |
|-------------------------------|--------|------------|
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator | | |
| Manual mode indicator | | |
| DS mode indicator | | |

Component Description

INFOID:000000006390463

TRANSAXLE ASSEMBLY

Name	Function
Torque converter regulator valve	Optimizes the supply pressure for the torque converter depending on driving conditions.
Pressure regulator valve	Optimizes the discharge pressure from the oil pump depending on driving conditions.
TCC control valve	<ul style="list-style-type: none"> Activates or deactivate the lock-up. Lock-up smoothly by opening lock-up operation excessively.
TCC solenoid valve	TM-150
Shift control valve	Controls flow-in/out of line pressure from the primary pulley depending on the stroke difference between the stepping motor and the primary pulley.
Secondary valve	Controls the line pressure from the secondary pulley depending on operating conditions.
Clutch regulator valve	Adjusts the clutch operating pressure depending on operating conditions.
Secondary pressure solenoid valve	TM-160
Line pressure solenoid valve	TM-154
Step motor	TM-184
Manual valve	Transmits the clutch operating pressure to each circuit in accordance with the selected position.
Select control valve	Engages forward clutch, reverse brake smoothly depending on select operation.
Select switch valve	Switches torque converter clutch solenoid valve control pressure use to torque converter clutch control valve or select control valve.
Lockup select solenoid valve	TM-181
Primary speed sensor	TM-141
Secondary speed sensor	TM-144
transmission range switch	TM-135
Primary pulley	TM-101
Secondary pulley	
Forward clutch	
Torque converter	

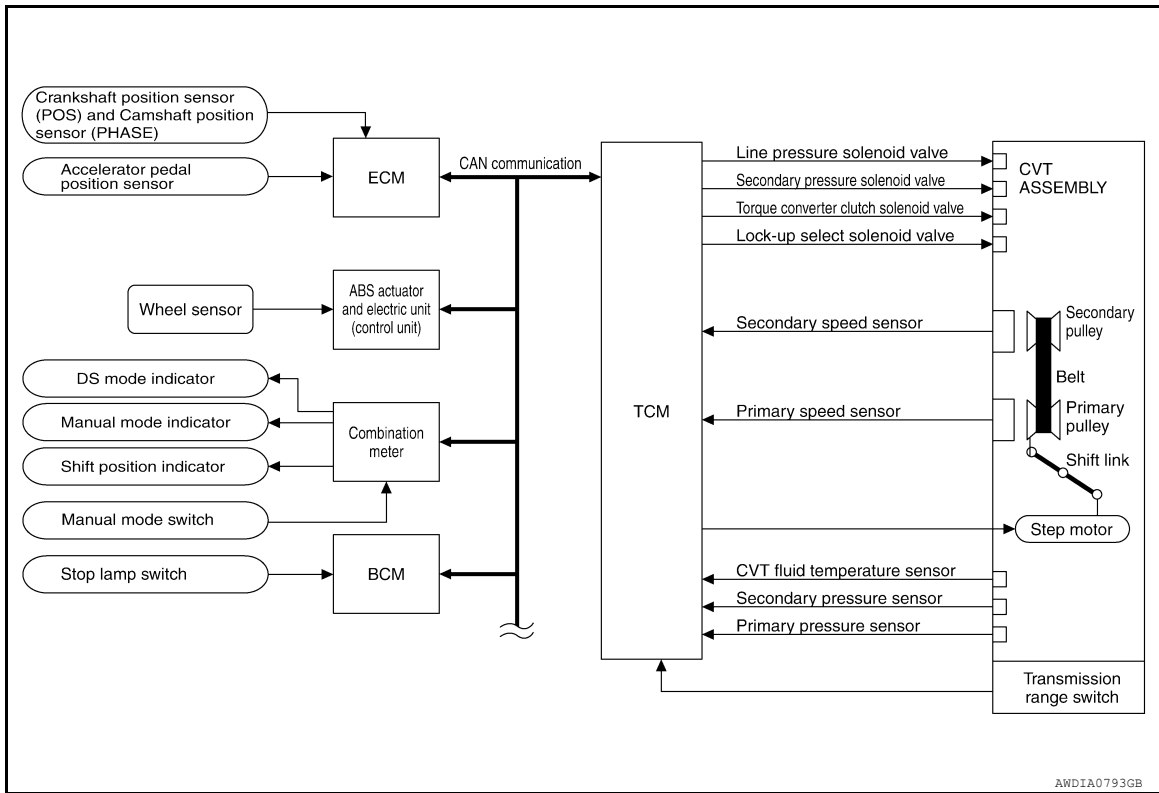
EXCEPT TRANSAXLE ASSEMBLY

Name	Function
TCM	Judges the vehicle driving status according to the signal from each sensor and controls the non-step transmission mechanism properly.
Accelerator pedal position sensor	TM-175

CONTROL SYSTEM

System Diagram

INFOID:000000006390464



System Description

INFOID:000000006390465

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

CONTROL SYSTEM OUTLINE

The function of the TCM is to:

- Receive input signals sent from various switches and sensors.
- Determine required line pressure, shifting point, and lock-up operation.
- Send required output signals to the step motor and the respective solenoids.

SENSORS (or SIGNAL)		TCM		ACTUATORS
Transmission range switch Accelerator pedal position signal Closed throttle position signal Engine speed signal CVT fluid temperature sensor Vehicle speed signal Manual mode signal Stop lamp switch signal Primary speed sensor Secondary speed sensor Secondary pressure sensor	⇒	Shift control Line pressure control Secondary pressure control Lock-up control Engine brake control Vehicle speed control Fail-safe control Self-diagnosis CONSULT-III communication line Duet-EA control CAN system On board diagnosis	⇒	Step motor Torque converter clutch solenoid valve Lock-up select solenoid valve Line pressure solenoid valve Secondary pressure solenoid valve Manual mode indicator Shift position indicator CVT indicator lamp Starter relay DS mode indicator

INPUT/OUTPUT SIGNAL OF TCM

CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Control item		Fluid pressure control	Select control	Shift control	Lock-up control	CAN communication control	Fail-safe function(*2)
Input	Transmission range switch	X	X	X	X	X	X
	Accelerator pedal position signal (*1)	X	X	X	X	X	X
	Closed throttle position signal(*1)	X		X	X	X	
	Engine speed signal(*1)	X	X		X	X	X
	CVT fluid temperature sensor	X	X	X	X		X
	Manual mode signal(*1)	X		X	X	X	X
	Stop lamp switch signal(*1)	X		X	X	X	
	Primary speed sensor	X		X	X	X	X
	Secondary speed sensor	X	X	X	X	X	X
	Secondary pressure sensor	X		X			X
	TCM power supply voltage signal	X	X	X	X	X	X
Output	Step motor			X			X
	TCC solenoid valve		X		X		X
	Lock-up select solenoid valve		X		X		X
	Line pressure solenoid valve	X	X	X			X
	Secondary pressure solenoid valve	X		X			X

*1: Input by CAN communications.

*2: If these input and output signals are different, the TCM triggers the fail-safe function.

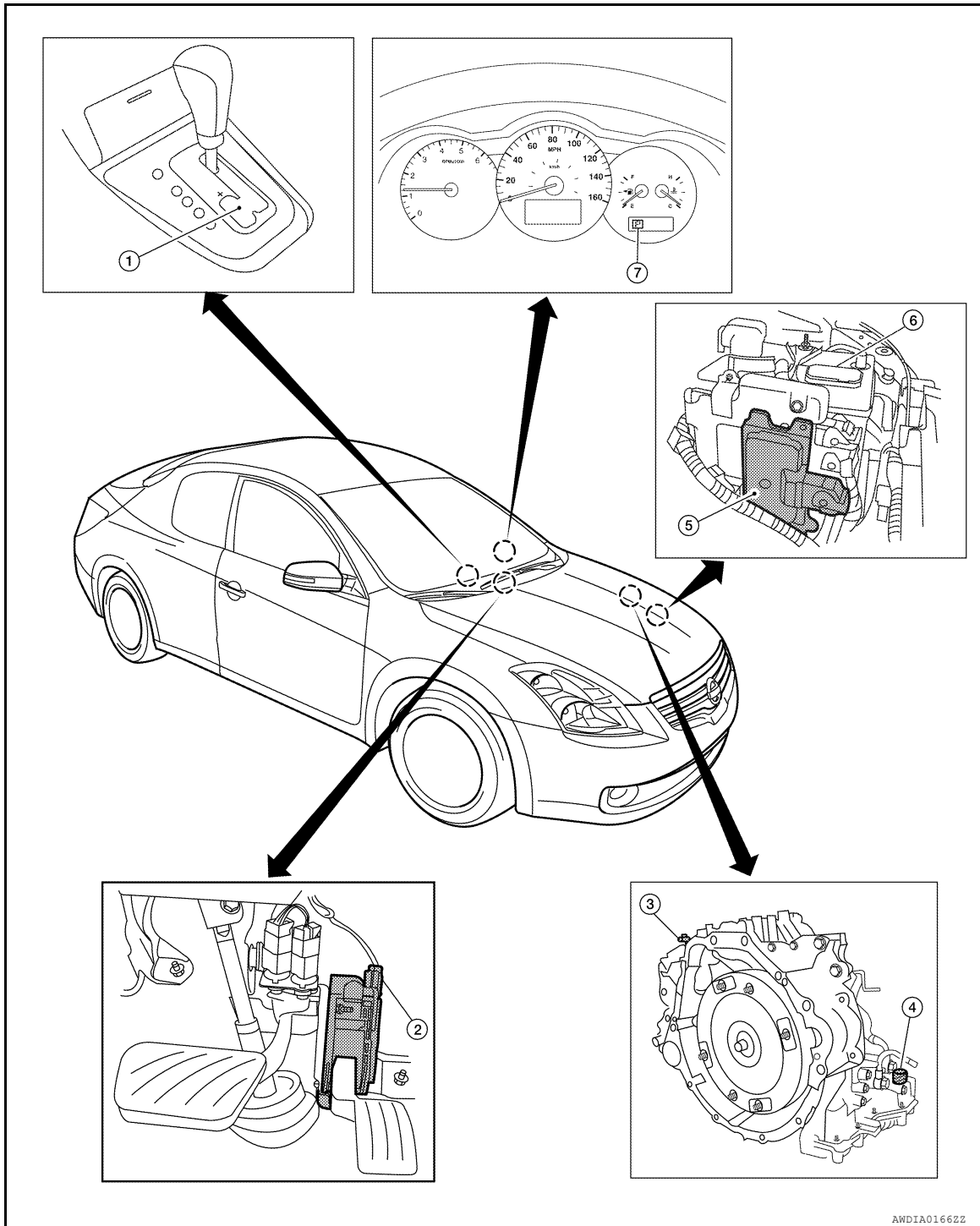
CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Coupe

INFOID:000000006390466



1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch)
2. Accelerator pedal position (APP) sensor
3. Secondary speed sensor
4. CVT unit harness connector
5. TCM
6. Battery
7. Shift position indicator
Manual mode indicator
DS mode indicator

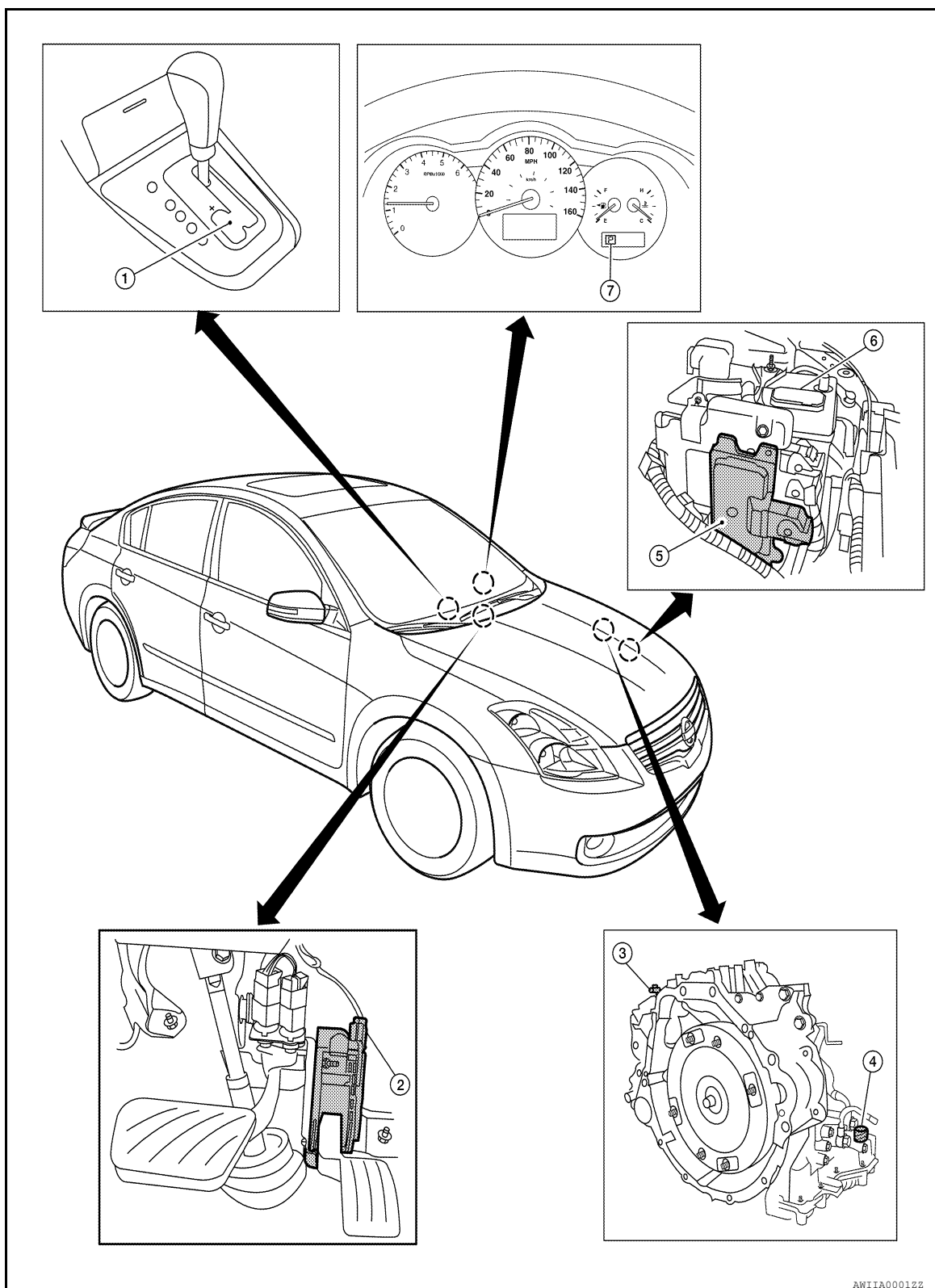
CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Sedan

INFOID:000000006390467



1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch)
2. Accelerator pedal position (APP) sensor
3. Secondary speed sensor

CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

- | | | |
|-------------------------------|--------|------------|
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator | | |
| Manual mode indicator | | |
| DS mode indicator | | |

Component Description

INFOID:0000000006390468

TRANSAXLE ASSEMBLY

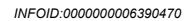
Name	Function
Transmission range switch	TM-135
CVT fluid temperature sensor	TM-138
Primary speed sensor	TM-141
Secondary speed sensor	TM-144
Secondary pressure sensor	TM-165
Step motor	TM-184
TCC solenoid valve	TM-150
Lock-up select solenoid valve	TM-181
Line pressure solenoid valve	TM-154
Secondary pressure solenoid valve	TM-160

EXCEPT TRANSAXLE ASSEMBLY

Name	Function
TCM	Optimally controls continuously variable transmission system by judging driving conditions based on signals from each sensor.
Stop lamp switch	TM-132

[CVT: RE0F09B]

INFOID:0000000006390469



-
- The graph illustrates the throttle opening percentage as a function of vehicle speed for two different transmission types. The y-axis represents 'Throttle opening' from 0% to 100%. The x-axis represents 'Vehicle speed (km/h)' with markers at 50 and 100. The 'CVT' lock-up area is a shaded region that starts at a low throttle opening at 50 km/h and increases to 100% by 100 km/h. The 'A/T' lock-up area is a shaded region that starts at a low throttle opening at 50 km/h and increases to 100% by 100 km/h, but it is positioned lower on the graph than the CVT area, indicating a lower throttle opening for the same speed.

2011 Altima GCC

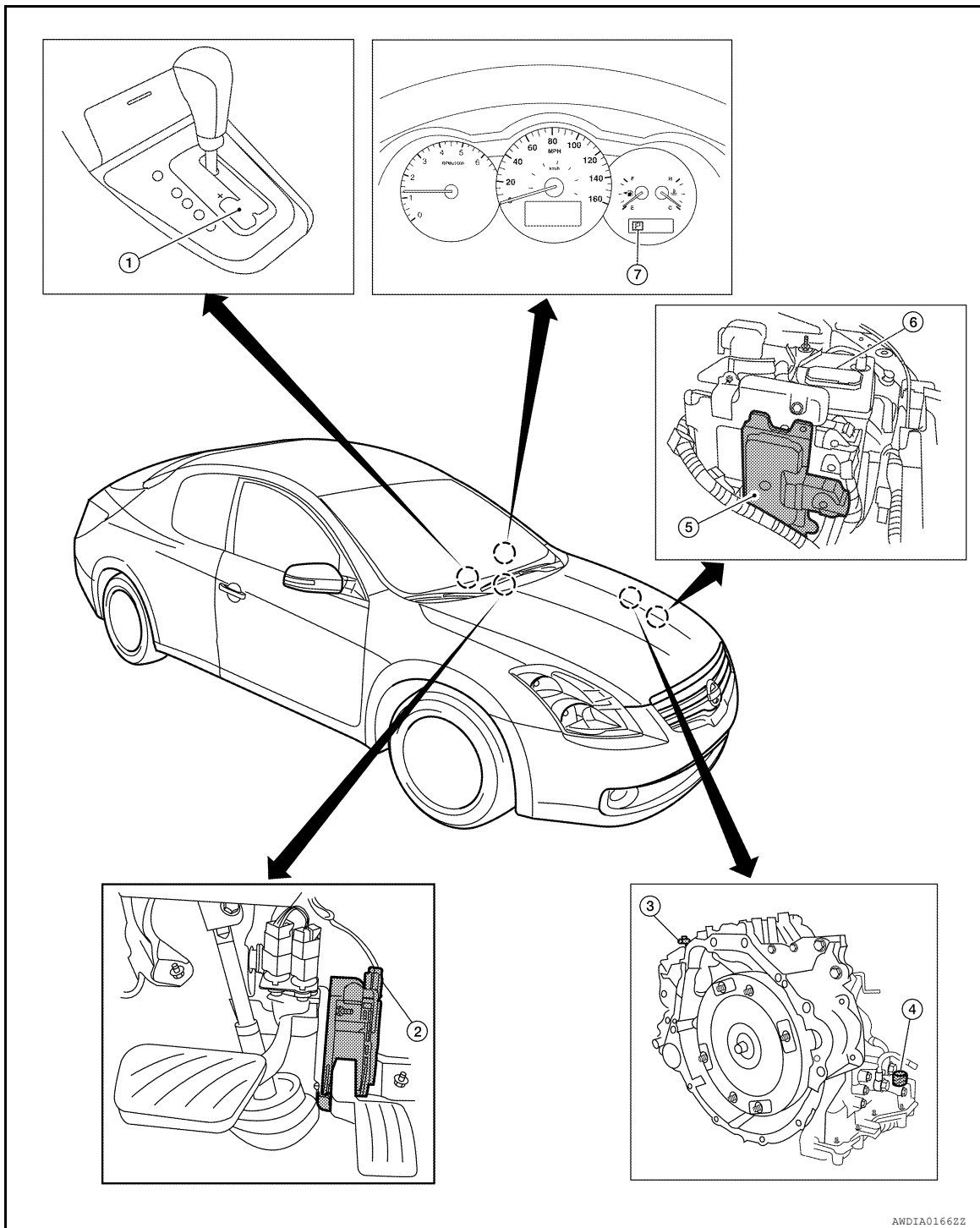
LOCK-UP AND SELECT CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Coupe

INFOID:000000006390471



- | | | |
|---|--|---------------------------|
| 1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch) | 2. Accelerator pedal position (APP) sensor | 3. Secondary speed sensor |
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator
Manual mode indicator
DS mode indicator | | |

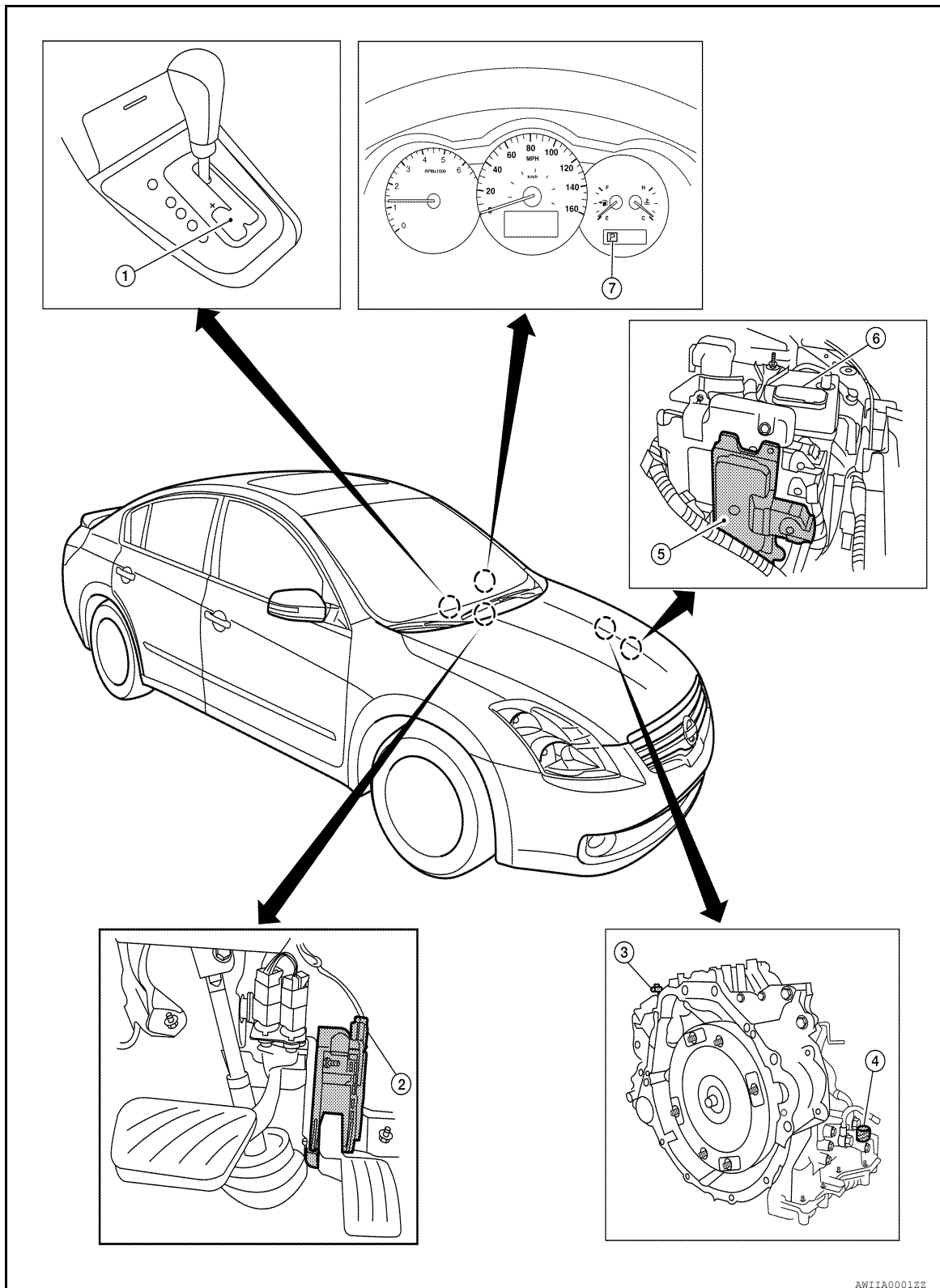
LOCK-UP AND SELECT CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Sedan

INFOID:000000006390472



1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch)
2. Accelerator pedal position (APP) sensor
3. Secondary speed sensor

LOCK-UP AND SELECT CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

- | | | |
|-------------------------------|--------|------------|
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator | | |
| Manual mode indicator | | |
| DS mode indicator | | |

Component Description

INFOID:0000000006390473

TRANSAXLE ASSEMBLY

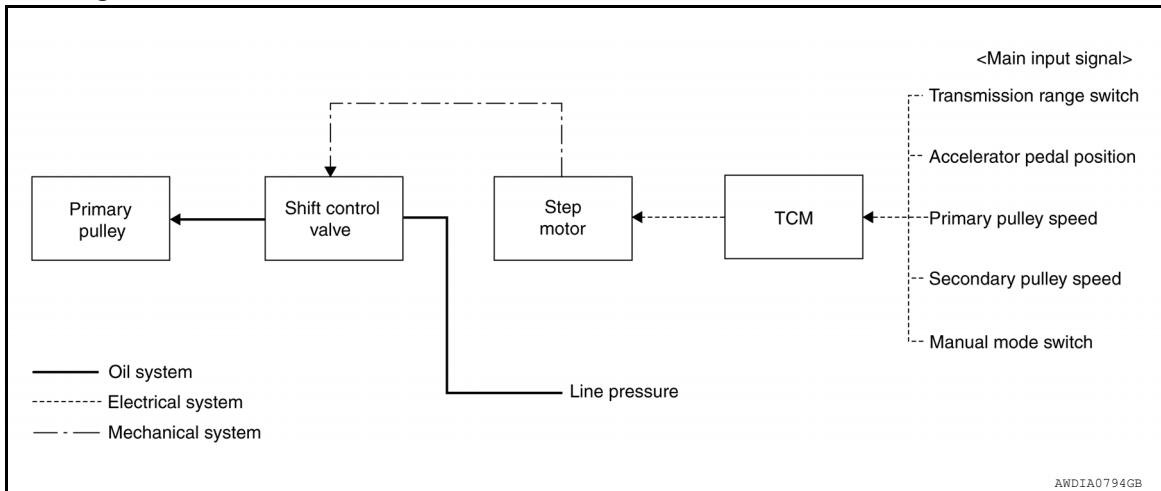
Name	Function
Torque converter regulator valve	TM-106
TCC control valve	
Select control valve	
Select switch valve	
Manual valve	
TCC solenoid valve	TM-150
Lock-up select solenoid valve	TM-181
Primary speed sensor	TM-141
Secondary speed sensor	TM-144
CVT fluid temperature sensor	TM-138
Transmission range switch	TM-135
Forward clutch	TM-106
Reverse brake	
Torque converter	

EXCEPT TRANSAXLE ASSEMBLY

Name	Function
TCM	TM-106
Accelerator pedal position sensor	TM-175

SHIFT MECHANISM

System Diagram



NOTE:

The gear ratio is set for every position separately.

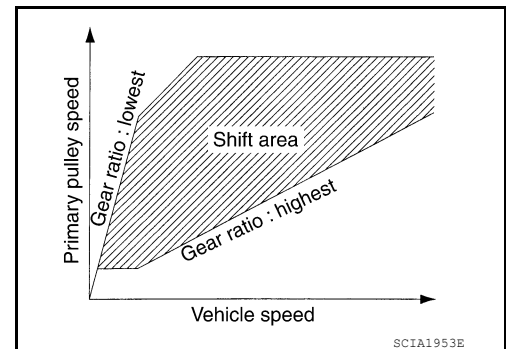
System Description

INFOID:000000006390475

In order to select the gear ratio which can obtain the driving force in accordance with driver's intention and the vehicle condition, TCM monitors the driving conditions, such as the vehicle speed and the throttle position and selects the optimum gear ratio, and determines the gear change steps to the gear ratio. Then send the command to the step motor, and control the flow-in/flow-out of line pressure from the primary pulley to determine the position of the moving-pulley and control the gear ratio.

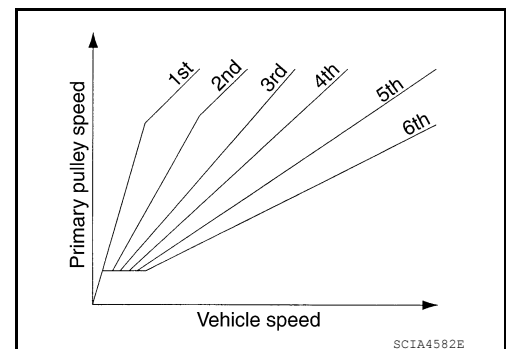
“D” POSITION

Shifting over all the ranges of gear ratios from the lowest to the highest.



“M” POSITION

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.



“DS” POSITION

- When the selector lever is put in the manual shift gate side, the driver can drive more sporty than “D” position.
- “DS” mode can be switched according to the following method.

SHIFT MECHANISM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

- When the selector lever is in the "D" position, shifting the selector lever to manual shift gate enables switching to "DS" mode.
- When in "DS" mode, shifting the selector lever to the main gate enables to cancel "DS" mode.

DOWNHILL ENGINE BRAKE CONTROL (AUTO ENGINE BRAKE CONTROL)

When downhill is detected with the accelerator pedal released, the engine brake will be strengthened up by downshifting so as not to accelerate the vehicle more than necessary.

ACCELERATION CONTROL

According to vehicle speed and a change of accelerator pedal angle, driver's request for acceleration and driving scene are judged. This function assists improvement in acceleration feeling by making the engine speed proportionate to the vehicle speed. And a shift map which can gain a larger driving force is available for compatibility of mileage with driveability.

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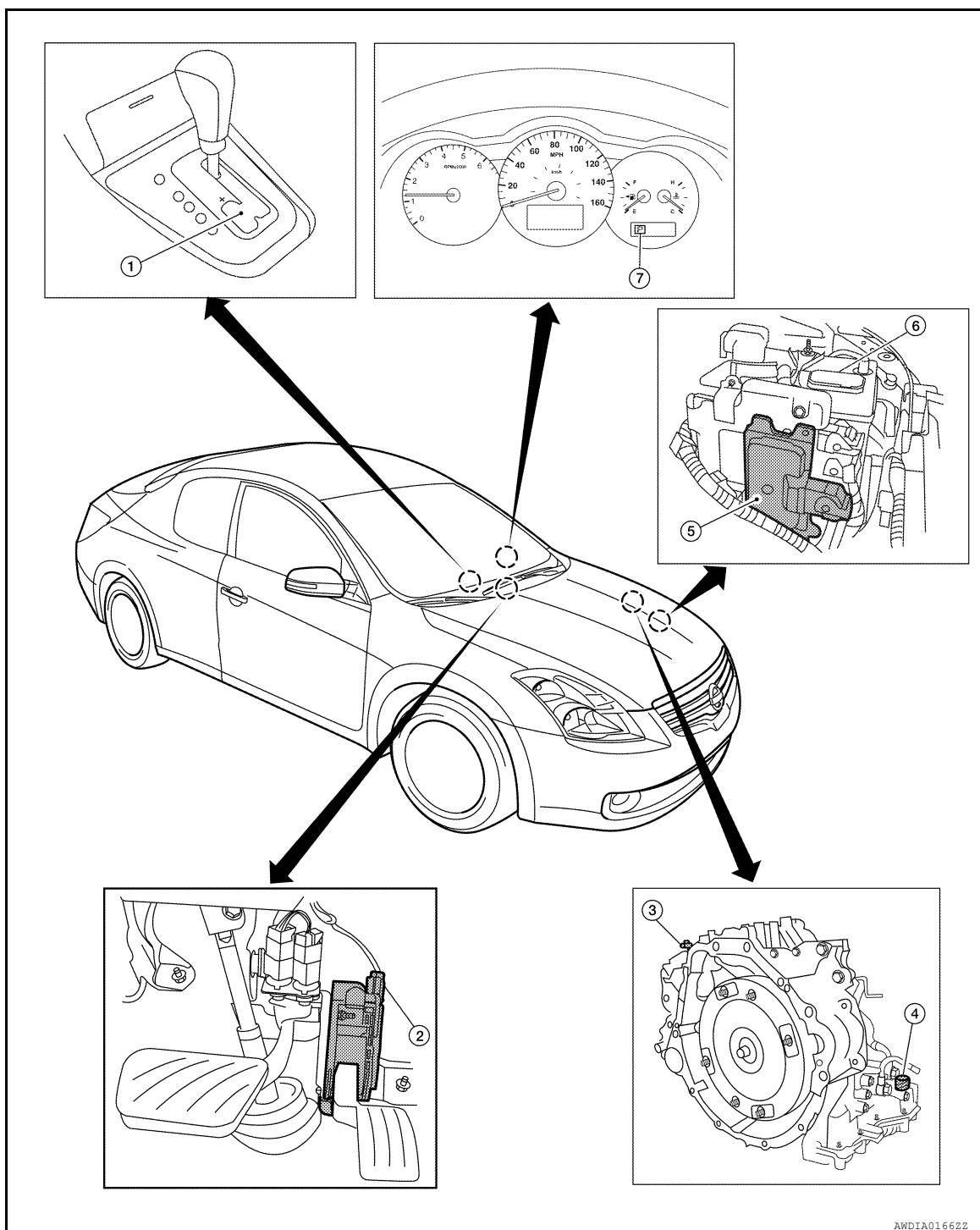
SHIFT MECHANISM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Coupe

INFOID:000000006390476



- | | | |
|---|--|---------------------------|
| 1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch) | 2. Accelerator pedal position (APP) sensor | 3. Secondary speed sensor |
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator
Manual mode indicator
DS mode indicator | | |

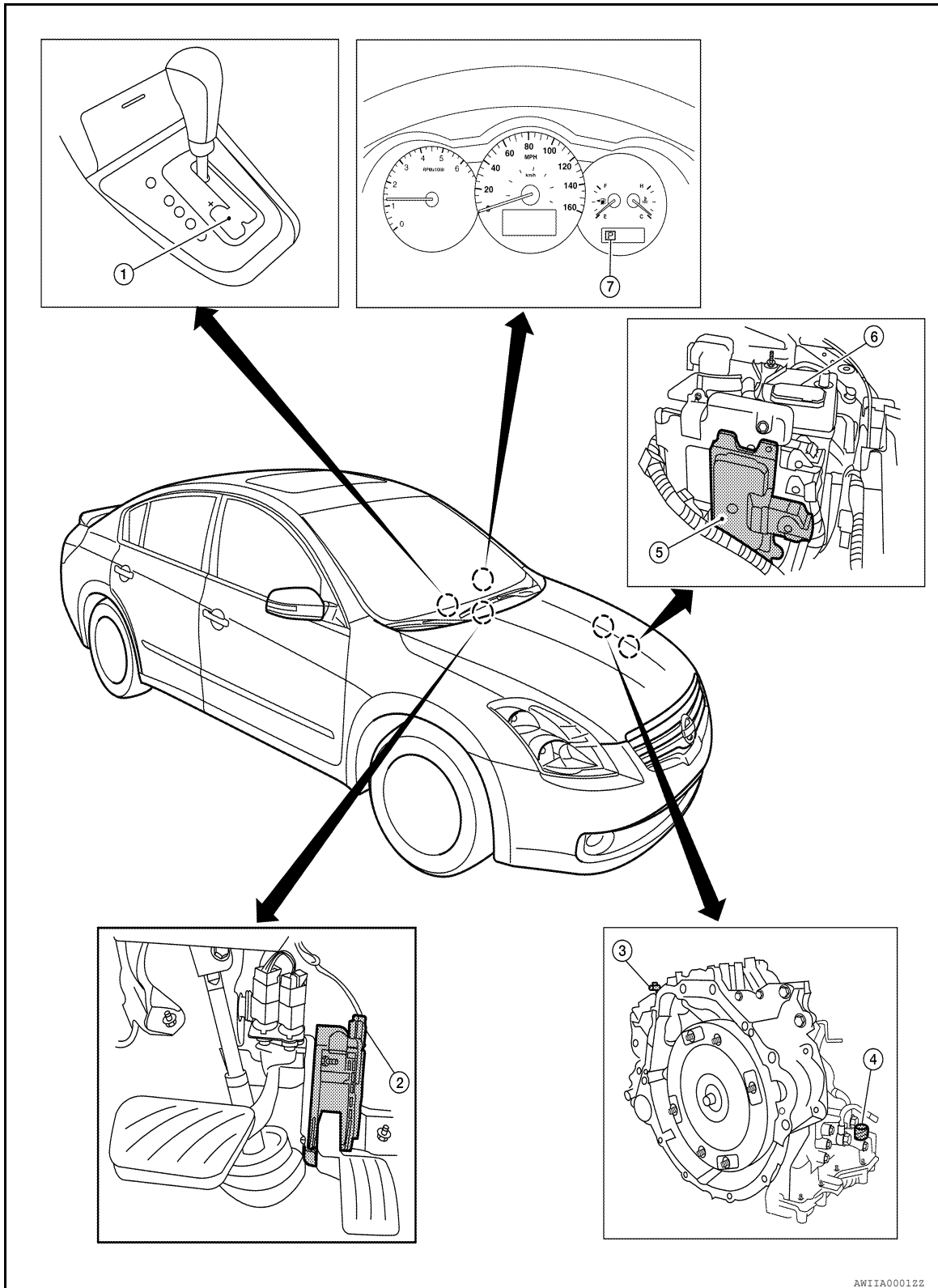
SHIFT MECHANISM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component Parts Location - Sedan

INFOID:000000006390477



1. CVT shift selector assembly (Manual mode select switch and manual mode position select switch)
2. Accelerator pedal position (APP) sensor
3. Secondary speed sensor

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SHIFT MECHANISM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

- | | | |
|-------------------------------|--------|------------|
| 4. CVT unit harness connector | 5. TCM | 6. Battery |
| 7. Shift position indicator | | |
| Manual mode indicator | | |
| DS mode indicator | | |

Component Description

INFOID:0000000006390478

TRANSAXLE ASSEMBLY

Item	Functoin
Transmission range switch	TM-135
Primary speed sensor	TM-141
Secondry speed sensor	TM-144
Step motor	TM-184
Shift control valve	TM-106
Primary pulley	TM-101
Secondary pulley	TM-101

EXCEPT TRANSAXLE ASSEMBLY

Item	Functoin
TCM	TM-106

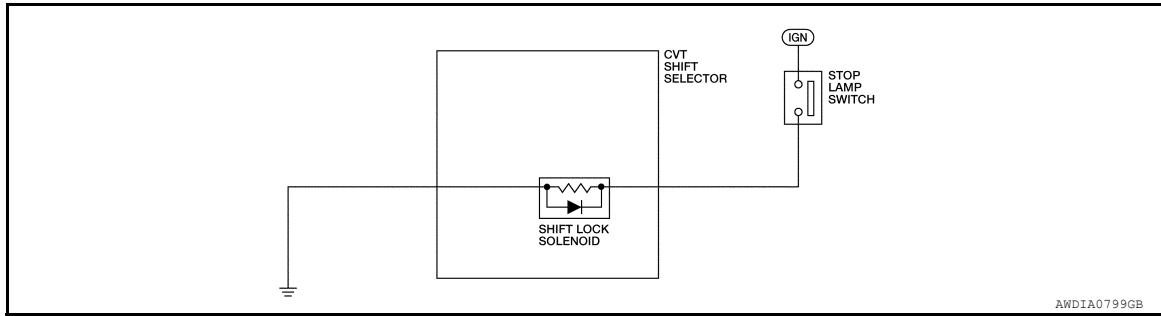
SHIFT LOCK SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

SHIFT LOCK SYSTEM

System Diagram



INFOID:000000006390479

AWDIA0799GB

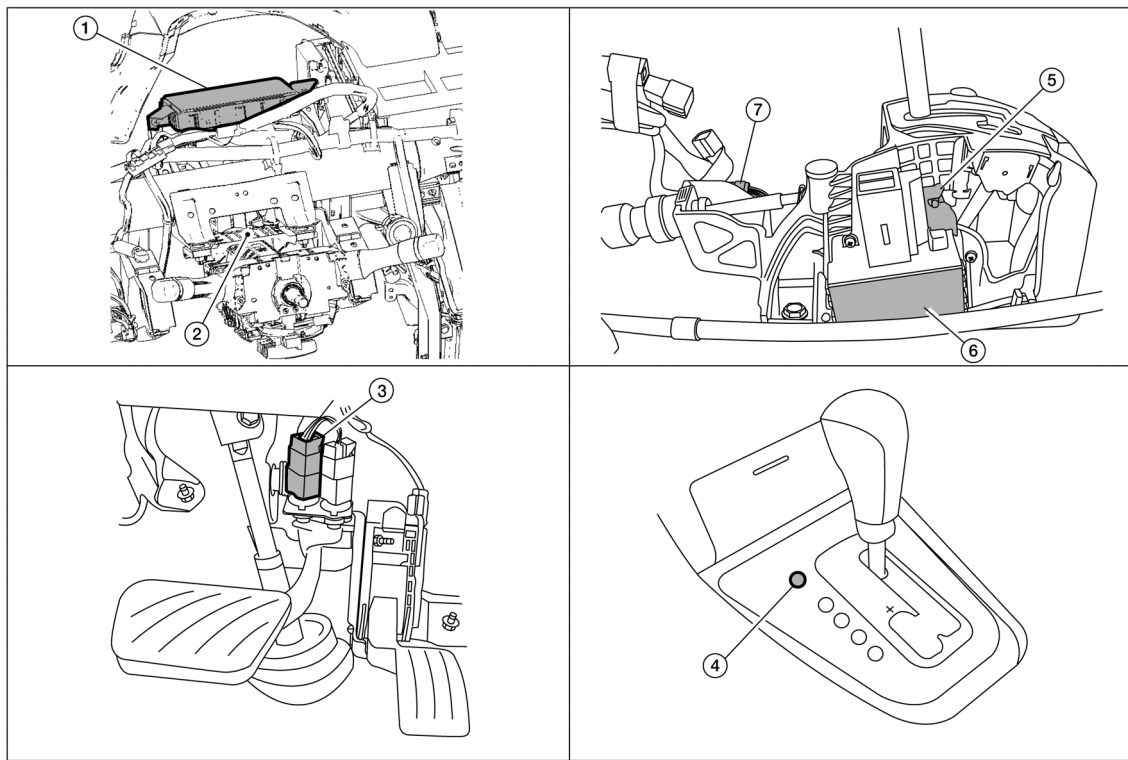
System Description

INFOID:000000006390480

The selector lever cannot be shifted from “P” position to any other position unless the ignition switch is in the ON position and the brake pedal is depressed.

Component Parts Location

INFOID:000000006390481



AWDIA0891ZZ

- | | | |
|--|-------------------------|------------------------|
| 1. BCM (view with instrument panel re-moved) | 2. Steering column | 3. Stop lamp switch |
| 4. Shift lock release button | 5. Park position switch | 6. Shift lock solenoid |
| 7. CVT shift selector connector | | |

Component Description

INFOID:000000006390482

SHIFT LOCK SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Component			Function
CVT shift selector	Shift lock solenoid	Shift lock solenoid	TM-121, "System Description"
		Lock plate	The lock plate restricts the position pin stroke by selector button operation according to the shift lock unit status.
		Position pin	The position pin, linking with the selector button, restricts the selector lever movement.
	Shift lock release button		Pressing the shift lock release button cancels the shift lock forcibly.
Stop lamp switch			TM-132, "Description"

DIAGNOSIS SYSTEM (TCM)

CONSULT-III Function (TRANSMISSION)

INFOID:000000006390483

CONSULT-III can display each diagnostic item using the diagnostic test modes shown below.

FUNCTION

Diagnostic test mode	Function
Work support	This mode enables a technician to adjust some devices faster and more accurately by following the indications on CONSULT-III.
Self-diagnostic results	Self-diagnostic results can be read and erased quickly.
Data monitor	Input/Output data in the TCM can be read.
CAN diagnostic support monitor	The results of transmit/receive diagnosis of CAN communication can be read.
CALIB data	Characteristic information for TCM and CVT assembly can be read. Do not use, but displayed.
Function test	Performed by CONSULT-III instead of a technician to determine whether each system is "OK" or "NG".
ECU part number	TCM part number can be read.

WORK SUPPORT MODE

Display Item List

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

Engine Brake Adjustment

"ENGINE BRAKE LEVEL"

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

OFF :Engine brake level control is deactivated.

CAUTION:

Mode of "+1", "0", "-1", "-2", "OFF" can be selected by pressing the "UP", "DOWN" on CONSULT-III screen. However, do not select mode other than "0" and "OFF". If the "+1" or "-1" or "-2" is selected, that might cause the irregular driveability.

Check CVT Fluid Deterioration Date

"CVTF DETERIORATION DATE"

More than 210000 :It is necessary to change CVT fluid.

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

CAUTION:

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

SELF-DIAGNOSTIC RESULT MODE

After performing self-diagnosis, place check marks for results on the [TM-89. "Diagnostic Work Sheet"](#). Reference pages are provided following the items.

Display Items List

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

X: Applicable —: Not applicable

Items (CONSULT-III screen terms)	Malfunction is detected when...	TCM self-diagnosis	Reference
		"TRANSMISSION" with CONSULT-III	
CAN COMM CIRCUIT	When TCM is not transmitting or receiving CAN communication signal for 2 seconds or more.	U1000	TM-129
STARTER RELAY	If this signal is ON other than in "P" or "N" position, this is judged to be a malfunction. (And if it is OFF in "P" or "N" position, this is judged to be a malfunction too.)	P0615	TM-130
BRAKE SWITCH B	When the brake switch does not switch to ON or OFF.	P0703	TM-132
T/M RANGE SENSOR A	<ul style="list-style-type: none"> Transmission range switch 1-4 signals input with impossible pattern. Transmission range switch 3 monitor terminal open or short circuit. 	P0705	TM-135
FLUID TEMP SENSOR A	During running, the CVT fluid temperature sensor signal voltage is excessively high or low.	P0710	TM-138
INPUT SPEED SENSOR A	<ul style="list-style-type: none"> Primary speed sensor signal is not input due to an open circuit. An unexpected signal is input when vehicle is being driven. 	P0715	TM-141
OUTPUT SPEED SENSOR	<ul style="list-style-type: none"> Signal from secondary speed sensor not input due to open or short circuit. Unexpected signal input during running. 	P0720	TM-144
ENGINE SPEED	TCM does not receive the CAN communication signal from the ECM.	P0725	TM-148
INCORRECT GR RATIO	Unexpected gear ratio detected.	P0730	TM-149
TORQUE CONVERTER	Normal voltage not applied to solenoid due to open or short circuit.	P0740	TM-150
TORQUE CONVERTER	<ul style="list-style-type: none"> CVT cannot perform lock-up even if electrical circuit is good. TCM detects as irregular by comparing difference value with slip rotation. There is a great difference between engine speed and primary speed when TCM lock-up signal is on. 	P0744	TM-152
PC SOLENOID A	<ul style="list-style-type: none"> Normal voltage not applied to solenoid due to open or short circuit. TCM detects as irregular by comparing target value with monitor value. 	P0745	TM-154
PC SOLENOID A	Unexpected gear ratio was detected in the LOW side due to excessively low line pressure.	P0746	TM-156
PC SOLENOID B	Secondary pressure is too high or too low compared with the commanded value while driving.	P0776	TM-158
PC SOLENOID B	<ul style="list-style-type: none"> Normal voltage not applied to solenoid due to cut line, short, or the like. TCM detects as irregular by comparing target value with monitor value. 	P0778	TM-160
UP/DOWN SHIFT SWITCH	When an impossible pattern of switch signals is detected, a malfunction is detected.	P0826	TM-162
FLUID PRESS SEN/SW A	Signal voltage of the secondary pressure sensor is too high or too low while driving.	P0840	TM-165
FLUID PRESS SEN/SW A	Correlation between the values of the secondary pressure sensor is out of specification.	P0841	TM-168
FLUID PRESS LOW	Secondary fluid pressure is too low compared with the commanded value while driving.	P0868	TM-170
TCM	<ul style="list-style-type: none"> When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops. This is not a malfunction message (Whenever shutting OFF a power supply to the TCM, this message appears on the screen). 	P1701	TM-172
TP SENSOR	TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM.	P1705	TM-175

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Items (CONSULT-III screen terms)	Malfunction is detected when...	TCM self-diagnosis	Reference
		"TRANSMISSION" with CONSULT-III	
VEHICLE SPEED	<ul style="list-style-type: none"> CAN communication with the ABS actuator and the electric unit (control unit) is malfunctioning. There is a great difference between the vehicle speed signal from the ABS actuator and the electric unit (control unit), and the vehicle speed sensor signal. 	P1722	TM-176
SPEED SENSOR	<p>A rotation sensor error is detected because the gear does not change in accordance with the position of the stepping motor.</p> <p>CAUTION: One of the "P0720", the "P0715" or the "P0725" is displayed with the DTC at the same time.</p>	P1723	TM-178
THROTTLE CONTROL SIG	The electronically controlled throttle for ECM is malfunctioning.	P1726	TM-180
SLCT SOLENOID	<ul style="list-style-type: none"> Normal voltage not applied to solenoid due to cut line, short, or the like. TCM detects as irregular by comparing target value with monitor value. 	P1740	TM-181
LINE PRESS CONTROL	TCM detects the unexpected line pressure.	P1745	TM-183
STEP MOTOR	Each coil of the step motor is not energized properly due to an open or a short.	P1777	TM-184
STEP MOTOR	There is a great difference between the number of steps for the stepping motor and for the actual gear ratio.	P1778	TM-187
NO DTC IS DETECTED: FURTHER TESTING MAY BE REQUIRED	No NG item has been detected.	X	—

DATA MONITOR MODE

Display Items List

X: Standard, —: Not applicable, ▼: Option

Monitored item (Unit)	Monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
VSP SENSOR (km/h or mph)	X	—	▼	Secondary speed sensor
ESTM VSP SIG (km/h or mph)	X	—	▼	—
PRI SPEED SEN (rpm)	X	—	▼	—
ENG SPEED SIG (rpm)	X	—	▼	—
SEC HYDR SEN (V)	X	—	▼	—
PRI HYDR SEN (V)	X	—	▼	—
ATF TEMP SEN (V)	X	—	▼	CVT fluid temperature sensor
VIGN SEN (V)	X	—	▼	—
VEHICLE SPEED (km/h or mph)	—	X	▼	Vehicle speed recognized by the TCM.
PRI SPEED (rpm)	—	X	▼	Primary pulley speed
SEC SPEED (rpm)	—	—	▼	Secondary pulley speed
ENG SPEED (rpm)	—	X	▼	—

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Monitored item (Unit)	Monitor item selection			Remarks
	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	SELEC- TION FROM MENU	
SLIP REV (rpm)	—	X	▼	Difference between engine speed and primary pulley speed.
GEAR RATIO	—	X	▼	—
G SPEED (G)	—	—	▼	—
ACC PEDAL OPEN (0.0/8)	X	X	▼	<ul style="list-style-type: none"> Degree of opening for accelerator recognized by the TCM. For fail-safe operation, the specific value used for control is displayed.
TRQ RTO	—	—	▼	—
SEC PRESS (MPa)	—	X	▼	—
PRI PRESS (MPa)	—	X	▼	—
ATF TEMP	—	X	▼	—
DSR REV (rpm)	—	—	▼	—
DGEAR RATIO	—	—	▼	—
DSTM STEP (step)	—	—	▼	—
STM STEP (step)	—	X	▼	—
LU PRS (MPa)	—	—	▼	—
LINE PRS (MPa)	—	—	▼	—
TGT SEC PRESS (MPa)	—	—	▼	—
ISOLT1 (A)	—	X	▼	Torque converter clutch solenoid valve output current
ISOLT2 (A)	—	X	▼	Line pressure solenoid valve output current
ISOLT3 (A)	—	X	▼	Secondary pressure solenoid valve output current
SOLMON1 (A)	X	X	▼	Torque converter clutch solenoid valve monitor current
SOLMON2 (A)	X	X	▼	Line pressure solenoid valve monitor current
SOLMON3 (A)	X	X	▼	Secondary pressure solenoid valve monitor current
RANGE SW3M (ON/OFF)	X	—	▼	Transmission range switch 3 ON-OFF status monitor
RANGE SW4 (ON/OFF)	X	—	▼	Transmission range switch 4 ON-OFF status
RANGE SW3 (ON/OFF)	X	—	▼	Transmission range switch 3 ON-OFF status
RANGE SW2 (ON/OFF)	X	—	▼	Transmission range switch 2 ON-OFF status
RANGE SW1 (ON/OFF)	X	—	▼	Transmission range switch 1 ON-OFF status
BRAKE SW (ON/OFF)	X	X	▼	Stop lamp switch (Signal input with CAN communications)
FULL SW (ON/OFF)	X	X	▼	Not mounted but displayed.
IDLE SW (ON/OFF)	X	X	▼	Signal input with CAN communications

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Monitored item (Unit)	Monitor item selection			Remarks
	ECU IN-PUT SIG-NALS	MAIN SIG-NALS	SELEC-TION FROM MENU	
SPORT MODE SW (ON/OFF)	X	X	▼	Not mounted but displayed.
STRDWNSW (ON/OFF)	X	—	▼	
STRUPSW (ON/OFF)	X	—	▼	
DOWNLVR (ON/OFF)	X	—	▼	—
UPLVR (ON/OFF)	X	—	▼	—
NONMMODE (ON/OFF)	X	—	▼	—
MMODE (ON/OFF)	X	—	▼	—
INDLRNG (ON/OFF)	—	—	▼	Not mounted but displayed.
INDDRNG (ON/OFF)	—	—	▼	“D” position indicator output
INDNRNG (ON/OFF)	—	—	▼	“N” position indicator output
INDRRNG (ON/OFF)	—	—	▼	“R” position indicator output
INDPRNG (ON/OFF)	—	—	▼	“P” position indicator output
CVT LAMP (ON/OFF)	—	—	▼	—
SPORT MODE IND (ON/OFF)	—	—	▼	Not mounted but displayed.
MMODE IND (ON/OFF)	—	—	▼	—
SMCOIL D (ON/OFF)	—	—	▼	Step motor coil “D” energizing status
SMCOIL C (ON/OFF)	—	—	▼	Step motor coil “C” energizing status
SMCOIL B (ON/OFF)	—	—	▼	Step motor coil “B” energizing status
SMCOIL A (ON/OFF)	—	—	▼	Step motor coil “A” energizing status
LUSEL SOL OUT (ON/OFF)	—	—	▼	—
REV LAMP (ON/OFF)	—	X	▼	—
STRTR RLY OUT (ON/OFF)	—	—	▼	Starter relay
LUSEL SOL MON (ON/OFF)	—	—	▼	—
STRTR RLY MON (ON/OFF)	—	—	▼	Starter relay
VDC ON (ON/OFF)	X	—	▼	—
TCS ON (ON/OFF)	X	—	▼	—
ABS ON (ON/OFF)	X	—	▼	—
ACC ON (ON/OFF)	X	—	▼	Not mounted but displayed.
RANGE	—	X	▼	<ul style="list-style-type: none"> Indicates position is recognized by TCM. Indicates a specific value required for control when fail-safe function is activated.
M GEAR POS	—	X	▼	—
Voltage (V)	—	—	▼	Displays the value measured by the voltage probe.

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F09B]

Monitored item (Unit)	Monitor item selection			Remarks
	ECU IN- PUT SIG- NALS	MAIN SIG- NALS	SELEC- TION FROM MENU	
Frequency (Hz)	—	—	▼	The value measured by the pulse probe is displayed.
DUTY-HI (high) (%)	—	—	▼	
DUTY-LOW (low) (%)	—	—	▼	
PLS WIDTH-HI (ms)	—	—	▼	
PLS WIDTH-LOW (ms)	—	—	▼	

DTC/CIRCUIT DIAGNOSIS**U1000 CAN COMM CIRCUIT****Description**

INFOID:000000006390484

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

DTC Logic

INFOID:000000006390485

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE**NOTE:**

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

1.CHECK DTC DETECTION**Ⓟ With CONSULT-III**

1. Turn ignition switch ON.
2. Start engine and wait for at least 6 seconds.
3. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "U1000" detected?

- YES >> Go to [TM-129, "Diagnosis Procedure"](#).
 NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390486

1.CHECK CAN COMMUNICATION CIRCUIT**Ⓟ With CONSULT-III**

1. Turn ignition switch ON and start engine.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "U1000" indicated?

- YES >> Go to LAN section. Refer to [LAN-24, "CAN System Specification Chart"](#).
 NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

P0615 STARTER RELAY

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0615 STARTER RELAY

Description

INFOID:000000006390487

- TCM controls starter relay in IPDM E/R.
- TCM switches starter relay ON at "P" or "N" position and allows to crank engine.
- Then it prohibits cranking other than at "P" or "N" position.

DTC Logic

INFOID:000000006390488

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0615	Starter Relay Circuit	If this signal is ON other than in "P" or "N" position, this is judged to be a malfunction. (And if it is OFF in "P" or "N" position, this too is judged to be a malfunction.)	<ul style="list-style-type: none">• Harness or connectors (Starter relay and TCM circuit is open or shorted.)• Starter relay circuit

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

1. Turn ignition switch ON.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0615" detected?

- YES >> Go to [TM-130, "Diagnosis Procedure"](#).
- NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390489

1.CHECK STARTER RELAY SIGNAL

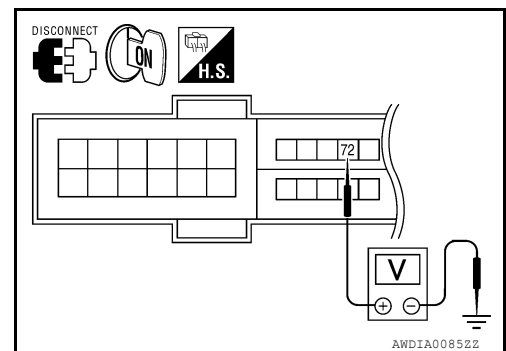
1. Turn ignition switch ON.
2. Disconnect TCM harness connector and IPDM E/R harness connector F10.
3. Check voltage between IPDM E/R harness connector F10 terminal 72 and ground.

IPDM E/R harness connector		Ground	Voltage (Approx.)
Connector	Terminal		
F10	72		Battery voltage

Is the inspection result normal?

- YES >> Check starter relay and starter control relay. Refer to [STR-38, "System Diagram"](#).
- NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND IPDM E/R (PART 1)



P0615 STARTER RELAY

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Check continuity between TCM harness connector F16 (A) terminal 20 and IPDM E/R harness connector F10 (B) terminal 72.

TCM harness connector		IPDM E/R harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	20	F10 (B)	72	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK HARNESS BETWEEN TCM AND IPDM E/R 2 (PART 2)

Check continuity between TCM harness connector F16 terminal 20 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	20		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

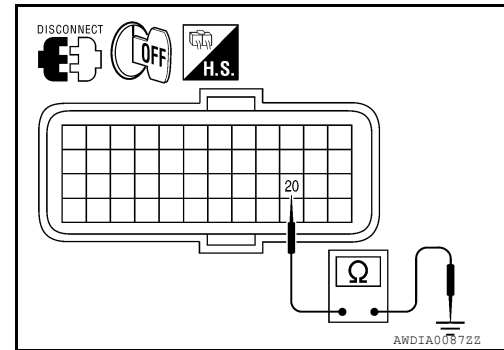
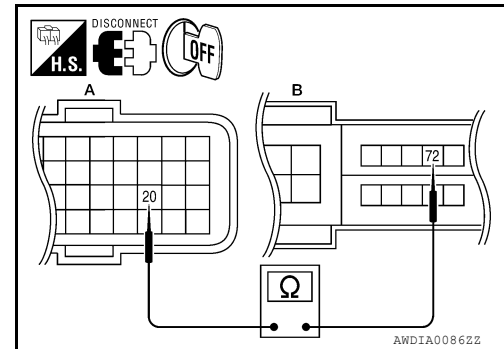
4.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.



P0703 BRAKE SWITCH B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0703 BRAKE SWITCH B

Description

INFOID:000000006390490

BCM detects ON/OFF state of the stop lamp switch and transmits the data to the TCM via CAN communication by converting the data to a signal.

DTC Logic

INFOID:000000006390491

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0703	Brake Switch B Circuit	When the brake switch does not switch to ON or OFF.	<ul style="list-style-type: none">• Harness or connectors- (Stop lamp switch, and BCM circuit are open or shorted.)- (CAN communication line is open or shorted.)• Stop lamp switch

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

Ⓐ With CONSULT-III

1. Turn ignition switch ON.
2. Start engine.
3. Start vehicle for at least 3 consecutive seconds.
4. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0703" detected?

YES >> Go to [TM-132, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

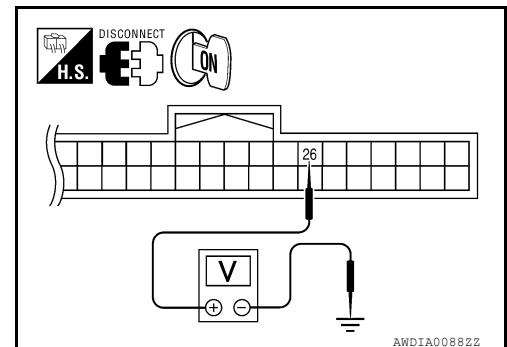
Diagnosis Procedure

INFOID:000000006390492

1.CHECK STOP LAMP SWITCH CIRCUIT

1. Check and adjust the installation position of stop lamp switch. Refer to [BR-13, "Inspection and Adjustment"](#).
2. Disconnect BCM harness connector M18.
3. Check voltage between BCM harness connector M18 terminal 26 and ground.

BCM harness connector		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M18	26		Depressed brake pedal	Battery voltage
			Released brake pedal	0 V



Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND BCM (PART 1)

P0703 BRAKE SWITCH B

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect stop lamp switch harness connector.
2. Check continuity between stop lamp switch harness connector E38 (A) terminal 2 and BCM harness connector M18 (B) terminal 26.

Stop lamp switch harness connector		BCM harness connector		Continuity
Connector	Terminal	Connector	Terminal	
E38 (A)	2	M18 (B)	26	Existed

Is the inspection result normal?

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

3.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND BCM (PART 2)

Check continuity between BCM harness connector M18 terminal 26 and ground.

BCM harness connector		Ground	Continuity
Connector	Terminal		
M18	26		Not existed

Is the inspection result normal?

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

4.CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to [TM-133, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

- YES >> Check the following.
- Harness for short or open between battery and stop lamp switch
 - 10A fuse (No. 7, located in fuse block)
- NO >> Repair or replace stop lamp switch.

5.CHECK BCM

With CONSULT-III

1. Turn ignition switch OFF.
2. Connect BCM connector.
3. Turn ignition switch ON.
4. Select "BRAKE SW 1" in "DATA MONITOR" of "BCM" and verify the proper operation of ON/OFF. Refer to [BCS-41, "Reference Value"](#).

Is the inspection result normal?

- YES >> GO TO 6.
NO >> Replace BCM. Refer to [BCS-92, "Removal and Installation"](#).

6.DETECT MALFUNCTIONING ITEMS

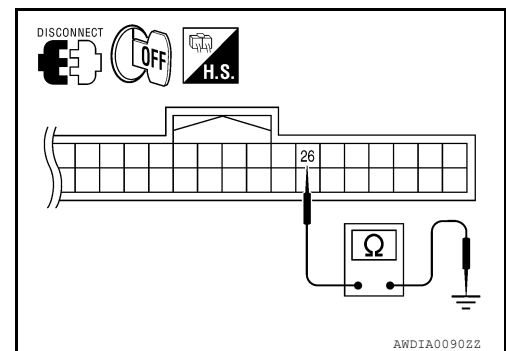
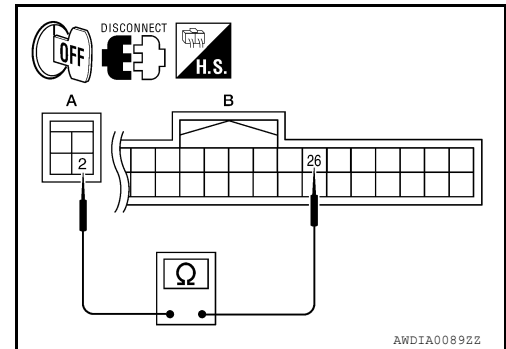
Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

Component Inspection (Stop Lamp Switch)

1.CHECK STOP LAMP SWITCH



INFOID:000000006390493

P0703 BRAKE SWITCH B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

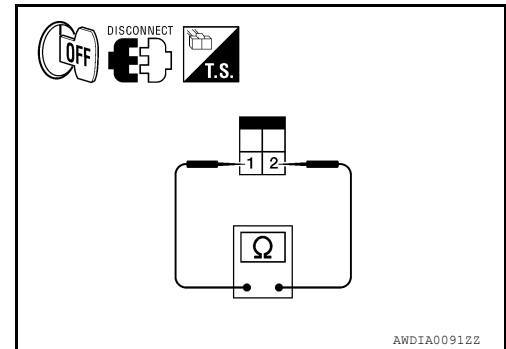
Check continuity between stop lamp switch terminals 1 and 2.

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

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch. Refer to [BR-17. "Exploded View"](#).



P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0705 TRANSMISSION RANGE SWITCH A

Description

INFOID:000000006390494

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

Shift position	transmission range switch 1	transmission range switch 2	transmission range switch 3	transmission range switch 4	transmission range switch 3 (monitor)
P	OFF	OFF	OFF	OFF	OFF
R	ON	OFF	OFF	ON	OFF
N	ON	ON	OFF	OFF	OFF
D	ON	ON	ON	ON	ON

DTC Logic

INFOID:000000006390495

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0705	Transmission Range Sensor A Circuit (PRNDL Input)	TCM does not receive the correct voltage signal (based on the gear position) from the switch.	<ul style="list-style-type: none">• Harness or connectors (Transmission range switches circuit is open or shorted.)• Transmission range switch

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine.
4. Drive vehicle and maintain the following conditions for at least 2 consecutive seconds.

VEHICLE SPEED	More than 10 km/h (6 MPH)
ENG SPEED	: More than 450 rpm
ACC PEDAL OPEN	: More than 1.0/8

Is "P0705" detected?

- YES >> Go to [TM-135, "Diagnosis Procedure"](#).
- NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390496

1.CHECK CVT POSITION

1. Disconnect CVT unit harness connector.
2. Remove control cable from manual lever. Refer to [TM-241, "Exploded View"](#).
3. Check transmission range switch. Refer to [TM-136, "Component Inspection \(Transmission Range Switch\)"](#).

Is the inspection result normal?

- YES >> Adjust CVT position. Refer to [TM-238, "Inspection and Adjustment"](#).
- NO >> GO TO 2.

P0705 TRANSMISSION RANGE SWITCH A

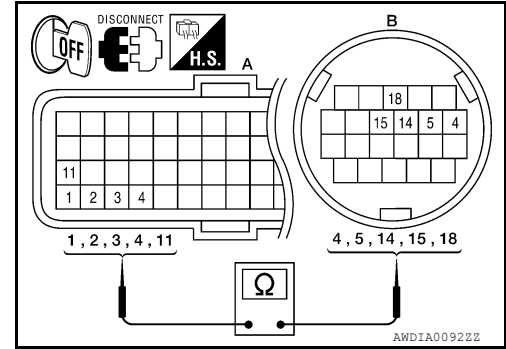
< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

2. CHECK HARNESS BETWEEN TCM AND TRANSMISSION RANGE SWITCH (PART 1)

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check continuity between TCM harness connector F16 (A) terminal 1, 2, 3, 4, 11 and CVT unit harness connector F46 (B) terminal 5, 14, 15, 18, 4.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	1	F46 (B)	5	Existed
	2		14	Existed
	3		15	Existed
	4		18	Existed
	11		4	Existed



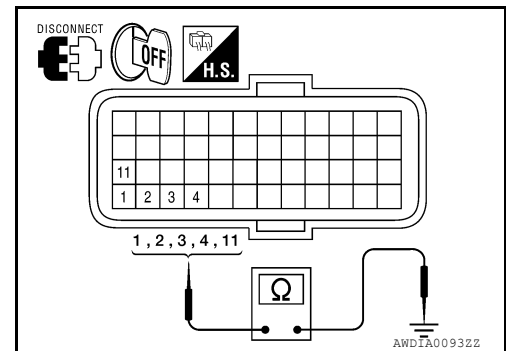
Is the inspection result normal?

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

3. CHECK HARNESS BETWEEN TCM AND TRANSMISSION RANGE SWITCH (PART 2)

Check continuity between TCM harness connector F16 terminal 1, 2, 3, 4, 11 and ground.

TCM harness connector		Continuity
Connector	Terminal	
F16	1	Ground
	2	
	3	
	4	
	11	



Is the inspection result normal?

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

4. DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

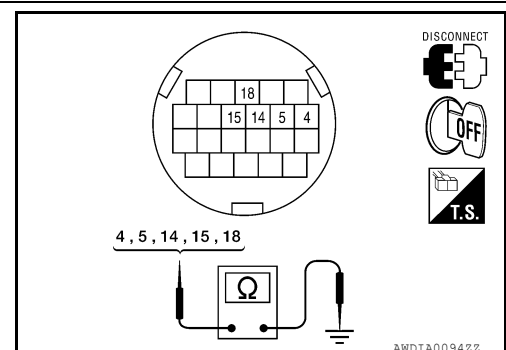
- YES >> Replace the TCM. Refer to [TM-239, "Removal and Installation"](#).
 NO >> Repair or replace damaged parts.

Component Inspection (Transmission Range Switch)

INFOID:000000006390497

1. CHECK TRANSMISSION RANGE SWITCH

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



P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Shift position	CVT unit terminal		Continuity
P	4	Ground	Not existed
	5		
	18		
	14		
	15		
R	4		Existed
	15		
N	4		Existed
	5		
D	4		Existed
	5		
	18		
	14		
	15		
L	5		Existed
	18		
	14		

Is the inspection result normal?

YES >> **INSPECTION END**

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

Description

INFOID:000000006390498

The CVT fluid temperature sensor detects the CVT fluid temperature and sends a signal to the TCM.

DTC Logic

INFOID:000000006390499

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0710	Transmission Fluid Temperature Sensor A Circuit	During running, the CVT fluid temperature sensor signal voltage is excessively high or low.	<ul style="list-style-type: none">• Harness or connectors (Sensor circuit is open or shorted.)• CVT fluid temperature sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION (PART 1)

With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Check that output voltage of CVT fluid temperature sensor is within range specified below.

ATF TEMP SEN : 0.16 – 2.03 V

Is the inspection result normal?

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

NO-1 ("ATF TEMP SEN")>>Refer to [TM-138, "Diagnosis Procedure"](#).

NO-2 ("ATF TEMP SEN")>>GO TO 2.

2.CHECK DTC DETECTION (PART 2)

With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 14 minutes.

RANGE : "D" position

VEHICLE SPEED : 10 km/h (6 MPH) or more

With GST

Follow the procedure "With CONSULT-III".

Is "P0710" detected?

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

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390500

1.CHECK CVT FLUID TEMPERATURE SENSOR CIRCUIT

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check resistance between TCM harness connector F16 terminal 13 and 25.

TCM harness connector			Temperature °C (°F)	Resistance (Approx.)
Connector	Terminal			
F16	13	25	20 (68)	6.5 kΩ
			80 (176)	0.9 kΩ

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

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

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 13, 25 and CVT unit harness connector F46 (B) terminal 17, 19.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	13	F46 (B)	17	Existed
	25		19	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

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

Check continuity between TCM harness connector F16 terminal 13, 25 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	13		Not existed
	25		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK CVT FLUID TEMPERATURE SENSOR

Check CVT fluid temperature sensor. Refer to [TM-140, "Component Inspection \(CVT Fluid Temperature Sensor\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

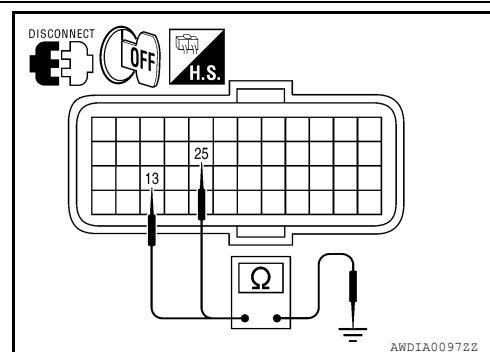
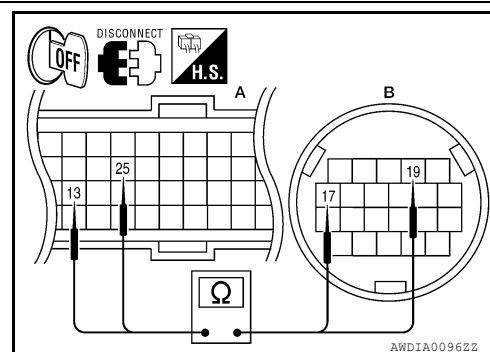
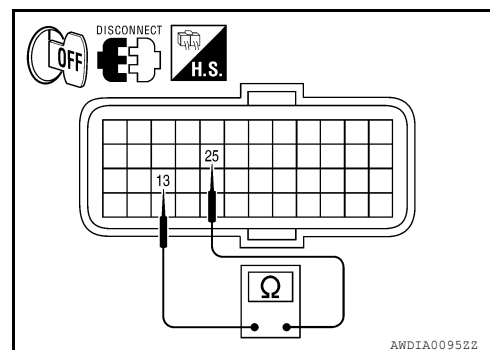
5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.



P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Component Inspection (CVT Fluid Temperature Sensor)

INFOID:000000006390501

1.CHECK CVT FLUID TEMPERATURE SENSOR

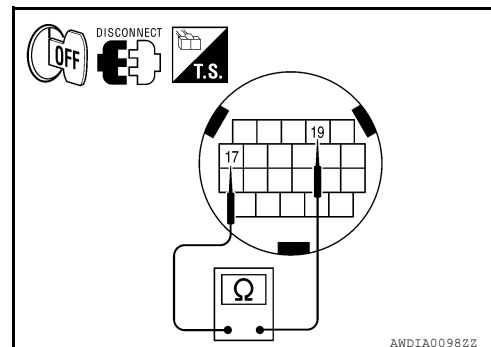
Check resistance between CVT unit terminal 17 and 19.

CVT unit terminal		Temperature °C (°F)	Resistance (Ap- prox.)
17	19	20 (68)	6.5 kΩ
		80 (176)	0.9 kΩ

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247](#).
["Removal and Installation"](#).



P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0715 INPUT SPEED SENSOR A

Description

INFOID:000000006390502

The primary speed sensor detects the primary pulley revolution speed and sends a signal to the TCM.

DTC Logic

INFOID:000000006390503

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0715	Input/Turbine Speed Sensor A Circuit	<ul style="list-style-type: none">Primary speed sensor signal is not input due to an open circuit.An unexpected signal is input when vehicle is being driven.	<ul style="list-style-type: none">Harness or connectors (Sensor circuit is open or shorted.)Primary speed sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

- Turn ignition switch ON.
- Select "DATA MONITOR".
- Start engine and maintain the following conditions for at least 5 consecutive seconds.

VEHICLE SPEED	: 10 km/h (6 MPH) or more
ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
ENG SPEED	: 450 rpm or more
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P0715" detected?

- YES >> Go to [TM-141, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

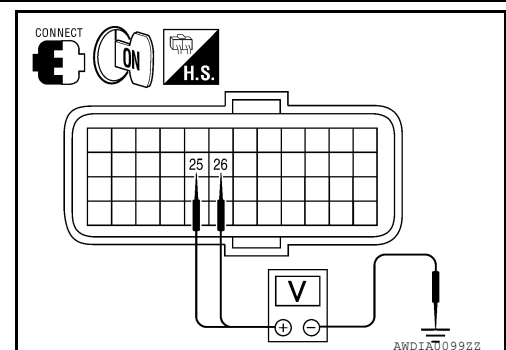
Diagnosis Procedure

INFOID:000000006390504

1.CHECK PRIMARY SPEED SENSOR

- Start engine.
- Check voltage between TCM harness connector F16 terminal 25 and 26.

TCM harness connector			Data (Approx.)
Connector	Terminal		
F16	25	26	5.0 V



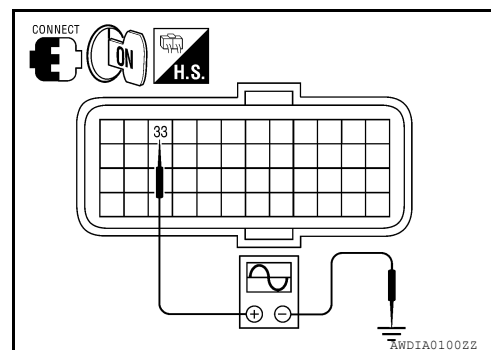
P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

3. If OK, check the pulse when vehicle cruises.

TCM harness connector		Condition	Voltage (Approx.)
Con- nector	Termi- nal		
F16	33	When running at 20 km/h (12 MPH) in "M1" position with the closed throttle position signal OFF, use the CONSULT-III pulse frequency measuring function.	655 Hz



Is the inspection result normal?

OK >> GO TO 7.

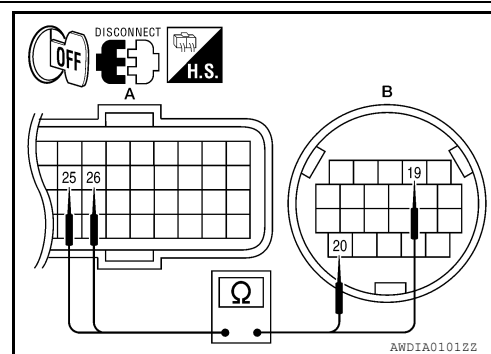
NG - 1 >> Battery voltage is not supplied: GO TO 2.

NG - 2 >> Battery voltage is supplied, but there is a malfunction in the frequency: GO TO 4.

2. CHECK HARNESS BETWEEN TCM AND CVT UNIT HARNESS CONNECTOR (SENSOR POWER AND SENSOR GROUND) (PART 1)

- Turn ignition switch OFF.
- Disconnect TCM harness connector and CVT unit harness connector.
- Check continuity between TCM harness connector F16 (A) terminal 25 and 26 and CVT unit harness connector F46 (B) terminal 19 and 20.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	25	F46 (B)	19	Existed
	26		20	Existed



Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3. CHECK HARNESS BETWEEN TCM AND CVT UNIT HARNESS CONNECTOR (SENSOR POWER AND SENSOR GROUND) (PART 2)

Check continuity between TCM harness connector F16 terminal 25 and 26 and ground.

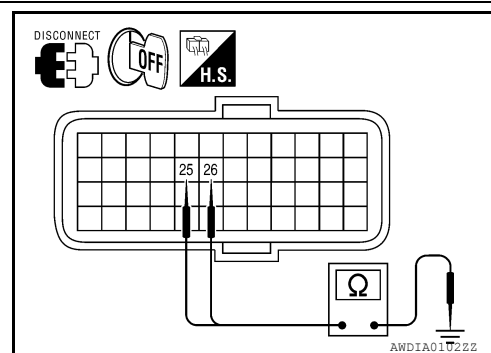
TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	25		Not existed
	26		

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

4. CHECK HARNESS BETWEEN TCM AND CVT UNIT HARNESS CONNECTOR (PRIMARY SPEED SENSOR) (PART 1)



P0715 INPUT SPEED SENSOR A

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector and CVT unit harness connector.
3. Check continuity between TCM harness connector F16 (A) terminal 33 and CVT unit harness connector F46 (B) terminal 22.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	33	F46 (B)	22	Existed

Is the inspection result normal?

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

5. CHECK HARNESS BETWEEN TCM AND CVT UNIT HARNESS CONNECTOR (PRIMARY SPEED SENSOR) (PART 2)

Check continuity between TCM harness connector F16 terminal 33 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	33		Not existed

Is the inspection result normal?

- YES >> GO TO 6.
>> Repair or replace damaged parts.

6. CHECK THE TCM SHORT

Replace same type TCM, perform self-diagnosis check. Erase self-diagnostic results and then drive the vehicle [10 km/h (6 MPH) or more], perform self-diagnosis check. Refer to [TM-141, "DTC Logic"](#).

Is the "P0715" detected again?

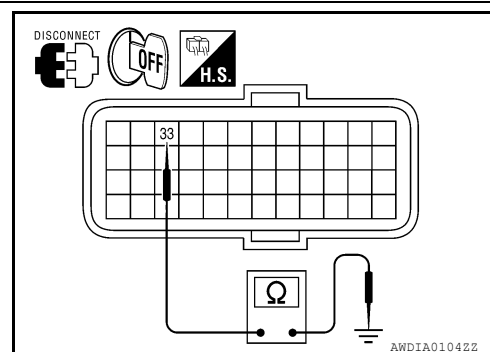
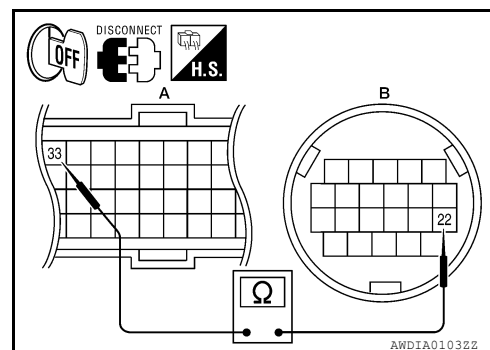
- YES >> GO TO 7.
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

7. DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.



P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0720 OUTPUT SPEED SENSOR

Description

INFOID:000000006390505

The secondary speed sensor detects the revolution of the CVT output shaft and emits a pulse signal. The pulse signal is sent to the TCM, which converts it into vehicle speed.

DTC Logic

INFOID:000000006390506

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0720	Output Speed Sensor Circuit	<ul style="list-style-type: none">Signal from secondary speed sensor not input due to open or short circuit.An unexpected signal input during running	<ul style="list-style-type: none">Harness or connectors (Sensor circuit is open or shorted.)Secondary speed sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

⑧ With CONSULT-III

- Turn ignition switch ON.
- Select "DATA MONITOR".
- Start engine and maintain the following conditions for at least 12 consecutive seconds.

ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P0720" detected?

- YES >> Go to [TM-144, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

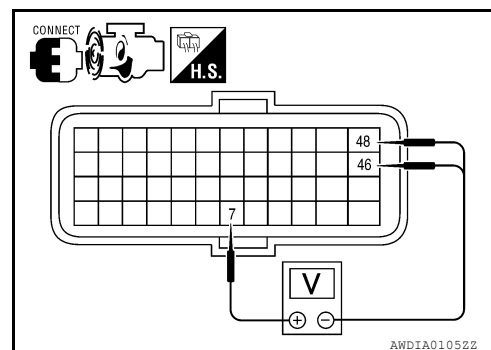
INFOID:000000006390507

1.CHECK SECONDARY SPEED SENSOR

⑧ With CONSULT-III

- Start engine.
- Check voltage between TCM harness connector F16 terminal 7 and 46 and 7 and 48.

TCM harness connector			Voltage (Approx.)
Connector	Terminal		
F16	7	46	Battery voltage
		48	



P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

- If OK, check the pulse when vehicle cruises.

TCM harness connector		Condition	Data (Approx.)
Connector	Terminal		
F16	34	When running at 20 km/h (12 MPH) in "D" position, use the CONSULT-III pulse frequency measuring function.	390 Hz

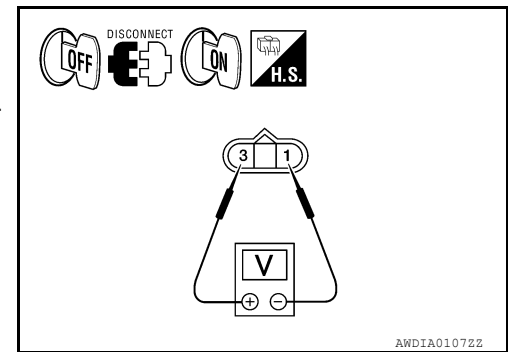
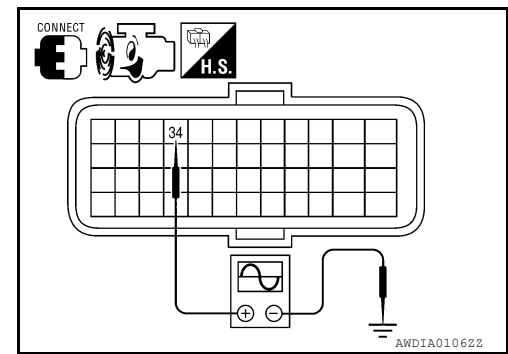
Is the inspection result normal?

- YES >> GO TO 11.
NO >> GO TO 2.

2.CHECK POWER AND SENSOR GROUND

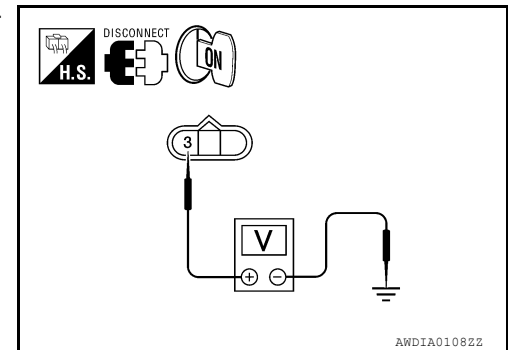
- Turn ignition switch OFF.
- Disconnect secondary speed sensor harness connector.
- Turn ignition switch ON.
- Check voltage between secondary speed sensor harness connector F23 terminal 1 and 3.

Secondary speed sensor harness connector			Voltage (Approx.)
Connector	Terminal		
F23	1	3	Battery voltage



- Check voltage between secondary speed sensor harness connector F23 terminal 3 and ground.

Secondary speed sensor harness connector		Ground	Voltage (Approx.)
Connector	Terminal		
F23	3		Battery voltage



Is the inspection result normal?

- YES >> GO TO 3.
NO-1 >> Battery voltage is not supplied between terminals 1 and 3, terminals 3 and ground: GO TO 6.
NO-2 >> Battery voltage is not supplied between terminals 1 and 3 only: GO TO 8.

3.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (SENSOR GROUND)

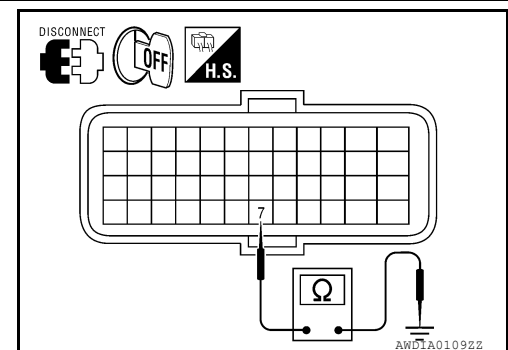
- Turn ignition switch OFF.
- Disconnect TCM harness connector.
- Check continuity between TCM harness connector F16 terminal 7 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	7		Not existed

Is the inspection result normal?

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

4.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (PART 1)



P0720 OUTPUT SPEED SENSOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

Check continuity between TCM harness connector F16 (A) terminal 34 and secondary speed sensor harness connector F23 (B) terminal 2.

TCM harness connector		Secondary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	34	F23 (B)	2	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (PART 2)

Check continuity between TCM harness connector F16 terminal 34 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	34		Not existed

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace damaged parts.

6.CHECK HARNESS BETWEEN IPDM E/R AND SECONDARY SPEED SENSOR (POWER) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector F10.
3. Check continuity between IPDM E/R harness connector F10 (A) terminal 58 and secondary speed sensor harness connector F23 (B) terminal 3.

IPDM E/R harness connector		Secondary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F10 (A)	58	F23 (B)	3	Existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK HARNESS BETWEEN IPDM E/R AND SECONDARY SPEED SENSOR (POWER) (PART 2)

Check continuity between IPDM E/R harness connector F10 terminal 58 and ground.

IPDM E/R harness connector		Ground	Continuity
Connector	Terminal		
F10	58		Not existed

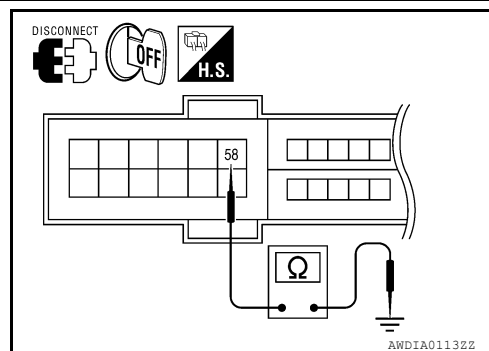
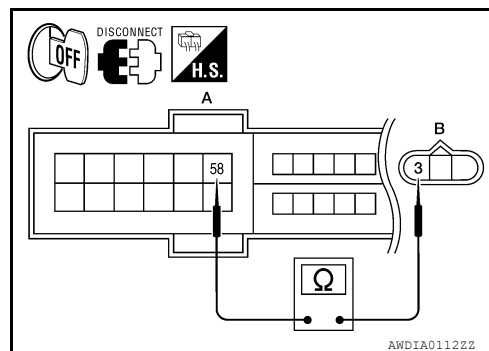
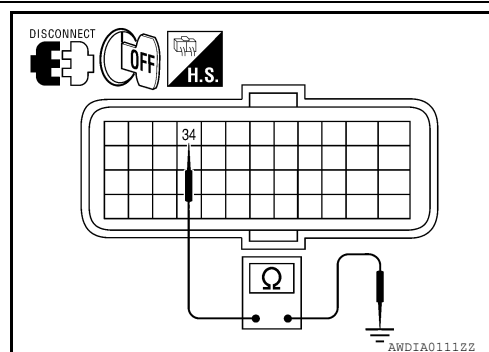
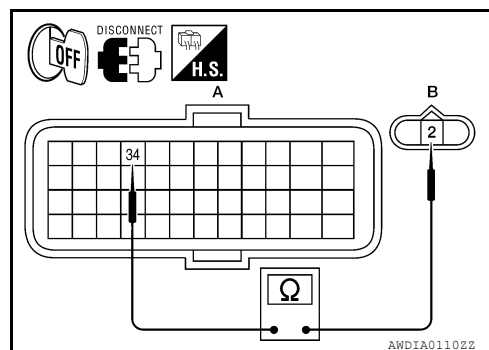
Is the inspection result normal?

YES >> Check the following. If NG, repair or replace damaged parts.

- Harness for short or open between ignition switch and IPDM E/R
- 10A fuse (No. 34, located in IPDM E/R)
- Ignition switch

NO >> Repair or replace damaged parts.

8.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (SENSOR GROUND) (PART 1)



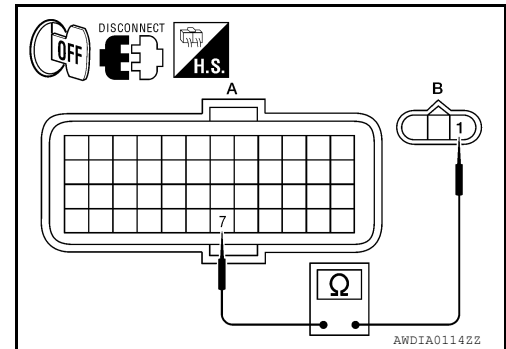
P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check continuity between TCM harness connector F16 (A) terminal 7 and secondary speed sensor harness connector F23 (B) terminal 1.

TCM harness connector		Secondary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	7	F23 (B)	1	Existed



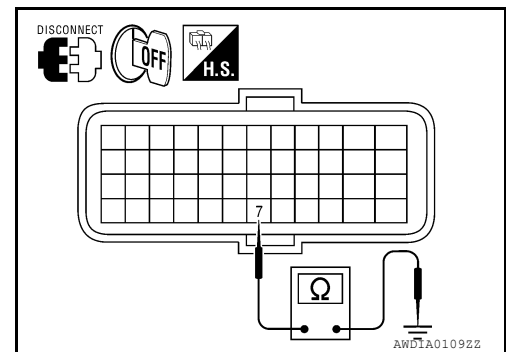
Is the inspection result normal?

- YES >> GO TO 9.
NO >> Repair or replace damaged parts.

9.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (SENSOR GROUND) (PART 2)

Check continuity between TCM harness connector F16 terminal 7 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	7		Not existed



Is the inspection result normal?

- YES >> GO TO 10.
NO >> Repair or replace damaged parts.

10.CHECK TCM

1. Replace same type TCM. Refer to [TM-239, "Removal and Installation"](#).
2. Connect each connector.
3. Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-144, "DTC Logic"](#).

Is "P0720" detected?

- YES >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).
NO >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

11.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

P0725 ENGINE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0725 ENGINE SPEED

Description

INFOID:000000006390508

The engine speed signal is sent from the ECM to the TCM by CAN communication line.

DTC Logic

INFOID:000000006390509

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0725	Engine Speed Input Circuit	<ul style="list-style-type: none">TCM does not receive the CAN communication signal from the ECM.Engine speed is too low while driving.	Harness or connectors (The ECM to the TCM circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

Ⓟ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 10 consecutive seconds.

PRI SPEED SEN : More than 1000 rpm

Is "P0725" detected?

- YES >> Go to [TM-144, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390510

1.CHECK DTC WITH ECM

Ⓟ With CONSULT-III

1. Turn ignition switch ON.
2. Perform "SELF-DIAG RESULTS" mode for "ENGINE".

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Check DTC detected item. Refer to [EC-659, "DTC Index"](#).

2.CHECK DTC WITH TCM

Ⓟ With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0725" detected?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> GO TO 3.

3.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

P0730 INCORRECT GEAR RATIO

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0730 INCORRECT GEAR RATIO

Description

INFOID:000000006390511

TCM selects the gear ratio using the engine load (throttle position), the primary pulley revolution speed, and the secondary pulley revolution speed as input signal. Then it changes the operating pressure of the primary pulley and the secondary pulley and changes the groove width of the pulley.

DTC Logic

INFOID:000000006390512

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0730	Incorrect Gear Ratio	Unexpected gear ratio detected.	Transaxle assembly

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

ⓅWith CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

4. Start engine and maintain the following conditions for at least 30 consecutive seconds.

TEST START FROM 0 km/h (0 MPH)

CONSTANT ACCELERATION : Keep 30 sec or more
VEHICLE SPEED : 10 km/h (6 MPH) or more
ACC PEDAL OPEN : More than 1.0/8
RANGE : "D" position
ENG SPEED : 450 rpm or more

Is "P0730" detected?

- YES >> Go to [TM-149, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390513

1.CHECK DTC

ⓅWith CONSULT-III

1. Turn ignition switch ON.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Are any DTC displayed?

- YES-1 >> DTC for "P0730" is displayed: Go to replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).
YES-2 >> DTC except for "P0730" is displayed: Go to check DTC detected item. Refer to [TM-196, "DTC Index"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

P0740 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0740 TORQUE CONVERTER

Description

INFOID:000000006390514

- The torque converter clutch solenoid valve is activated by the TCM in response to signals sent from the vehicle speed and accelerator pedal position sensors. Lock-up piston operation will then be controlled.
- Lock-up operation, however, is prohibited when CVT fluid temperature is too low.
- When the accelerator pedal is depressed (less than 2.0/8) in lock-up condition, the engine speed should not change abruptly. If there is a big jump in engine speed, there is no lock-up.

DTC Logic

INFOID:000000006390515

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0740	Torque Converter Clutch Circuit/Open	Normal voltage not applied to solenoid due to open or short circuit.	<ul style="list-style-type: none">• Torque converter clutch solenoid valve• Harness or connectors (Solenoid circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

1. Turn ignition switch ON.
2. Wait at least 10 consecutive seconds.
3. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0740" detected?

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

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390516

1.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check resistance between TCM harness connector F16 terminal 38 and ground.

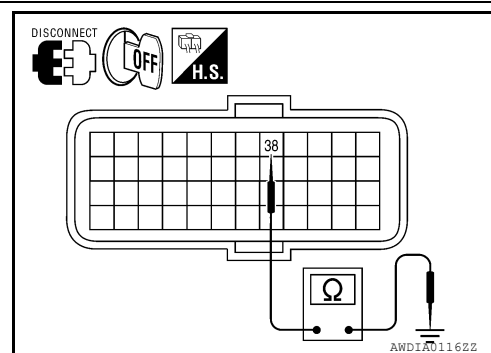
TCM harness connector		Ground	Resistance (Approx.)
Connector	Terminal		
F16	38		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND CVT UNIT (TORQUE CONVERTER CLUTCH SOLENOID VALVE) (PART 1)



P0740 TORQUE CONVERTER

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 38 and CVT unit harness connector F46 (B) terminal 12.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	38	F46 (B)	12	Existed

Is the inspection result normal?

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

3.CHECK HARNESS BETWEEN TCM AND CVT UNIT (TORQUE CONVERTER CLUTCH SOLENOID VALVE) (PART 2)

Check continuity between TCM harness connector F16 terminal 38 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	38		Not existed

Is the inspection result normal?

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

4.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

Check torque converter clutch solenoid valve. Refer to [TM-151, "Component Inspection \(Torque Converter Clutch Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

Component Inspection (Torque Converter Clutch Solenoid Valve)

INFOID:000000006390517

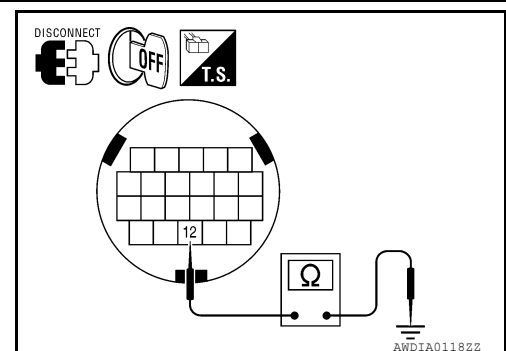
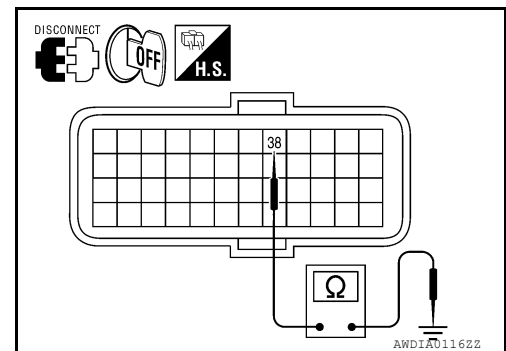
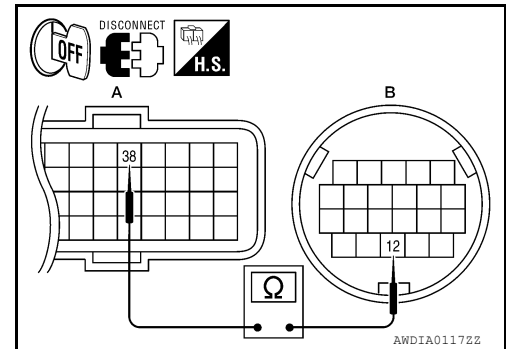
1.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

Check resistance between CVT unit terminal 12 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
12		3.0 – 9.0 Ω

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).



P0744 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0744 TORQUE CONVERTER

Description

INFOID:000000006390518

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

DTC Logic

INFOID:000000006390519

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0744	Torque Converter Clutch Circuit Intermittent	<ul style="list-style-type: none">• CVT cannot perform lock-up even if electrical circuit is good.• TCM detects as irregular by comparing difference value with slip rotation.• There is big difference engine speed and primary speed when TCM lock-up signal is on.	<ul style="list-style-type: none">• Torque converter clutch solenoid valve• Hydraulic control circuit

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following condition for at least 30 seconds.

ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
VEHICLE SPEED	: Constant speed of more than 40 km/h (25 MPH)

Is "P0744" detected?

- YES >> Go to [TM-152, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390520

1.CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-232, "Inspection and Judgment"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts. Refer to [TM-232, "Inspection and Judgment"](#).

2.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check torque converter clutch solenoid valve. Refer to [TM-151, "Component Inspection \(Torque Converter Clutch Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

3.CHECK LOCK-UP SELECT SOLENOID VALVE

P0744 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Check lock-up select solenoid valve. Refer to [TM-182, "Component Inspection \(Lock-up Select Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

4.CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-144, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-141, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Torque Converter Clutch Solenoid Valve)

INFOID:000000006390521

1.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

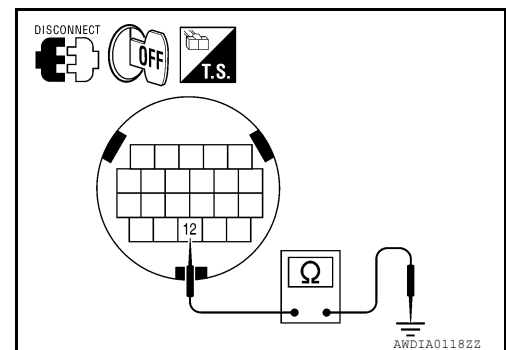
Check resistance between CVT unit terminal 12 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
12		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).



Component Inspection (Lock-up Select Solenoid Valve)

INFOID:000000006390522

1.CHECK LOCK-UP SELECT SOLENOID VALVE

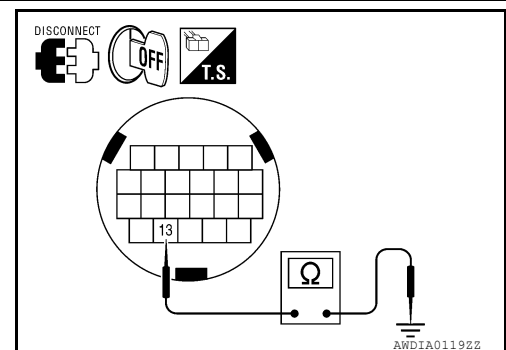
Check resistance between CVT unit connector terminal and ground.

CVT unit terminal	Ground	Resistance (Approx.)
13		6.0 – 19.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).



P0745 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0745 PRESSURE CONTROL SOLENOID A

Description

INFOID:000000006390523

The line pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390524

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0745	Pressure Control Solenoid A	<ul style="list-style-type: none">Normal voltage not applied to solenoid due to open or short circuit.TCM detects as irregular by comparing target value with monitor value.	<ul style="list-style-type: none">Harness or connectors (Solenoid circuit is open or shorted.)Line pressure solenoid valve

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

- Turn ignition switch ON.
- Start engine and wait at least 5 seconds.
- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0745" detected?

YES >> Go to [TM-154, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390525

1.CHECK LINE PRESSURE SOLENOID VALVE CIRCUIT

- Turn ignition switch OFF.
- Disconnect TCM harness connector.
- Check resistance between TCM harness connector F16 terminal 40 and ground.

TCM harness connector		Ground	Resistance (Approx.)
Connector	Terminal		
F16	40		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND CVT UNIT (LINE PRESSURE SOLENOID VALVE) (PART 1)

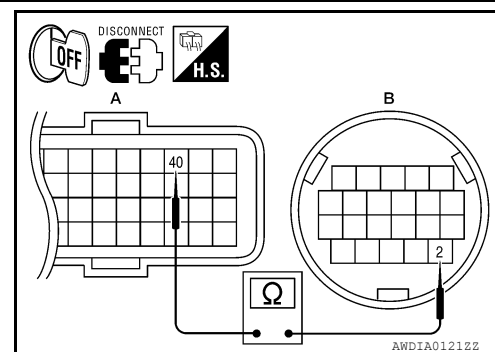
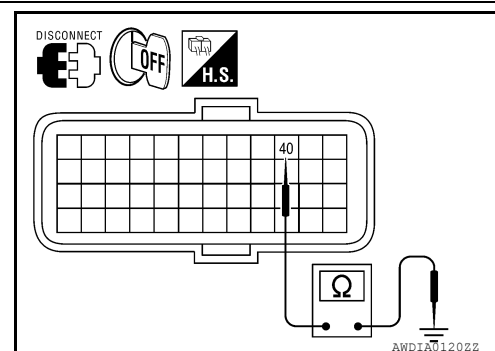
- Disconnect CVT unit connector.
- Check continuity between TCM harness connector F16 (A) terminal 40 and CVT unit harness connector F46 (B) terminal 2.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	40	F46 (B)	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.



P0745 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

3.CHECK HARNESS BETWEEN TCM AND CVT UNIT (LINE PRESSURE SOLENOID VALVE) (PART 2)

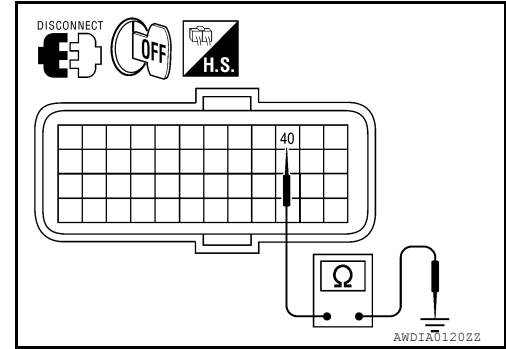
Check continuity between TCM vehicle side harness connector F16 terminal 40 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	40		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.



4.CHECK LINE PRESSURE SOLENOID VALVE

Check line pressure solenoid valve. Refer to [TM-155, "Component Inspection \(Line Pressure Solenoid Valve\)"](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000006390526

1.CHECK LINE PRESSURE SOLENOID VALVE

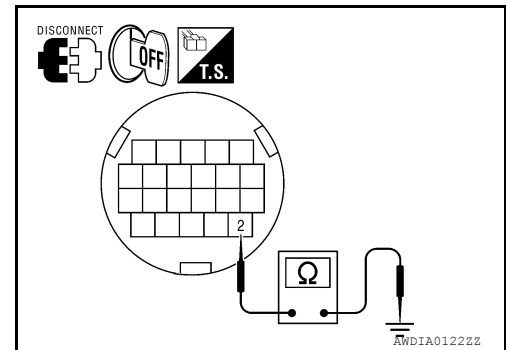
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).



P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0746 PRESSURE CONTROL SOLENOID A

Description

INFOID:000000006390527

The line pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390528

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0746	Pressure Control Solenoid A Performance/Stuck Off	Unexpected gear ratio was detected in the low side due to excessively low line pressure.	<ul style="list-style-type: none">• Line pressure control system• Secondary speed sensor• Primary speed sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 10 consecutive seconds. Test start from 0 km/h (0 MPH).

ATF TEMP SEN	: 1.0 – 2.0 V
ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
VEHICLE SPEED	: 10 km/h (6 MPH) or more
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P0746" detected?

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

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390529

1.CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-232, "Inspection and Judgment"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts. Refer to [TM-232, "Inspection and Judgment"](#).

2.CHECK LINE PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check line pressure solenoid valve. Refer to [TM-157, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

3.CHECK SECONDARY SPEED SENSOR SYSTEM

P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Check secondary speed sensor system. Refer to [TM-144, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-141, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:0000000006390530

1.CHECK LINE PRESSURE SOLENOID VALVE

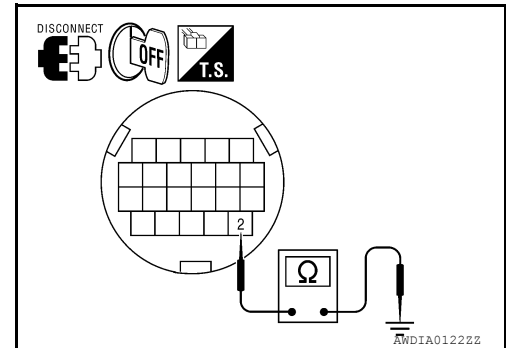
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).



P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0776 PRESSURE CONTROL SOLENOID B

Description

INFOID:000000006390531

The secondary pressure solenoid valve regulates the secondary pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390532

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0776	Pressure Control Solenoid B Performance/Stuck Off	Secondary pressure is too high or too low compared with the commanded value while driving.	<ul style="list-style-type: none">• Harness or connectors (Solenoid circuit is open or shorted.)• Secondary pressure solenoid valve system• Secondary pressure sensor• Line pressure control system

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1. CHECK DTC DETECTION

Ⓐ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 30 consecutive seconds.

ATF TEMP SEN	: 1.0 – 2.0 V
ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
VEHICLE SPEED	: 10 km/h (6 MPH) or more
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P0776" detected?

- YES >> Go to [TM-158, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390533

1. CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-232, "Inspection and Judgment"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts. Refer to [TM-232, "Inspection and Judgment"](#).

2. CHECK SECONDARY PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check secondary pressure solenoid valve. Refer to [TM-159, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

3.CHECK LINE PRESSURE SOLENOID VALVE

Check line pressure solenoid valve. Refer to [TM-159. "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation"](#).

4.CHECK SECONDARY PRESSURE SENSOR SYSTEM

Check secondary pressure sensor system. Refer to [TM-165. "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239. "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000006390534

1.CHECK LINE PRESSURE SOLENOID VALVE

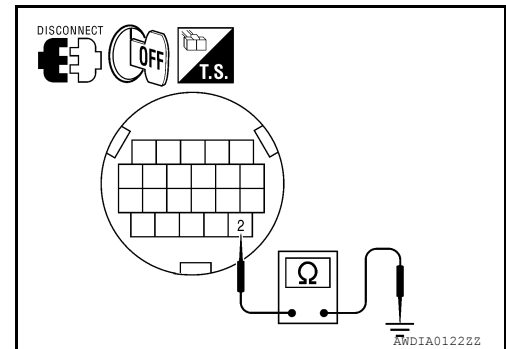
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation"](#).



Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000006390535

1.CHECK SECONDARY PRESSURE SOLENOID VALVE

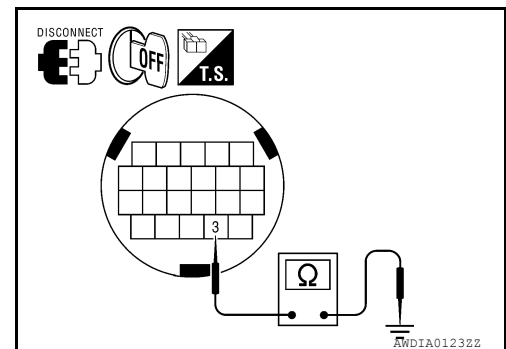
Check resistance between CVT unit terminal 3 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
3		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation"](#).



P0778 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0778 PRESSURE CONTROL SOLENOID B

Description

INFOID:000000006390536

The secondary pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390537

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0778	Pressure Control Solenoid B Electrical	<ul style="list-style-type: none">Normal voltage not applied to solenoid due to cut line, short, or the like.TCM detects as irregular by comparing target value with monitor value.	<ul style="list-style-type: none">Harness or connectors (Solenoid circuit is open or shorted.)Secondary pressure solenoid valve

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

- Start engine.
- Drive vehicle and maintain the following conditions for at least 5 consecutive seconds.
- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0778" detected?

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

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390538

1.CHECK SECONDARY PRESSURE SOLENOID VALVE CIRCUIT

- Turn ignition switch OFF.
- Disconnect TCM harness connector.
- Check resistance between TCM harness connector F16 terminal 39 and ground.

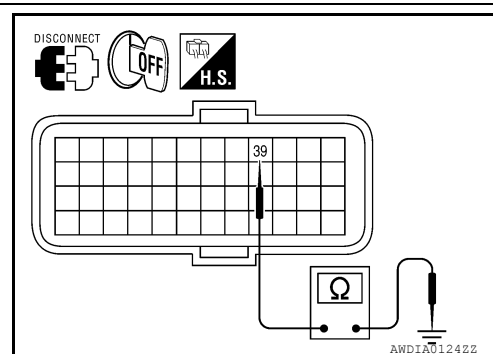
TCM harness connector		Ground	Resistance (Approx.)
Connector	Terminal		
F16	39		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND SECONDARY PRESSURE SOLENOID VALVE (PART 1)



P0778 PRESSURE CONTROL SOLENOID B

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 39 and CVT unit harness connector F46 (B) terminal 3.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	39	F46 (B)	3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK HARNESS BETWEEN TCM AND SECONDARY PRESSURE SOLENOID VALVE (PART 2)

Check continuity between TCM harness connector F16 terminal 39 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	39		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK SECONDARY PRESSURE SOLENOID VALVE

Check secondary pressure solenoid valve. Refer to [TM-161, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000006390539

1.CHECK SECONDARY PRESSURE SOLENOID VALVE

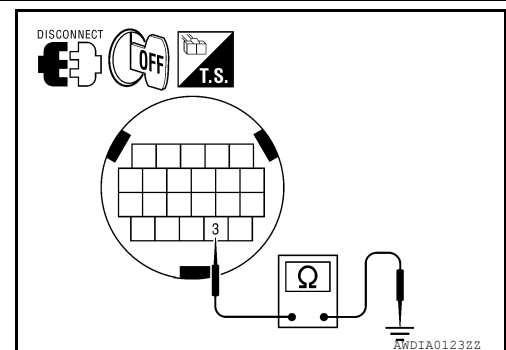
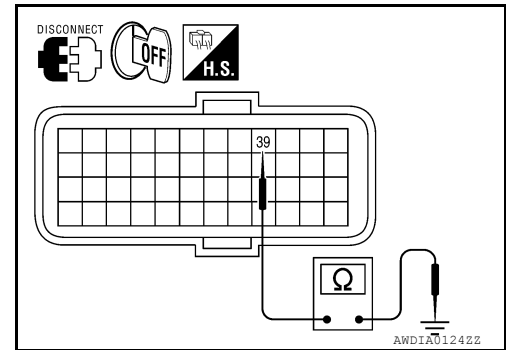
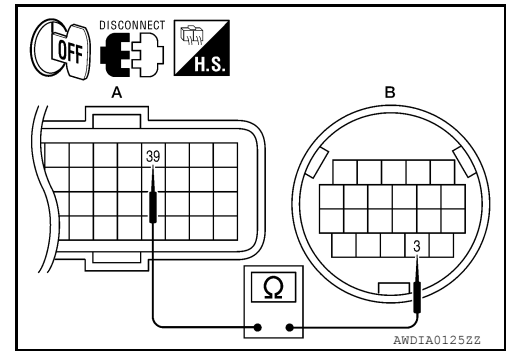
Check resistance between CVT unit terminal 3 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
3		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).



P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0826 UP AND DOWN SHIFT SW

Description

INFOID:000000006390540

Manual mode switch is installed in CVT control device. The manual mode switch sends shift up and shift down switch signals to TCM.

TCM sends the switch signals to combination meter via CAN communication line. Then manual mode switch position is indicated on the CVT position indicator.

DTC Logic

INFOID:000000006390541

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0826	Up and Down Shift Switch Circuit	When an impossible pattern of switch signals is detected, a malfunction is detected.	<ul style="list-style-type: none">• Harness or connectors- (These switches circuit is open or shorted.)- (TCM, and combination meter circuit are open or shorted.)- (CAN communication line is open or shorted.)• Manual mode select switch (Built into CVT shift selector)• Manual mode position select switch (Built into CVT shift selector)

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Drive vehicle and maintain the following conditions for at least 2 consecutive seconds.

MMODE : On

Is "P0826" detected?

YES >> Go to [TM-162, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390542

1.CHECK MANUAL MODE SWITCH SIGNALS

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Check the ON/OFF operations of each monitor item.

Item name	Condition	Display value
MMODE	Manual shift gate position	On
	Other than the above	Off
NONMMODE	Manual shift gate position	Off
	Other than the above	On

P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Item name	Condition	Display value
UPLVR	Selector lever: + side	On
	Other than the above	Off
DOWNLVR	Selector lever: – side	On
	Other than the above	Off

⊗ Without CONSULT-III

Drive vehicle in the manual mode, and confirm that the actual gear position and the meter's indication of the position mutually coincide when the selector lever is shifted to the “+ (up)” or “– (down)” side (1st ⇔ 6th gear).

Is the inspection result normal?

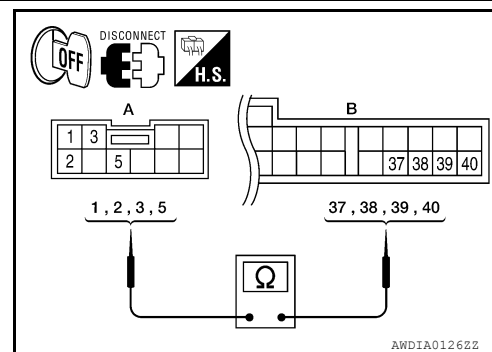
YES >> GO TO 7.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN CVT SHIFT SELECTOR AND COMBINATION METER (PART 1)

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector harness connector and combination meter harness connector.
3. Check continuity between CVT shift selector harness connector M23 (A) terminal 1, 2, 3 and 5 and combination meter harness connector M24 (B) terminal 40, 38, 39 and 37.

CVT shift selector harness connector		Combination meter harness connector		Continuity
Connector	Terminal	Connector	Terminal	
M23 (A)	1	M24 (B)	40	Existed
	2		38	
	3		39	
	5		37	



Is the inspection result normal?

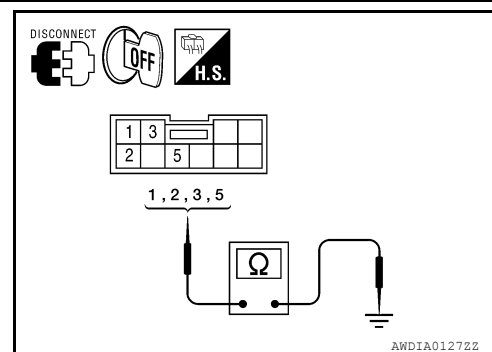
YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK HARNESS BETWEEN CVT SHIFT SELECTOR AND COMBINATION METER (PART 2)

Check continuity between CVT shift selector harness connector M23 terminal 1, 2, 3, and 5 and ground.

CVT shift selector harness connector			Continuity
Connector	Terminal		
M23	1	Ground	Not existed
	2		
	3		
	5		



Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK GROUND CIRCUIT (PART 1)

P0826 UP AND DOWN SHIFT SW

[CVT: RE0F09B]

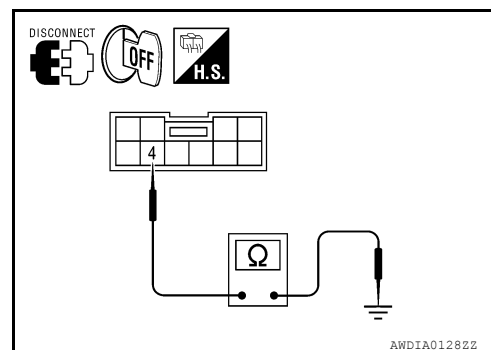
< DTC/CIRCUIT DIAGNOSIS >

Check continuity between CVT shift selector harness connector M23 terminal 4 and ground.

CVT shift selector harness connector		Ground	Continuity
Connector	Terminal		
M23	4		Existed

Is the inspection result normal?

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



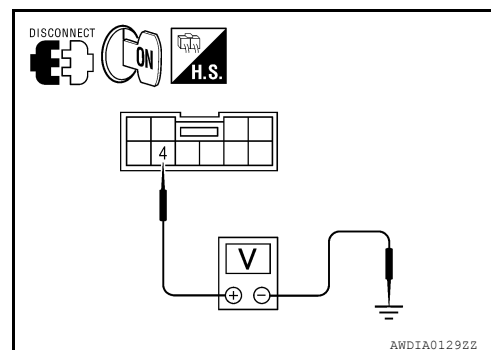
5.CHECK GROUND CIRCUIT (PART 2)

- Turn ignition switch ON.
- Check voltage between CVT shift selector harness connector M23 terminal 4 and ground.

CVT shift selector harness connector		Ground	Voltage (Approx.)
Connector	Terminal		
M23	4		0 V

Is the inspection result normal?

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



6.CHECK MANUAL MODE SWITCH

Check manual mode switch. Refer to [TM-164, "Component Inspection \(Manual Mode Switch\)"](#).

Is the inspection result normal?

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

7.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

Component Inspection (Manual Mode Switch)

INFOID:000000006390543

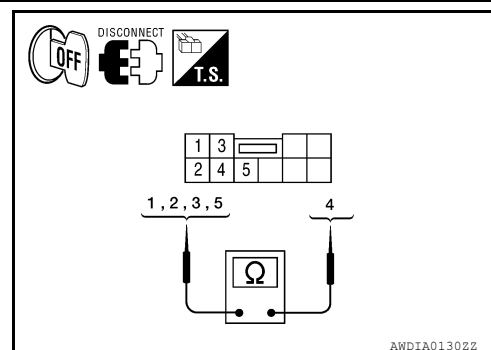
1.CHECK MANUAL MODE SWITCH

Check continuity between CVT shift selector terminals.

CVT shift selector terminals		Condition	Continuity
5	4	Manual shift gate position	Not existed
		Other than the above	Existed
1	4	Manual shift gate position	Existed
		Other than the above	Not existed
3	4	Selector lever: UP (+ side)	Existed
		Other than the above	Not existed
2	4	Selector lever: DOWN (- side)	Existed
		Other than the above	Not existed

Is the inspection result normal?

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



P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

Description

INFOID:000000006390544

The secondary pressure sensor detects secondary pressure of CVT and sends TCM the signal.

DTC Logic

INFOID:000000006390545

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0840	Transmission Fluid Pressure Sensor/Switch A Circuit	Signal voltage of the secondary pressure sensor is too high or too low while driving.	<ul style="list-style-type: none">• Harness or connectors (Sensor circuit is open or shorted.)• Secondary pressure sensor

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

4. Start engine and wait for at least 5 consecutive seconds.

Is "P0840" detected?

YES >> Go to [TM-165, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390546

1.CHECK INPUT SIGNAL

1. Start engine.
2. Check voltage between TCM harness connector F16 terminal 15 and ground.

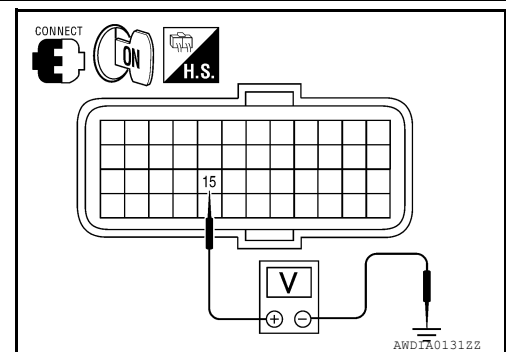
TCM harness connector		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
F16	15		"N" position idle	1.0 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 2.

2.CHECK POWER AND SENSOR GROUND



P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

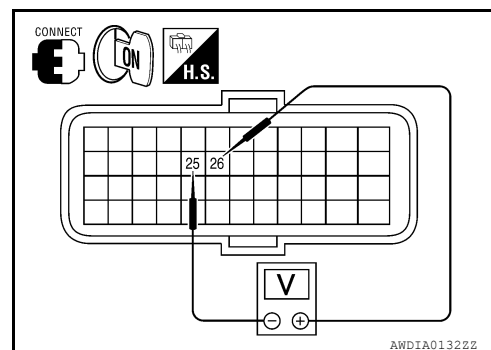
Check voltage between TCM harness connector F16 terminal 25 and 26.

TCM harness connector			Voltage (Approx.)
Connector	Terminal		
F16	25	26	5.0 V

Is the inspection result normal?

YES >> GO TO 3.

NO >> GO TO 5.



3. CHECK HARNESS BETWEEN TCM AND CVT UNIT (SECONDARY PRESSURE SENSOR) (PART 1)

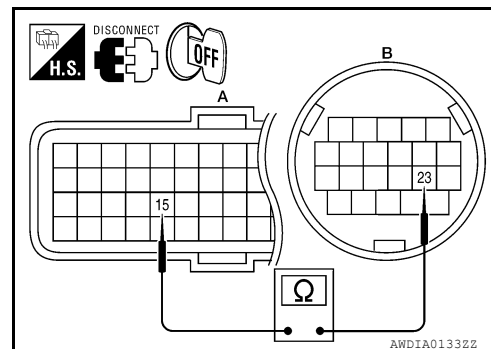
1. Turn ignition switch OFF.
2. Disconnect TCM harness connector and CVT unit harness connector.
3. Check continuity between TCM harness connector F16 (A) terminal 15 and CVT unit harness connector F46 (B) terminal 23.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	15	F46 (B)	23	Existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.



4. CHECK HARNESS BETWEEN TCM AND CVT UNIT (SECONDARY PRESSURE SENSOR) (PART 2)

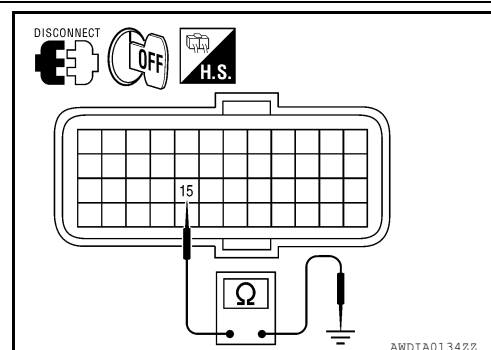
Check continuity between TCM harness connector F16 terminal 15 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	15		Not existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.



5. CHECK HARNESS BETWEEN TCM AND CVT UNIT (SENSOR POWER AND SENSOR GROUND) (PART 1)

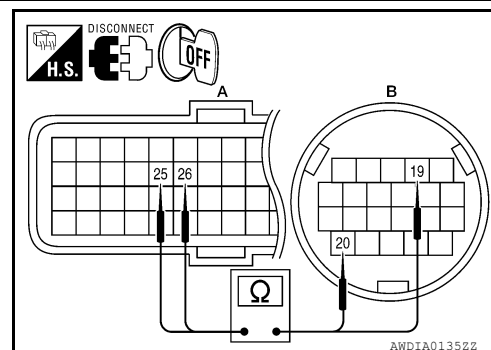
1. Turn ignition switch OFF.
2. Disconnect TCM harness connector and CVT unit harness connector.
3. Check continuity between TCM harness connector F16 (A) terminal 25, 26 and CVT unit harness connector F46 (B) terminal 19, 20.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	25	F46 (B)	19	Existed
	26		20	

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.



6. CHECK HARNESS BETWEEN TCM AND CVT UNIT (SENSOR POWER AND SENSOR GROUND) (PART 2)

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

2)

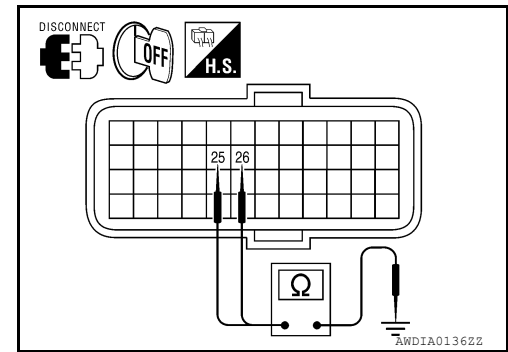
Check continuity between TCM harness connector F16 terminal 25, 26 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	25		Not existed
	26		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.



7.CHECK TCM

1. Replace same type TCM. Refer to [TM-239, "Removal and Installation"](#).
2. Connect each connector.
3. Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-165, "DTC Logic"](#).

Is "P0840" detected?

YES >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

NO >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

8.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

Description

INFOID:000000006390547

Using the engine load (throttle position), the primary pulley revolution speed, and the secondary pulley revolution speed as input signal, TCM changes the operating pressure of the primary pulley and the secondary pulley and changes the groove width of the pulley to control the gear ratio.

DTC Logic

INFOID:000000006390548

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0841	Transmission Fluid Pressure Sensor/Switch A Circuit Range/Performance	Correlation between the values of the secondary pressure sensor and the primary pressure sensor is out of specification.	<ul style="list-style-type: none">• Harness or connectors (Sensor circuit is open or shorted.)• Secondary pressure sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

① With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 12 consecutive seconds.

VEHICLE SPEED : 40 km/h (25 MPH) or more
RANGE : "D" position

Is "P0841" detected?

- YES >> Go to [TM-168, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390549

1.CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-232, "Inspection and Judgment"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts. Refer to [TM-232, "Inspection and Judgment"](#).

2.CHECK SECONDARY PRESSURE SENSOR SYSTEM

Check secondary pressure sensor system. Refer to [TM-165, "Description"](#).

Is the inspection result normal?

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

3.CHECK LINE PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check line pressure solenoid valve. Refer to [TM-157, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

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

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

4.CHECK SECONDARY PRESSURE SOLENOID VALVE

Check secondary pressure solenoid valve. Refer to [TM-161. "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK STEP MOTOR SYSTEM

Check step motor system. Refer to [TM-184. "Description"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-247. "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000006390550

1.CHECK LINE PRESSURE SOLENOID VALVE

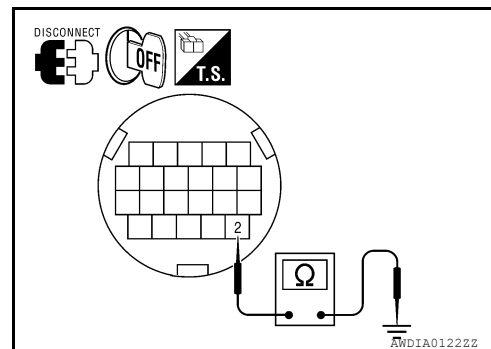
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation"](#).



Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000006390551

1.CHECK SECONDARY PRESSURE SOLENOID VALVE

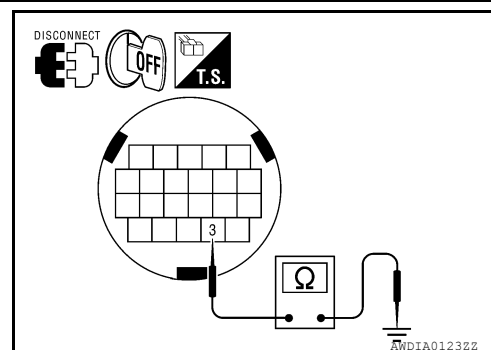
Check resistance between CVT unit terminal 3 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
3		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation"](#).



P0868 TRANSMISSION FLUID PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P0868 TRANSMISSION FLUID PRESSURE

Description

INFOID:000000006390555

The secondary pressure solenoid valve regulates the secondary pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390556

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0868	Transmission Fluid Pressure Low	Secondary fluid pressure is too low compared with the commanded value while driving.	<ul style="list-style-type: none">• Harness or connectors (Solenoid circuit is open or shorted.)• Secondary pressure solenoid valve system• Secondary pressure sensor• Line pressure control system

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1. CHECK DTC DETECTION

Ⓐ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

4. Start engine and maintain the following conditions for at least 10 consecutive seconds.

VEHICLE SPEED (accelerate slowly) : 0 → 50 km/h (31 MPH)

ACC PEDAL OPEN : 0.5/8 – 1.0/8

RANGE : "D" position

Is "P0868" detected?

- YES >> Go to [TM-170, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390557

1. CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-232, "Inspection and Judgment"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts. Refer to [TM-232, "Inspection and Judgment"](#).

2. CHECK SECONDARY PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check secondary pressure solenoid valve. Refer to [TM-161, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

P0868 TRANSMISSION FLUID PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK LINE PRESSURE SOLENOID VALVE

Check line pressure solenoid valve. Refer to [TM-157, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK SECONDARY PRESSURE SENSOR SYSTEM

Check secondary pressure sensor system. Refer to [TM-165, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000006390558

1.CHECK LINE PRESSURE SOLENOID VALVE

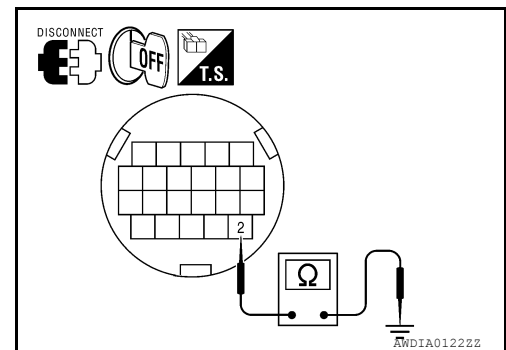
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).



Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000006390559

1.CHECK SECONDARY PRESSURE SOLENOID VALVE

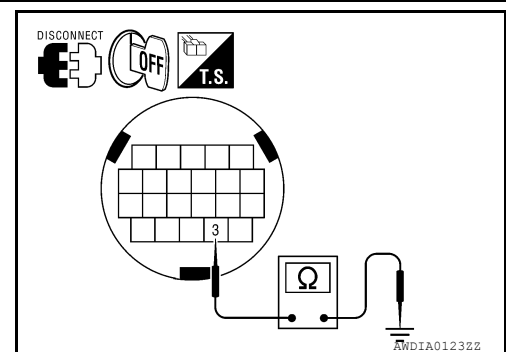
Check resistance between CVT unit terminal 3 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
3		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).



P1701 TCM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1701 TCM

Description

INFOID:000000006390560

When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops, malfunction is detected.

NOTE:

Since "P1701" will be indicated when replacing TCM, perform diagnosis after erasing "SELF-DIAG RESULTS"

DTC Logic

INFOID:000000006390561

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1701	Power Supply Circuit	<ul style="list-style-type: none">When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops.This is not a malfunction message (When-ever shutting OFF a power supply to the TCM, this message appears on the screen).	Harness or connectors (Battery or ignition switch and TCM circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

① With CONSULT-III

- Turn ignition switch ON.
- Wait for at least 2 consecutive seconds.
- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1701" detected?

YES >> Go to [TM-172, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390562

1.CHECK TCM POWER SOURCE

- Turn ignition switch OFF.
- Disconnect TCM harness connector.
- Check voltage between TCM harness connector F16 terminal 46, 48, 47 and 5, 42.

TCM harness connector			Condition	Voltage (Approx.)
Connec-tor	Terminal			
F16	46	5, 42	Ignition switch ON	Battery voltage
			Ignition switch OFF	0 V
	48		Ignition switch ON	Battery voltage
			Ignition switch OFF	0 V
	47		Always	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 2.

2.CHECK TCM GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between TCM harness connector F16 terminal 5, 42 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	5		Existed
	42		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK TCM POWER CIRCUIT

Check voltage between TCM harness connector F16 terminal 46, 48, 47 and ground.

TCM harness connector		Condition	Voltage (Approx.)
Connector	Terminal		
F16	46	Ignition switch ON	Battery voltage
		Ignition switch OFF	0 V
	48	Ignition switch ON	Battery voltage
		Ignition switch OFF	0 V
	47	Always	Battery voltage

Is the inspection result normal?

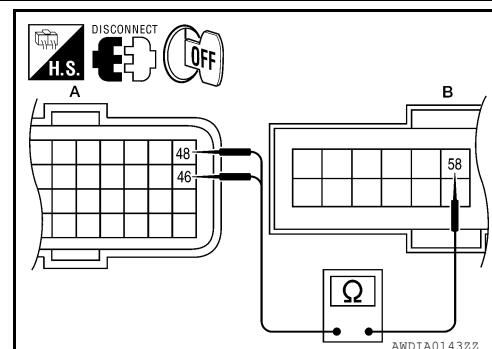
YES >> GO TO 6.

NO >> GO TO 4.

4.CHECK HARNESS BETWEEN TCM AND IPDM E/R AND BETWEEN TCM AND BATTERY (PART 1)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector F10.
3. Check continuity between TCM harness connector F16 (A) terminal 46, 48 and IPDM E/R harness connector F10 (B) terminal 58.

TCM harness connector		IPDM E/R harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	46	F10 (B)	58	Existed
	48			



4. Disconnect fuse block J/B harness connector E6.
5. Check continuity between TCM harness connector F16 terminal 47 and fuse block J/B harness connector E6 terminal 12P.

TCM harness connector		Fuse block J/B harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	47	E6 (B)	12P	Existed

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND IPDM E/R AND BETWEEN TCM AND BATTERY (PART 2)

Check continuity between TCM harness connector F16 terminal 46, 47, 48 and ground.

TCM harness connector			Continuity
Connector	Terminal		
F16	46	Ground	Not existed
	47		
	48		

Is the inspection result normal?

YES >> Check the following. If NG, repair or replace damaged parts.

- 10A fuse (No. 34, located in IPDM E/R)
- 10A fuse (No. 11, located in fuse block)
- Ignition switch. Refer to [PG-75, "Wiring Diagram — Battery Power Supply —"](#).

NO >> Repair or replace damaged parts.

6.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

P1705 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1705 TP SENSOR

Description

INFOID:000000006390563

Electric throttle control actuator consists of throttle control motor, accelerator pedal position sensor, throttle position sensor etc. The actuator sends a signal to the ECM, and ECM sends the signal to TCM with CAN communication.

DTC Logic

INFOID:000000006390564

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1705	Accelerator Pedal Position Sensor Signal Circuit	TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM.	<ul style="list-style-type: none">ECMHarness or connectors (CAN communication line is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

④With CONSULT-III

- Turn ignition switch ON.
- Depress accelerator pedal fully and release it, then wait for 5 seconds.
- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1705" detected?

- YES >> Go to [TM-175, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390565

1.CHECK DTC WITH ECM

④With CONSULT-III

- Turn ignition switch ON.
- Perform "SELF-DIAG RESULTS" mode for "ENGINE".

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Check DTC Detected Item. Refer to [EC-659, "DTC Index"](#).

2.CHECK DTC WITH TCM

④With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1705" detected?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> GO TO 3.

3.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

P1722 VEHICLE SPEED

Description

INFOID:000000006390566

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

DTC Logic

INFOID:000000006390567

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1722	Vehicle Speed Signal Circuit	<ul style="list-style-type: none"> CAN communication with the ABS actuator and the electric unit (control unit) is malfunctioning. There is a great difference between the vehicle speed signal from the ABS actuator and the electric unit (control unit), and the vehicle speed sensor signal. 	<ul style="list-style-type: none"> Harness or connectors (Sensor circuit is open or shorted.) ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

 With CONSULT-III

- Turn ignition switch ON.
- Select "DATA MONITOR".
- Start engine and maintain the following conditions for at least 5 consecutive seconds.

ACC PEDAL OPEN	: 1.0/8 or less
VEHICLE SPEED	: 30 km/h (19 MPH) or more

Is "P1722" detected?

- YES >> Go to [TM-176, "Diagnosis Procedure"](#).
 NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390568

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

 With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "ABS".

Is the inspection result normal?

- YES >> GO TO 2.
 NO >> Check DTC detected item. Refer to [BRC-115, "DTC No. Index"](#) (TCS/ABS) or [BRC-220, "DTC No. Index"](#) (VDC/TCS/ABS).

2.CHECK DTC WITH TCM

 With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1722" detected?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
 NO >> GO TO 3.

3.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

P1722 VEHICLE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

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P1723 SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1723 SPEED SENSOR

Description

INFOID:000000006390569

The secondary speed sensor detects the revolution of parking gear and generates a pulse signal. The pulse signal is sent to the TCM, which converts it into vehicle speed.

The primary speed sensor detects the primary pulley revolution speed and sends a signal to the TCM.

DTC Logic

INFOID:000000006390570

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1723	Speed Sensor Circuit	A rotation sensor error is detected because the gear does not change in accordance with the position of the stepping motor. CAUTION: One of the "P0720", the "P0715" or the "P0725" is displayed with the DTC at the same time.	<ul style="list-style-type: none">• Harness or connectors (Sensor circuit is open or shorted.)• Secondary speed sensor• Primary speed sensor• Engine speed signal system

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 5 consecutive seconds.

VEHICLE SPEED	: 10 km/h (6 MPH) or more
ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
ENG SPEED	: 450 rpm or more
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P1723" detected?

YES >> Go to [TM-178, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390571

1.CHECK STEP MOTOR FUNCTION

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1778" detected?

YES >> Repair or replace damaged parts. Refer to [TM-187, "DTC Logic"](#).

NO >> GO TO 2.

2.CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-144, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

P1723 SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

3.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-141, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK ENGINE SPEED SIGNAL SYSTEM

Check engine speed signal system. Refer to [TM-148, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

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P1726 THROTTLE CONTROL SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1726 THROTTLE CONTROL SIGNAL

Description

INFOID:000000006390572

Electric throttle control actuator consists of throttle control motor, accelerator pedal position sensor, throttle position sensor etc. The actuator sends a signal to the ECM, and ECM sends the signal to TCM with CAN communication.

DTC Logic

INFOID:000000006390573

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1726	Throttle Control Signal Circuit	The electronically controlled throttle for ECM is malfunctioning.	Harness or connectors (Sensor circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

Ⓔ With CONSULT-III

1. Start engine and let it idle for 5 seconds.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1726" detected?

- YES >> Go to [TM-180, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390574

1.CHECK DTC WITH ECM

Ⓔ With CONSULT-III

1. Turn ignition switch ON.
2. Select "SELF-DIAG RESULTS" mode for "ENGINE".

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Check DTC Detected Item. Refer to [EC-659, "DTC Index"](#).

2.CHECK DTC WITH TCM

Ⓔ With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1726 ELEC TH CONTROL" detected?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> GO TO 3.

3.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

P1740 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1740 SELECT SOLENOID

Description

INFOID:000000006390575

- Lock-up select solenoid valve controls lock-up clutch pressure or forward clutch pressure (reverse brake pressure).
- When controlling lock-up clutch, the valve is turned OFF. When controlling forward clutch, it is turned ON.

DTC Logic

INFOID:000000006390576

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1740	Lock-up Select Solenoid Valve Circuit	<ul style="list-style-type: none">• Normal voltage not applied to solenoid due to cut line, short, or the like.• TCM detects as irregular by comparing target value with monitor value.	<ul style="list-style-type: none">• Harness or connectors (Solenoid circuit is open or shorted.)• Lock-up select solenoid valve

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

Ⓜ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 5 consecutive seconds.

RANGE : "D" or "N" position
(At each time, wait for 5 seconds.)

Is "P1740" detected?

- YES >> Go to [TM-181, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390577

1.CHECK LOCK-UP SELECT SOLENOID VALVE CIRCUIT

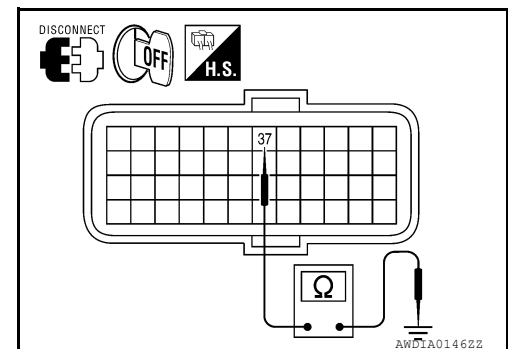
1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check resistance between TCM harness connector F16 terminal 37 and ground.

TCM harness connector		Ground	Resistance (Approx.)
Connector	Terminal		
F16	37		6.0 – 19.0 Ω

Is the inspection result normal?

- YES >> GO TO 5.
NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND CVT UNIT (LOCK-UP SELECT SOLENOID VALVE) (PART 1)



P1740 SELECT SOLENOID

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 37 and CVT unit harness connector F46 (B) terminal 13.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	37	F46 (B)	13	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK HARNESS BETWEEN TCM AND CVT UNIT (LOCK-UP SELECT SOLENOID VALVE) (PART 2)

Check continuity between TCM harness connector F16 terminal 37 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	37		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK LOCK-UP SELECT SOLENOID VALVE

Check lock-up select solenoid valve. Refer to [TM-182. "Component Inspection \(Lock-up Select Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239. "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Lock-up Select Solenoid Valve)

INFOID:000000006390578

1.CHECK LOCK-UP SELECT SOLENOID VALVE

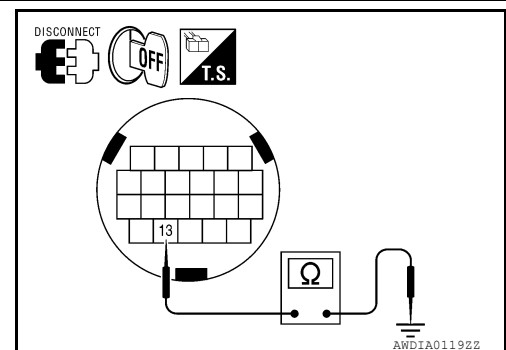
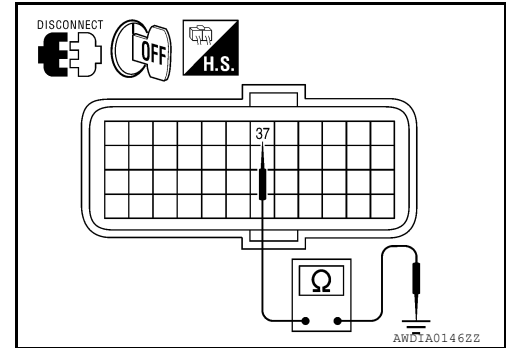
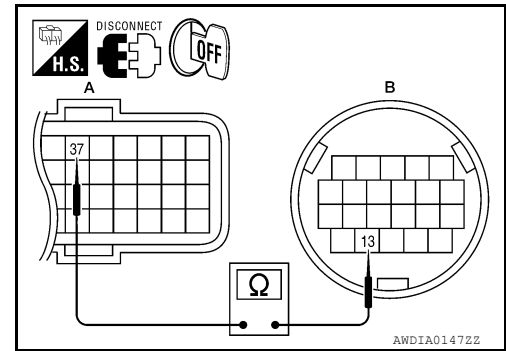
Check resistance between CVT unit connector terminal and ground.

CVT unit terminal	Ground	Resistance (Approx.)
13		6.0 – 19.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation"](#).



P1745 LINE PRESSURE CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1745 LINE PRESSURE CONTROL

Description

INFOID:000000006390579

The line pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390580

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1745	Line Pressure Control Circuit	TCM detects the unexpected line pressure.	TCM

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

1. Turn ignition switch ON
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

Is "P1745" detected?

- YES >> Go to [TM-183, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390581

1.CHECK DTC

With CONSULT-III

1. Start engine.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1745" displayed?

- YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

P1777 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1777 STEP MOTOR

Description

INFOID:000000006390582

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

DTC Logic

INFOID:000000006390583

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1777	Step Motor Circuit	Each coil of the step motor is not energized properly due to an open or a short.	<ul style="list-style-type: none">• Harness or connectors (Step motor circuit is open or shorted.)• Step motor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Start engine.
2. Drive vehicle for at least 5 consecutive seconds.
3. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1777" detected?

YES >> Go to [TM-184. "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

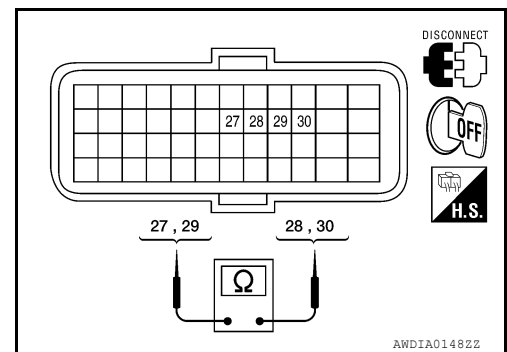
Diagnosis Procedure

INFOID:000000006390584

1.CHECK STEP MOTOR CIRCUIT

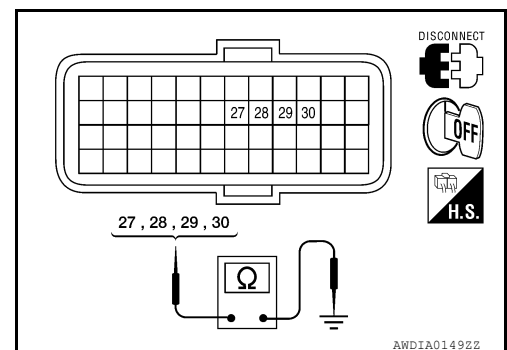
1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check resistance between TCM harness connector F16 terminal 27, 29 and 28, 30.

TCM harness connector			Resistance (Approx.)
Connector	Terminal		
F16	27	28	30.0 Ω
	29	30	



4. Check resistance between TCM harness connector F16 terminal 27, 28, 29, 30 and ground.

TCM harness connector		Resistance (Approx.)
Connector	Terminal	
F16	27	15.0 Ω
	28	
	29	
	30	



Is the inspection result normal?

P1777 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

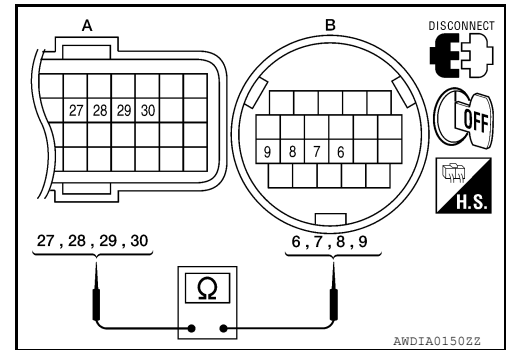
[CVT: RE0F09B]

- YES >> GO TO 5.
NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND CVT UNIT (STEP MOTOR) (PART 1)

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 27, 28, 29, 30 and CVT unit harness connector F46 (B) terminal 9, 8, 7, 6.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	27	F46 (B)	9	Existed
	28		8	
	29		7	
	30		6	



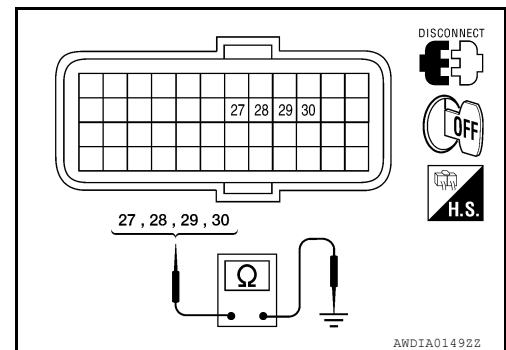
Is the inspection result normal?

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

3.CHECK HARNESS BETWEEN TCM AND CVT UNIT (STEP MOTOR) (PART 2)

Check continuity between TCM harness connector F16 terminal 27, 28, 29, 30 and ground.

TCM harness connector			Continuity
Connector	Terminal		
F16	27	Ground	Not existed
	28		
	29		
	30		



Is the inspection result normal?

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

4.CHECK STEP MOTOR

Check step motor. Refer to [TM-185. "Component Inspection \(Step Motor\)".](#)

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation".](#)

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-239. "Removal and Installation".](#)
NO >> Repair or replace damaged parts.

Component Inspection (Step Motor)

INFOID:000000006390585

1.CHECK STEP MOTOR

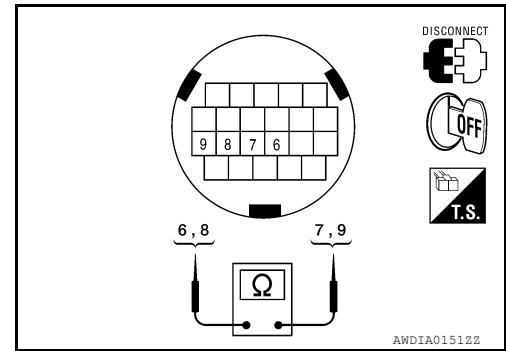
P1777 STEP MOTOR

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

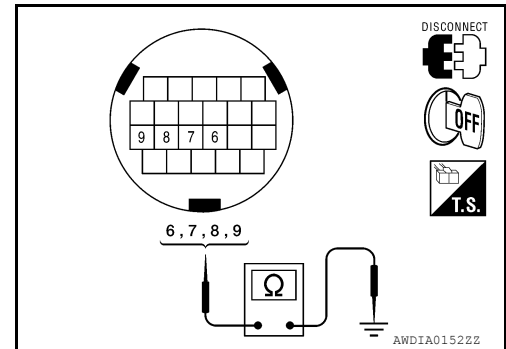
1. Check resistance between CVT unit terminal 6, 8 and 7, 9.

CVT unit terminals		Resistance (Approx.)
6	7	30.0 Ω
8	9	



2. Check resistance between CVT unit terminal 6, 7, 8, 9 and ground.

CVT unit terminal		Resistance (Approx.)
6	Ground	15.0 Ω
7		
8		
9		



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-247. "Removal and Installation"](#).

P1778 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

P1778 STEP MOTOR

Description

INFOID:000000006390586

- The step motor's 4 aspects of ON/OFF change according to the signal from TCM. As a result, the flow of line pressure to primary pulley is changed and pulley ratio is controlled.
- This diagnosis item is detected when electrical system is OK, but mechanical system is NG.
- This diagnosis item is detected when the state of the changing the speed mechanism in unit does not operate normally.

DTC Logic

INFOID:000000006390587

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1778	Step Motor Circuit Intermittent	There is a great difference between the number of steps for the stepping motor and for the actual gear ratio.	Step motor

DTC CONFIRMATION PROCEDURE

CAUTION:

- Always drive vehicle at a safe speed.
- Before starting "DTC CONFIRMATION PROCEDURE", confirm "Hi" or "Mid" or "Low" fixation by "PRI SPEED" and "VEHICLE SPEED" on "DATA MONITOR MODE".
- If hi-gear fixation occurred, go to [TM-187, "Diagnosis Procedure"](#).

NOTE:

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

1.CHECK DTC DETECTION

ⓂWith CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

4. Start engine and maintain the following conditions for at least 30 consecutive seconds.

TEST START FROM 0 km/h (0 MPH)

CONSTANT ACCELERATION : Keep 30 sec or more

VEHICLE SPEED : 10 km/h (6 MPH) or more

ACC PEDAL OPEN : More than 1.0/8

RANGE : "D" position

ENG SPEED : 450 rpm or more

Is "P1778" detected?

- YES >> Go to [TM-187, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390588

1.CHECK STEP MOTOR SYSTEM

Check step motor system. Refer to [TM-184, "Description"](#).

Is the inspection result normal?

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

P1778 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

2.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-141, "Description"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-144, "Description"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-239, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F09B]

SHIFT LOCK SYSTEM

Description

INFOID:000000006390589

The selector lever cannot be shifted from “P” position to any other position unless the ignition switch is in the ON position and the brake pedal is depressed.

Diagnosis Procedure

INFOID:000000006390590

Regarding Wiring Diagram information, refer to [TM-198, "Wiring Diagram"](#).

1. CHECK POWER SOURCE

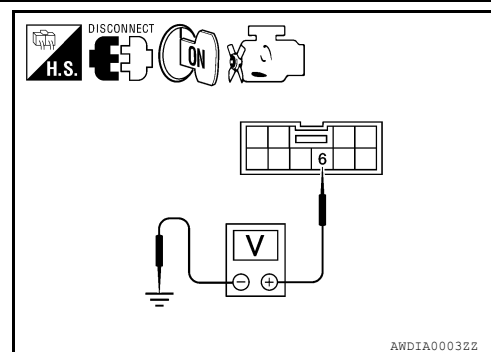
1. Disconnect CVT shift selector connector.
2. Turn ignition switch ON.
3. Check voltage between CVT shift selector connector M23 terminal 6 and ground.

CVT shift selector		Condition	Voltage (Approx.)
Connector	Terminal		
M23	6	Brake pedal depressed	Battery voltage
		Brake pedal released	0V

Is the inspection result normal?

YES >> GO TO 4.

NO >> GO TO 2.



2. CHECK POWER SOURCE AT STOP LAMP SWITCH

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch connector.
3. Turn ignition switch ON.
4. Check voltage between stop lamp switch connector E38 terminal 3 and ground.

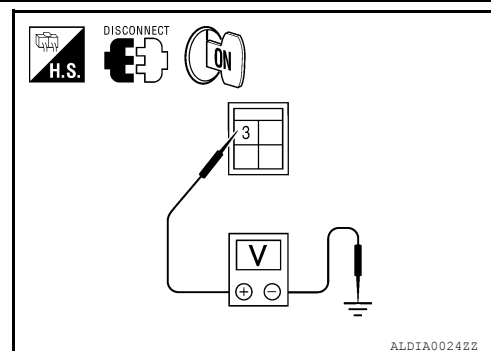
Stop lamp switch		Ground	Voltage (Approx.)
Connector	Terminal		
E38	3	—	Battery voltage

Is the inspection result normal?

YES >> GO TO 3.

NO >> Check the following:

- Harness for short or open between fuse block (J/B) and stop lamp switch
- 10A fuse [No. 3, located in fuse block (J/B)]



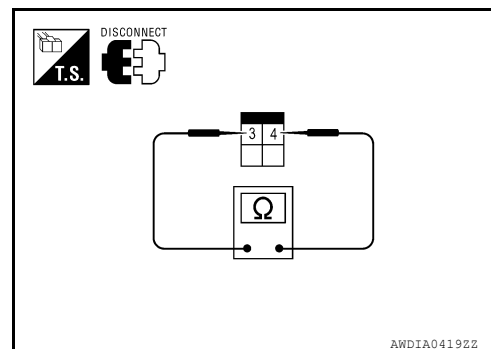
3. CHECK STOP LAMP SWITCH

1. Turn ignition switch OFF.
2. Check continuity between stop lamp switch terminals 3 and 4.

Stop lamp switch terminals	Condition	Continuity
3 and 4	Brake pedal depressed	Yes
	Brake pedal released	No

Is the inspection result normal?

YES >> Repair harness between stop lamp switch and CVT shift selector.



SHIFT LOCK SYSTEM

[CVT: RE0F09B]

< DTC/CIRCUIT DIAGNOSIS >

NO >> Replace stop lamp switch. Refer to [BR-17. "Exploded View"](#).

4. CHECK GROUND CIRCUIT

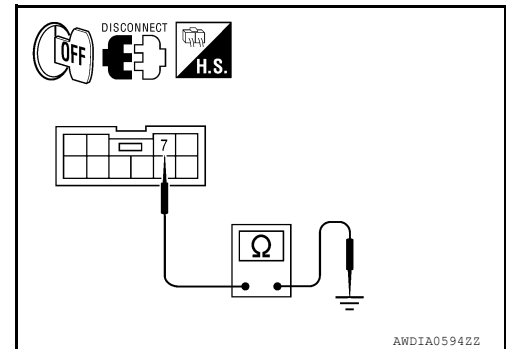
1. Turn ignition switch OFF.
2. Check continuity between CVT shift selector connector M23 terminal 7 and ground.

CVT shift selector		Ground	Continuity
Connector	Terminal		
M23	7	—	Yes

Is the inspection result normal?

YES >> Replace CVT shift selector. Refer to [TM-240. "Removal and Installation"](#).

NO >> Repair harness or connectors.



ECU DIAGNOSIS INFORMATION

TCM

Reference Value

INFOID:000000006390591

VALUES ON THE DIAGNOSIS TOOL

Item name	Condition	Display value (Approx.)
VSP SENSOR	During driving	Approximately matches the speedometer reading.
ESTM VSP SIG	During driving	Approximately matches the speedometer reading.
PRI SPEED SEN	During driving (lock-up ON)	Approximately matches the engine speed.
ENG SPEED SIG	Engine running	Closely matches the tachometer reading.
SEC HYDR SEN	"N" position idle	0.8 - 1.0 V
PRI HYDR SEN	—	—
ATF TEMP SEN	When CVT fluid temperature is 20°C (68°F).	1.8 - 2.0 V
	When CVT fluid temperature is 80°C (176°F).	0.6 - 1.0 V
VIGN SEN	Ignition switch: ON	Battery voltage
VEHICLE SPEED	During driving	Approximately matches the speedometer reading.
PRI SPEED	During driving (lock-up ON)	Approximately matches the engine speed.
SEC SPEED	During driving	40 X Approximately matches the speedometer reading.
ENG SPEED	Engine running	Closely matches the tachometer reading.
GEAR RATIO	During driving	2.37 - 0.43
ACC PEDAL OPEN	Released accelerator pedal - Fully depressed accelerator pedal	0.0/8 - 8.0/8
SEC PRESS	"N" position idle	0.5 - 0.9 MPa
PRI PRESS	—	—
STM STEP	During driving	0 - 182 step
ISOLT1	Lock-up OFF	0.0 A
	Lock-up ON	0.7 A
ISOLT2	Release your foot from the accelerator pedal.	0.8 A
	Press the accelerator pedal all the way down.	0.0 A
ISOLT3	Secondary pressure low - Secondary pressure high.	0.8 - 0.0 A
SOLMON1	Lock-up OFF	0.0 A
	Lock-up ON	0.6 - 0.7 A
SOLMON2	"N" position idle	0.8 A
	When stalled	0.3 - 0.6 A
SOLMON3	"N" position idle	0.6 - 0.7 A
	When stalled	0.4 - 0.6 A
RANGE SW3M	Selector lever in "D" position	ON
	Selector lever in "P", "R" and "N" positions	OFF
RANGE SW4	Selector lever in "R" and "D" positions	ON
	Selector lever in "P" and "N" positions	OFF

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Item name	Condition	Display value (Approx.)
RANGE SW3	Selector lever in "D" position	ON
	Selector lever in "P", "R" and "N" positions	OFF
RANGE SW2	Selector lever in "N" and "D" positions	ON
	Selector lever in "P" and "R" positions	OFF
RANGE SW1	Selector lever in "R", "N" and "D" positions	ON
	Selector lever in "P" position	OFF
BRAKE SW	Depressed brake pedal	ON
	Released brake pedal	OFF
IDLE SW	Released accelerator pedal	ON
	Fully depressed accelerator pedal	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)	ON
	Other than the above	OFF
INDDRNG	Selector lever in "D" position	ON
	Selector lever in other positions	OFF
INDNRNG	Selector lever in "N" position	ON
	Selector lever in other positions	OFF
INDRRNG	Selector lever in "R" position	ON
	Selector lever in other positions	OFF
INDPRNG	Selector lever in "P" position	ON
	Selector lever in other positions	OFF
SMCOIL D	During driving	Changes ON ⇔ OFF.
SMCOIL C	During driving	Changes ON ⇔ OFF.
SMCOIL B	During driving	Changes ON ⇔ OFF.
SMCOIL A	During driving	Changes ON ⇔ OFF.
LUSEL SOL OUT	Selector lever in "P" and "N" positions	ON
	Wait at least for 5 seconds with the selector lever in "R" and "D" positions	OFF
STRTR RLY OUT	Selector lever in "P" and "N" positions	ON
	Selector lever in other positions	OFF
STRTR RLY MON	Selector lever in "P" and "N" positions	ON
	Selector lever in other positions	OFF
VDC ON	VDC operate	ON
	Other conditions	OFF
TCS ON	TCS operate	ON
	Other conditions	OFF
ABS ON	ABS operate	ON
	Other conditions	OFF

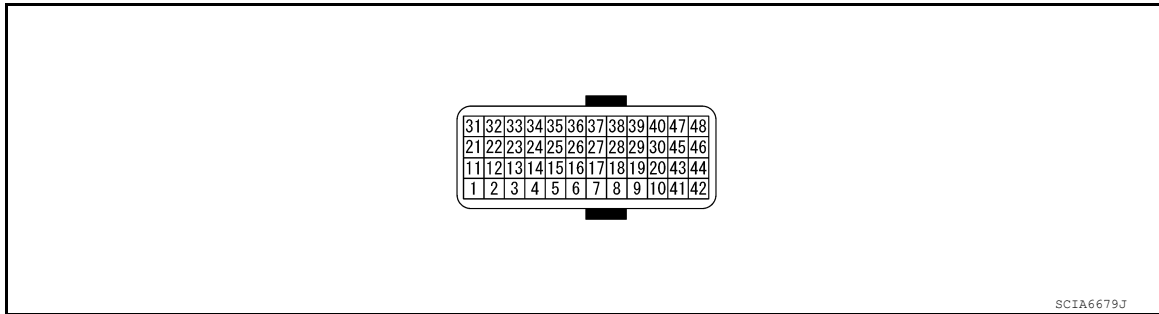
TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Item name	Condition	Display value (Approx.)
RANGE	Selector lever in "N" and "P" position.	N·P
	Selector lever in "R" position.	R
	Selector lever in "D" position.	D
M GEAR POS	During driving	1, 2, 3, 4, 5, 6

TERMINAL LAYOUT



PHYSICAL VALUES

Terminal No.		Description		Condition		Value (Approx.)
+	-	Signal name	Input/Output			
1 (R)	Ground	Transmission range switch 2	Output	Ignition switch ON	Selector lever in “N”, “D” positions	0 V
					Selector lever in other positions	10.0 V – Battery voltage
2 (GR)	Ground	Transmission range switch 3	Output		Selector lever in “D” position	0 V
					Selector lever in other positions	8.0 V – Battery voltage
3 (Y)	Ground	Transmission range switch 4	Output		Selector lever in “R”, “D” positions	0 V
					Selector lever in other positions	10.0 V – Battery voltage
4 (SB)	Ground	Transmission range switch 3 (monitor)	Output		Selector lever in “D” position	0 V
					Selector lever in other positions	8.0 V – Battery voltage
5 (B)	Ground	Ground	Output	Always	0 V	
7 (W)	Ground	Sensor ground	Input	Always	0 V	
8 (G)	—	CLOCK	—	—	—	
9 (P)	—	CHIP SELECT	—	—	—	
10 (O)	—	DATA I/O	—	—	—	
11 (V)	Ground	Transmission range switch 1	Output	Ignition switch ON	Selector lever in “R”, “N”, “D” positions	0 V
					Selector lever in other position	Battery voltage

Terminal No.		Description		Condition		Value (Approx.)
+	-	Signal name	Input/Output			
13 (BR)	Ground	CVT fluid temperature sensor	Output	Ignition switch ON	When CVT fluid temperature is 20°C (68°F)	2.0 V
					When CVT fluid temperature is 80°C (176°F)	1.0 V
14*1 (W)	—	—	—	—		—
15 (L)	Ground	Secondary pressure sensor	Input	“N” position idle		1.0 V
19 (G)	Ground	Back-up lamp relay	Input	Ignition switch ON	Selector lever in “R” position	0 V
					Selector lever in other positions	Battery voltage
20 (BR)	Ground	Starter relay	Input	Ignition switch ON	Selector lever in “N”, “P” positions	Battery voltage
					Selector lever in other positions	0 V
25 (LG)	Ground	Sensor ground	Input	Always		0 V
26 (O)	Ground	Sensor power	Input	Ignition switch ON	—	5.0 V
				Ignition switch OFF	—	0 V
27 (G)	Ground	Step motor D	Input	CAUTION: Connect the diagnosis data link cable to the vehicle diagnosis connector.		10.0 msec
28 (W)	Ground	Step motor C	Input			30.0 msec
29 (BR)	Ground	Step motor B	Input			10.0 msec
30 (P)	Ground	Step motor A	Input			30.0 msec
31 (P)	—	CAN-L	Inout/Output	—		—
32 (L)	—	CAN-H	Inout/Output	—		—
33 (O)	Ground	Primary speed sensor	Input	When driving [“M1” position, 20 km/h (12 MPH)]		655 Hz
34 (V)	Ground	Secondary speed sensor	Input	When driving [“D” position, 20 km/h (12 MPH)]		390 Hz
37 (R)	Ground	Lock-up select solenoid valve	Output	Ignition switch ON	Selector lever in “P”, “N” positions	Battery voltage
					Wait at least for 5 seconds with the selector lever in “R”, “D” positions.	0 V
38 (SB)	Ground	Torque converter clutch solenoid valve	Output	When vehicle cruises in “D” position	When CVT performs lock-up	6.0 V
					When CVT does not perform lock-up	1.0 V
39 (Y)	Ground	Secondary pressure solenoid valve	Output	“P”, “N” position idle	Release your foot from the accelerator pedal.	5.0 – 7.0 V
					Press the accelerator pedal all the way down.	3.0 – 4.0 V
40 (GR)	Ground	Line pressure solenoid valve	Output		Release your foot from the accelerator pedal.	5.0 – 7.0 V
					Press the accelerator pedal all the way down.	1.0 – 3.0 V

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

Terminal No.		Description		Condition		Value (Approx.)
+	-	Signal name	Input/Output			
42 (B)	Ground	Ground	Output	Always		0 V
46 (BR)	Ground	Power supply	Input	Ignition switch ON	—	Battery voltage
				Ignition switch OFF	—	0 V
47 (V)	Ground	Power supply (memory back-up)	Input	Always		Battery voltage
48 (BR)	Ground	Power supply	Input	Ignition switch ON	—	Battery voltage
				Ignition switch OFF	—	0 V

*1: This circuit is not used.

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

Fail-safe

INFOID:000000006390592

The TCM has an electrical fail-safe mode. This mode makes it possible to operate even if there is an error in a main electronic control input/output signal circuit.

FAIL-SAFE FUNCTION

If any malfunction occurs in a sensor or solenoid, this function controls the CVT to make driving possible.

Secondary Speed Sensor

The shift pattern is changed in accordance with throttle position when an unexpected signal is sent from the secondary speed sensor to the TCM. The manual mode position is inhibited, and the transaxle is put in "D".

Primary Speed Sensor

The shift pattern is changed in accordance with throttle position and secondary speed (vehicle speed) when an unexpected signal is sent from the primary speed sensor to the TCM. The manual mode position is inhibited, and the transaxle is put in "D".

Transmission Range Switch

If an unexpected signal is sent from the transmission range switch to the TCM, the transaxle is put in "D".

Manual Mode Switch

If an unexpected signal is sent from the manual mode switch to the TCM, the transaxle is put in "D".

CVT Fluid Temperature Sensor

If an unexpected signal is sent from the CVT fluid temperature sensor to the TCM, the gear ratio in use before receiving the unexpected signal is maintained or the gear ratio is controlled to keep engine speed under 2,800 rpm.

Secondary Pressure Sensor

- If an unexpected signal is sent from the secondary pressure sensor to the TCM, the secondary pressure feedback control is stopped and the offset value obtained before the non-standard condition occurs is used to control line pressure.
- If secondary pressure sensor error signal is input to TCM, secondary pressure feedback control stops, but line pressure is controlled normally.

Line Pressure Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the line pressure solenoid is turned OFF to achieve the maximum fluid pressure.

Secondary Pressure Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the secondary pressure solenoid is turned OFF to achieve the maximum fluid pressure.

Torque Converter Clutch Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the torque converter clutch solenoid is turned OFF to cancel the lock-up.

Step Motor

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

If an unexpected signal is sent from the step motor to the TCM, the step motor coil phases "A" through "D" are all turned OFF to hold the gear ratio used right before the non-standard condition occurred.

Lock-up Select Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the CVT lock-up select solenoid is turned OFF to cancel the lock-up.

TCM Power Supply (Memory Back-up)

Transaxle assembly is protected by limiting the engine torque when the memory back-up power supply (for controlling) from the battery is not supplied to TCM. Normal statues is restored when turning the ignition switch OFF to ON after the normal power supply.

DTC Inspection Priority Chart

INFOID:0000000006390593

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

NOTE:

If DTC "U1000" is displayed with other DTCs, first perform the trouble diagnosis for DTC "U1000". Refer to [TM-129](#).

Priority	Detected items (DTC)
1	U1000
2	Except above

DTC Index

INFOID:0000000006390594

NOTE:

If DTC "U1000" is displayed with other DTCs, first perform the trouble diagnosis for DTC "U1000". Refer to [TM-129](#).

TCM self-diagnosis "TRANSMISSION" with CONSULT-III	Items (CONSULT-III screen terms)	Reference
P0615	STARTER RELAY	TM-130
P0703	BRAKE SWITCH B	TM-132
P0705	T/M RANGE SENSOR A	TM-135
P0710	FLUID TEMP SENSOR A	TM-138
P0715	INPUT SPEED SENSOR A	TM-141
P0720	OUTPUT SPEED SENSOR	TM-144
P0725	ENGINE SPEED	TM-148
P0730	INCORRECT GR RATIO	TM-149
P0740	TORQUE CONVERTER	TM-150
P0744	TORQUE CONVERTER	TM-152
P0745	PC SOLENOID A	TM-154
P0746	PC SOLENOID A	TM-156
P0776	PC SOLENOID B	TM-158
P0778	PC SOLENOID B	TM-160
P0826	UP/DOWN SHIFT SWITCH	TM-162
P0840	FLUID PRESS SEN/SW A	TM-165
P0841	FLUID PRESS SEN/SW A	TM-168
P0868	FLUID PRESS LOW	TM-170
P1701	TCM	TM-172
P1705	TP SENSOR	TM-175
P1722	VEHICLE SPEED	TM-176

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F09B]

TCM self-diagnosis	Items (CONSULT-III screen terms)	Reference
"TRANSMISSION" with CONSULT-III		
P1723	SPEED SENSOR	TM-178
P1726	THROTTLE CONTROL SIG	TM-180
P1740	SLCT SOLENOID	TM-181
P1745	LINE PRESS CONTROL	TM-183
P1777	STEP MOTOR	TM-184
P1778	STEP MOTOR	TM-187
U1000	CAN COMM CIRCUIT	TM-129

A

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TM

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J

K

L

M

N

O

P

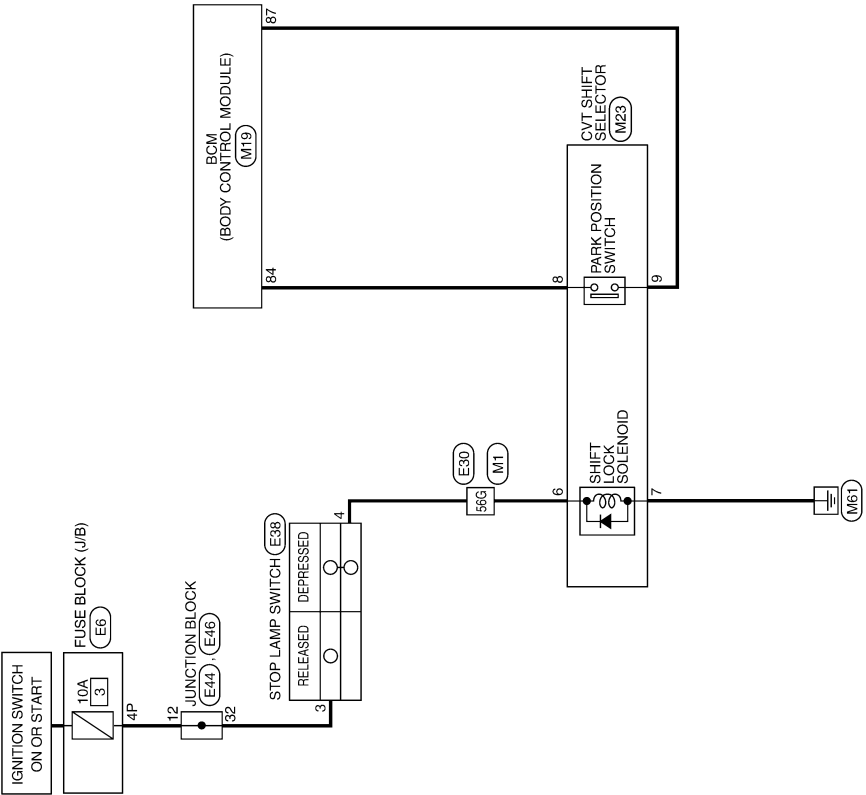
WIRING DIAGRAM

CVT SHIFT LOCK SYSTEM – VQ35DE

Wiring Diagram

INFOID:000000006390595

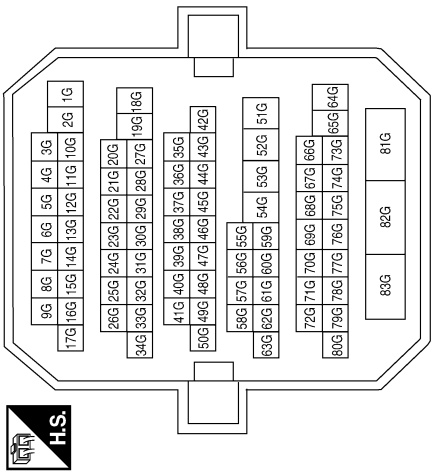
CVT SHIFT LOCK SYSTEM - VQ35DE



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CVT SHIFT LOCK SYSTEM CONNECTORS - VQ35DE

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	56G	Color of Wire	R/W	Signal Name
				-

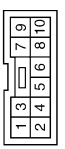
Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60
99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80

Terminal No.	84	Color of Wire	Y/R	Signal Name
				AT_DEVICE_OUT
	87		G/B	SHIFT_P

Connector No.	M23
Connector Name	CVT SHIFT SELECTOR
Connector Color	WHITE



Connector No.	E6
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	6	Color of Wire	R/W	Signal Name
	7		B	S/LOCK_SOL_INPUT
	8		Y/R	S/LOCK_SOL_GND
	9		G/B	DETENT_KEY_SW
				DETENT_KEY_SW

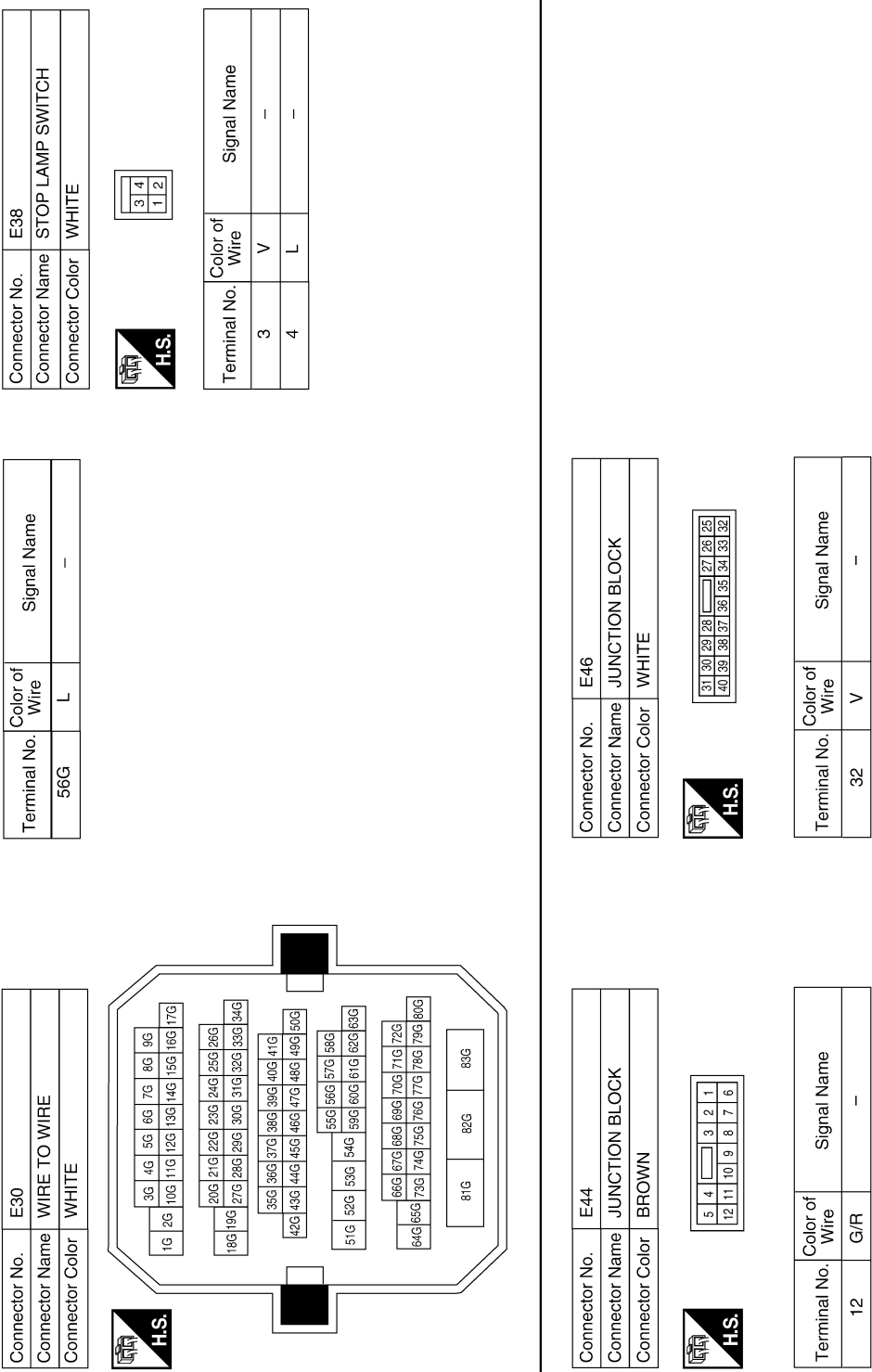
Terminal No.	4P	Color of Wire	G/R	Signal Name
				-

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CVT SHIFT LOCK SYSTEM – VQ35DE

< WIRING DIAGRAM >

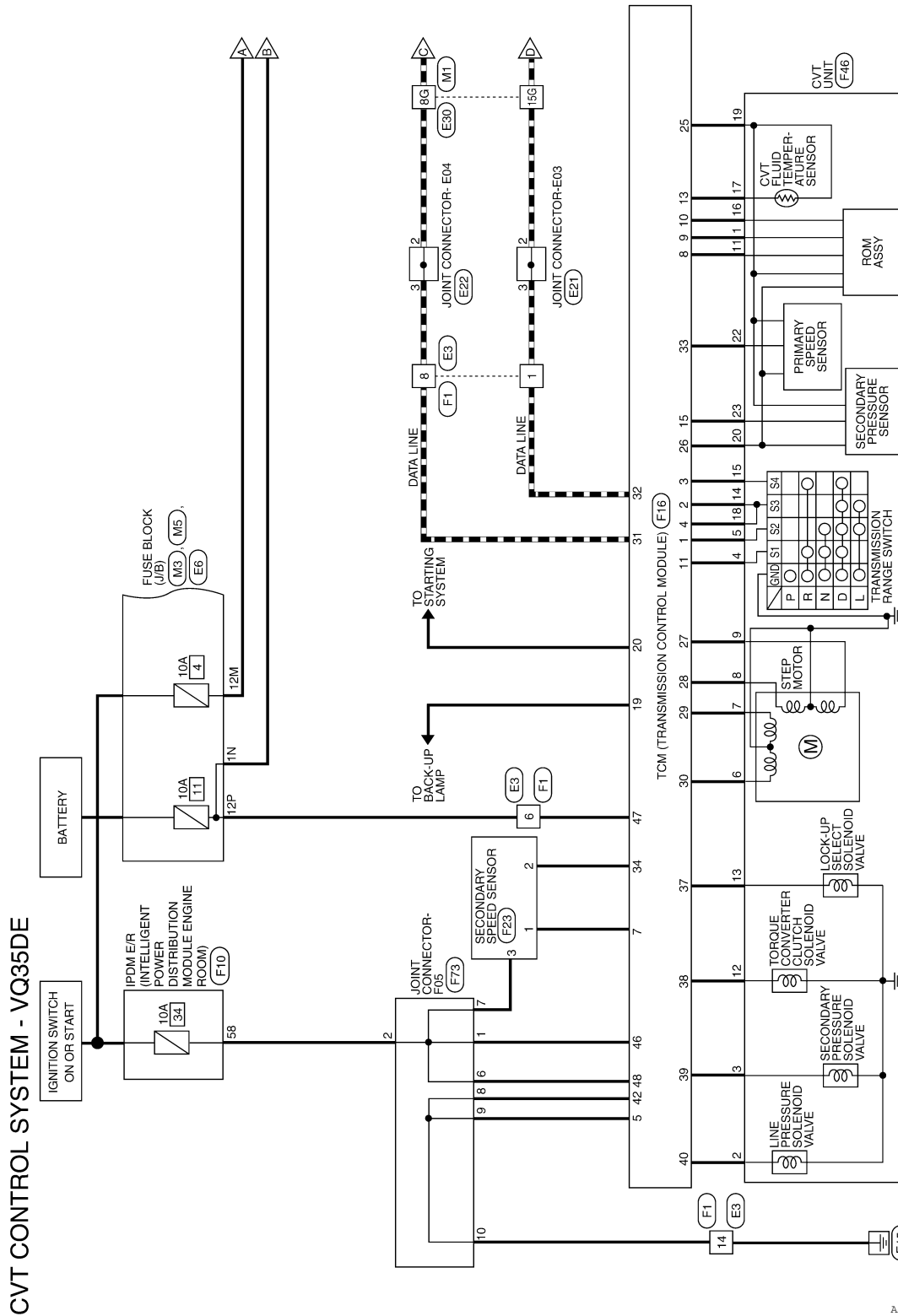
[CVT: RE0F09B]



CVT CONTROL SYSTEM – VQ35DE

Wiring Diagram

INFOID:000000006390596



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[CVT: RE0F09B]

[illegible]

2011 Altima GCC

CVT CONTROL SYSTEM – VQ35DE

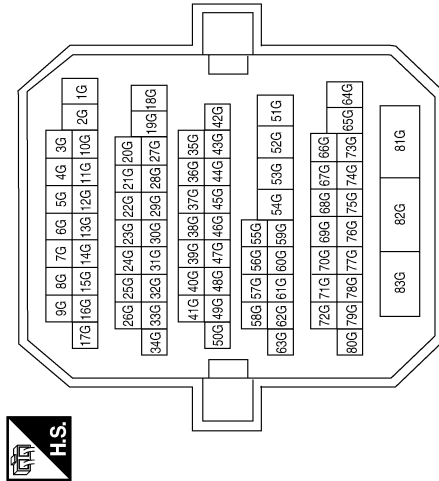
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[CVT: RE0F09B]

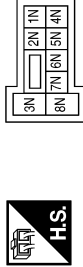
CVT CONTROL SYSTEM CONNECTORS - VQ35DE

Connector No.	M1
Connector Name	WIRE TO WIRE
Connector Color	WHITE

Terminal No.	Color of Wire	Signal Name
8G	P	–
15G	L	–

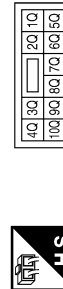


Connector No.	M3
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1N	W/L	–
2N	G	–

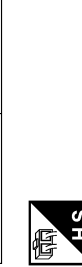
Connector No.	M4
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Connector No.	M5
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



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



Terminal No.	Color of Wire	Signal Name
3Q	O/L	–
6Q	Y/R	–

Terminal No.	Color of Wire	Signal Name
12M	O	–

Terminal No.	Color of Wire	Signal Name
26	O/L	STOP_LAMP_HIGH_SW

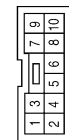
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CVT CONTROL SYSTEM – VQ35DE

< WIRING DIAGRAM >

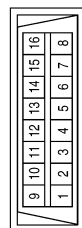
[CVT: RE0F09B]

Connector No.	M23
Connector Name	CVT SHIFT SELECTOR
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	LG/R	MT_MODE
2	BR	M_DOWN
3	W	M_UP
4	B	GND
5	G	AT_MODE

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



Terminal No.	Color of Wire	Signal Name
4	B	GND
5	B	GND
6	L	CAN-H
8	G	IGN_SW
14	P	CAN-L
16	Y/R	BATT

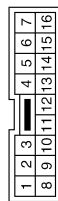
Connector No.	M19
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



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

Terminal No.	Color of Wire	Signal Name
78	P	CAN-L
79	L	CAN-H

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	-
6	V	-
8	P	-
14	B	-

Terminal No.	Color of Wire	Signal Name
1	W/L	BAT
2	O	IGN
3	B	GND
4	B	GND
21	L	CAN-H
22	P	CAN-L
23	B	GND
37	G	NOT M RANGE
38	BR	AT SHIFT DOWN
39	W	AT SHIFT UP
40	LG/R	M RANGE

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



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

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CVT CONTROL SYSTEM – VQ35DE

< WIRING DIAGRAM >

[CVT: RE0F09B]

Connector No.	E6
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
2P	Y	-
8P	R	-
12P	V	-

Connector No.	E21
Connector Name	JOINT CONNECTOR-E03
Connector Color	WHITE



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

Connector No.	E22
Connector Name	JOINT CONNECTOR-E04
Connector Color	WHITE



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

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE

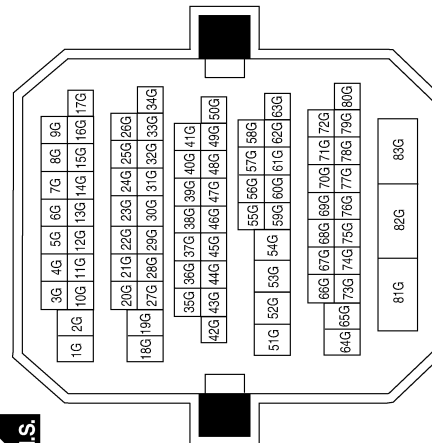


Terminal No.	Color of Wire	Signal Name
8G	P	-
15G	L	-

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



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



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CVT CONTROL SYSTEM – VQ35DE

< WIRING DIAGRAM >

[CVT: RE0F09B]

Connector No.	E57
Connector Name	STOP LAMP RELAY-1
Connector Color	BLUE



Terminal No.	Color of Wire	Signal Name
1	LG	–
2	B	–
3	Y	–
5	W	–

Connector No.	E56
Connector Name	JOINT CONNECTOR-E14
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	LG	–
4	LG	–

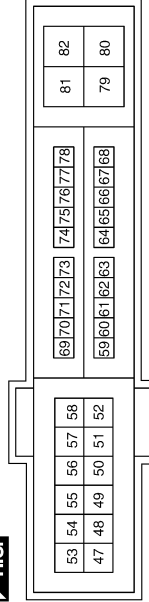
Connector No.	E55
Connector Name	JOINT CONNECTOR-E07
Connector Color	WHITE



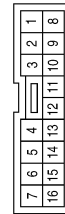
Terminal No.	Color of Wire	Signal Name
1	W	–
3	R	–
4	R	–

Terminal No.	58
Color of Wire	BR
Signal Name	AT ECU

Connector No.	F10
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
1	L	–
6	V	–
8	P	–
14	B	–

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CVT CONTROL SYSTEM – VQ35DE

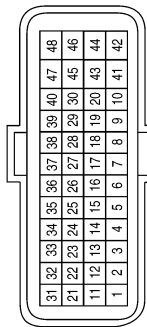
< WIRING DIAGRAM >

[CVT: RE0F09B]

Terminal No.	Color of Wire	Signal Name
25	LG	SENSOR GND
26	O	SENS POWER SOURCE
27	G	S/M-D
28	W	S/M-C
29	BR	S/M-B
30	P	S/M-A
31	P	CAN-L
32	L	CAN-H
33	O	PRI SPEED SENSOR
34	V	SEC SPEED SENSOR
35	–	–
36	–	–
37	R	L/U&SELECT-ON/OFF SOL
38	SB	L/U&SELECT-LINEAR SOL
39	Y	SEC LINEAR SOL
40	GR	PL LINEAR SOL
41	–	–
42	B	GND
43	–	–
44	–	–
45	–	–
46	BR	VIGN
47	V	BATT
48	BR	VIGN

Terminal No.	Color of Wire	Signal Name
1	R	R RANGE SW
2	GR	N RANGE SW
3	Y	D RANGE SW
4	SB	L RANGE SW
5	B	GND
6	–	–
7	W	SENSOR GND
8	G	CLOCK (SEL2)
9	P	CHIP SELECT (SEL1)
10	O	DATA I/O (SEL3)
11	V	P RANGE SW
12	–	–
13	BR	ATF TEMP SENS
14	–	–
15	L	SEC OIL PRESS SENS
16	–	–
17	–	–
18	–	–
19	G	REV LAMP RLY
20	W	ST RLY
21	–	–
22	–	–
23	–	–
24	–	–

Connector No.	F16
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



AADIA0238GB

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CVT CONTROL SYSTEM – VQ35DE

< WIRING DIAGRAM >

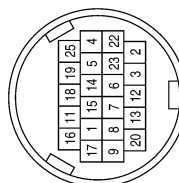
[CVT: RE0F09B]

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



Terminal No.	Color of Wire	Signal Name
1	W	SENSOR GND
2	V	SEC SPEED SENSOR
3	BR	VIGN

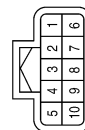
Connector No.	F46
Connector Name	CVT UNIT
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	P	CHIP SELECT
2	GR	PL LINEAR SOL
3	Y	SEC LINEAR SOL
4	V	INH SW 1
5	R	INH SW 2
6	P	S/M-COIL A
7	BR	S/M-COIL B

Terminal No.	Color of Wire	Signal Name
8	W	S/M-COIL C
9	G	S/M-COIL D
11	G	CLOCK
12	SB	L/U&SELECT-LINEAR SOL
13	R	L/U&SELECT-ON/OFF SOL
14	GR	INH SW 3
15	Y	INH SW 4
16	O	DATA I/O
17	BR	ATF TEMP SENSOR
18	SB	INH SW 3 M
19	LG	SENSOR GND
20	O	SENSOR POWER SOURCE
22	O	PRI SPEED SENSOR
23	L	SEC OIL PRESSURE SENSOR
25	–	–

Connector No.	F73
Connector Name	JOINT CONNECTOR-F05
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	BR	–
2	BR	–
6	BR	–
7	BR	–
8	B	–
9	B	–
10	B	–

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

SYMPTOM DIAGNOSIS

SYSTEM SYMPTOM

Symptom Table

INFOID:000000006390597

The diagnostics item numbers show the sequence for inspection. Inspect in order from item 1.

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
1	Shift Shock	Large shock. ("N"→ "D" position)	ON vehicle	1. Engine idle speed	EC-334
				2. Engine speed signal	TM-148
				3. Accelerator pedal position sensor	TM-175
				4. CVT position	TM-238
				5. CVT fluid temperature sensor	TM-138
				6. CAN communication line	TM-129
				7. CVT fluid level and state	TM-225
				8. Line pressure test	TM-232
				9. Torque converter clutch solenoid valve	TM-150
				10. Lock-up select solenoid valve	TM-181
				11. Transmission range switch	TM-135
			OFF vehicle	12. Forward clutch	TM-247
				13. Control valve	
2	Shift Shock	Large shock. ("N"→ "R" position)	ON vehicle	1. Engine idle speed	EC-334
				2. Engine speed signal	TM-148
				3. Accelerator pedal position sensor	TM-175
				4. CVT position	TM-238
				5. CVT fluid temperature sensor	TM-138
				6. CAN communication line	TM-129
				7. CVT fluid level and state	TM-225
				8. Line pressure test	TM-232
				9. Torque converter clutch solenoid valve	TM-150
				10. Lock-up select solenoid valve	TM-181
				11. Transmission range switch	TM-135
			OFF vehicle	12. Reverse brake	TM-247
				13. Control valve	
3	Shift Shock	Shock is too large for lock-up.	ON vehicle	1. CVT position	TM-238
				2. Engine speed signal	TM-148
				3. CAN communication line	TM-129
				4. CVT fluid level and state	TM-225
			OFF vehicle	5. Torque converter	TM-247
				6. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
4	Slips/Will Not Engage	Vehicle cannot be started from "D" position.	ON vehicle	1. CVT fluid level and state	TM-225
				2. CVT position	TM-238
				3. CAN communication line	TM-129
				4. Line pressure test	TM-232
				5. Stall test	TM-230
				6. Step motor	TM-184
				7. Primary speed sensor	TM-141
				8. Secondary speed sensor	TM-144
				9. Accelerator pedal position sensor	TM-175
				10. CVT fluid temperature sensor	TM-138
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Oil pump assembly	TM-247
				14. Forward clutch	
				15. Control valve	
				16. Parking components	
5	Slips/Will Not Engage	Vehicle cannot be started from "R" position.	ON vehicle	1. CVT fluid level and state	TM-225
				2. CVT position	TM-238
				3. CAN communication line	TM-129
				4. Line pressure test	TM-232
				5. Stall test	TM-230
				6. Step motor	TM-184
				7. Primary speed sensor	TM-141
				8. Secondary speed sensor	TM-144
				9. Accelerator pedal position sensor	TM-175
				10. CVT fluid temperature sensor	TM-138
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Oil pump assembly	TM-247
				14. Reverse brake	
				15. Control valve	
				16. Parking components	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
6	Slips/Will Not Engage	Does not lock-up.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Engine speed signal	TM-148
				4. Primary speed sensor	TM-141
				5. Torque converter clutch solenoid valve	TM-150
				6. CAN communication line	TM-129
				7. Stall test	TM-230
				8. Step motor	TM-184
				9. Transmission range switch	TM-135
				10. Lock-up select solenoid valve	TM-181
				11. CVT fluid temperature sensor	TM-138
				12. Secondary speed sensor	TM-144
				13. Secondary pressure sensor	TM-165
			OFF vehicle	14. Torque converter	TM-247
				15. Oil pump assembly	
				16. Control valve	
7	Slips/Will Not Engage	Does not hold lock-up condition.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Engine speed signal	TM-148
				4. Primary speed sensor	TM-141
				5. Torque converter clutch solenoid valve	TM-150
				6. CAN communication line	TM-129
				7. Stall test	TM-230
				8. Step motor	TM-184
				9. Transmission range switch	TM-135
				10. Lock-up select solenoid valve	TM-181
				11. CVT fluid temperature sensor	TM-138
				12. Secondary speed sensor	TM-144
				13. Secondary pressure sensor	TM-165
			OFF vehicle	14. Torque converter	TM-247
				15. Oil pump assembly	
				16. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
8		Lock-up is not released.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Engine speed signal	TM-148
				4. Primary speed sensor	TM-141
				5. Torque converter clutch solenoid valve	TM-150
				6. CAN communication line	TM-129
				7. Stall test	TM-230
			OFF vehicle	8. Torque converter	TM-247
				9. Oil pump assembly	
				10. Control valve	
9	Slips/Will Not Engage	With selector lever in "D" position, acceleration is extremely poor.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Stall test	TM-230
				4. Accelerator pedal position sensor	TM-175
				5. CAN communication line	TM-129
				6. Transmission range switch	TM-135
				7. CVT position	TM-238
				8. Step motor	TM-184
				9. Primary speed sensor	TM-141
				10. Secondary speed sensor	TM-144
				11. Accelerator pedal position sensor	TM-175
				12. Secondary pressure sensor	TM-165
				13. CVT fluid temperature sensor	TM-138
				14. Power supply	TM-172
			OFF vehicle	15. Torque converter	TM-247
				16. Oil pump assembly	
				17. Forward clutch	
				18. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
10	Slips/Will Not Engage	With selector lever in "R" position, acceleration is extremely poor.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Stall test	TM-230
				4. Accelerator pedal position sensor	TM-175
				5. CAN communication line	TM-129
				6. Transmission range switch	TM-135
				7. CVT position	TM-238
				8. Step motor	TM-184
				9. Primary speed sensor	TM-141
				10. Secondary speed sensor	TM-144
				11. Accelerator pedal position sensor	TM-175
				12. Secondary pressure sensor	TM-165
				13. CVT fluid temperature sensor	TM-138
				14. Power supply	TM-172
			OFF vehicle	15. Torque converter	TM-247
				16. Oil pump assembly	
				17. Reverse brake	
				18. Control valve	
11	Slips at lock-up.		ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Engine speed signal	TM-148
				4. Primary speed sensor	TM-141
				5. Torque converter clutch solenoid valve	TM-150
				6. CAN communication line	TM-129
				7. Stall test	TM-230
				8. Step motor	TM-184
				9. Transmission range switch	TM-135
				10. Lock-up select solenoid valve	TM-181
				11. CVT fluid temperature sensor	TM-138
				12. Secondary speed sensor	TM-144
				13. Secondary pressure sensor	TM-165
			OFF vehicle	14. Torque converter	TM-247
				15. Oil pump assembly	
				16. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
12	Other	No creep at all.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Accelerator pedal position sensor	TM-175
				4. Transmission range switch	TM-135
				5. CAN communication line	TM-129
				6. Stall test	TM-230
				7. CVT position	TM-238
				8. Step motor	TM-184
				9. Primary speed sensor	TM-141
				10. Secondary speed sensor	TM-144
				11. Accelerator pedal position sensor	TM-175
				12. CVT fluid temperature sensor	TM-138
				13. Secondary pressure sensor	TM-165
				14. Power supply	TM-172
			OFF vehicle	15. Torque converter	TM-247
				16. Oil pump assembly	
				17. Gear system	
				18. Forward clutch	
				19. Reverse brake	
				20. Control valve	
13		Vehicle cannot run in all positions.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Transmission range switch	TM-135
				4. Stall test	TM-230
				5. CVT position	TM-238
				6. Step motor	TM-184
				7. Primary speed sensor	TM-141
				8. Secondary speed sensor	TM-144
				9. Accelerator pedal position sensor	TM-175
				10. CVT fluid temperature sensor	TM-138
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Torque converter	TM-247
				14. Oil pump assembly	
				15. Gear system	
				16. Forward clutch	
				17. Reverse brake	
				18. Control valve	
				19. Parking components	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
14	Other	With selector lever in "D" position, driving is not possible.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Transmission range switch	TM-135
				4. Stall test	TM-230
				5. CVT position	TM-238
				6. Step motor	TM-184
				7. Primary speed sensor	TM-141
				8. Secondary speed sensor	TM-144
				9. Accelerator pedal position sensor	TM-175
				10. CVT fluid temperature sensor	TM-138
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Torque converter	TM-247
				14. Oil pump assembly	
				15. Gear system	
				16. Forward clutch	
				17. Control valve	
				18. Parking components	
15	Other	With selector lever in "R" position, driving is not possible.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Transmission range switch	TM-135
				4. Stall test	TM-230
				5. CVT position	TM-238
				6. Step motor	TM-184
				7. Primary speed sensor	TM-141
				8. Secondary speed sensor	TM-144
				9. Accelerator pedal position sensor	TM-175
				10. CVT fluid temperature sensor	TM-138
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Torque converter	TM-247
				14. Oil pump assembly	
				15. Gear system	
				16. Reverse brake	
				17. Control valve	
				18. Parking components	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
16	Other	Judder occurs during lock-up.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Engine speed signal	TM-148
				3. Primary speed sensor	TM-141
				4. Secondary speed sensor	TM-144
				5. Accelerator pedal position sensor	TM-175
				6. CAN communication line	TM-129
				7. Torque converter clutch solenoid valve	TM-150
			OFF vehicle	8. Torque converter	TM-247
				9. Control valve	
17	Other	Strange noise in "D" position.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Engine speed signal	TM-148
				3. CAN communication line	TM-129
			OFF vehicle	4. Torque converter	TM-247
				5. Oil pump assembly	
				6. Gear system	
				7. Forward clutch	
				8. Control valve	
				9. Bearing	
18	Other	Strange noise in "R" position.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Engine speed signal	TM-148
				3. CAN communication line	TM-129
			OFF vehicle	4. Torque converter	TM-247
				5. Oil pump assembly	
				6. Gear system	
				7. Reverse brake	
				8. Control valve	
19	Other	Strange noise in "N" position.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Engine speed signal	TM-148
				3. CAN communication line	TM-129
			OFF vehicle	4. Torque converter	TM-247
				5. Oil pump assembly	
				6. Gear system	
				7. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
20	Other	Vehicle does not decelerate by engine brake.	ON vehicle	1. CVT fluid level and state	TM-225
				2. CVT position	TM-238
				3. CAN communication line	TM-129
				4. Step motor	TM-184
				5. Primary speed sensor	TM-141
				6. Secondary speed sensor	TM-144
				7. Line pressure test	TM-232
				8. Engine speed signal	TM-148
				9. Accelerator pedal position sensor	TM-175
			OFF vehicle	10. Control valve	TM-247
21	Other	Maximum speed low.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Line pressure test	TM-232
				3. Accelerator pedal position sensor	TM-175
				4. CAN communication line	TM-129
				5. Stall test	TM-230
				6. Step motor	TM-184
				7. Primary speed sensor	TM-141
				8. Secondary speed sensor	TM-144
				9. Secondary pressure sensor	TM-165
				10. CVT fluid temperature sensor	TM-138
			OFF vehicle	11. Torque converter	TM-247
				12. Oil pump assembly	
				13. Gear system	
				14. Forward clutch	
				15. Control valve	
22	Other	With selector lever in "P" position, vehicle does not enter parking condition or, with selector lever in another position, parking condition is not cancelled.	ON vehicle	1. Transmission range switch	TM-135
				2. CVT position	TM-238
			OFF vehicle	3. Parking components	TM-247
23	Other	Vehicle runs with CVT in "P" position.	ON vehicle	1. Transmission range switch	TM-135
				2. CVT fluid level and state	TM-225
				3. CVT position	TM-238
			OFF vehicle	4. Parking components	TM-247
				5. Gear system	
				6. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
24		Vehicle runs with CVT in "N" position.	ON vehicle	1. Transmission range switch	TM-135
				2. CVT fluid level and state	TM-225
				3. CVT position	TM-238
			OFF vehicle	4. Gear system	TM-247
				5. Forward clutch	
				6. Reverse brake	
				7. Control valve	
25		Engine stall.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Engine speed signal	TM-148
				3. Primary speed sensor	TM-141
				4. Torque converter clutch solenoid valve	TM-150
				5. CAN communication line	TM-129
				6. Stall test	TM-230
				7. Secondary pressure sensor	TM-165
			OFF vehicle	8. Torque converter	TM-247
				9. Control valve	
26	Other	Engine stalls when selector lever shifted "N" → "D" or "R".	ON vehicle	1. CVT fluid level and state	TM-225
				2. Engine speed signal	TM-148
				3. Primary speed sensor	TM-141
				4. Torque converter clutch solenoid valve	TM-150
				5. CAN communication line	TM-129
				6. Stall test	TM-230
			OFF vehicle	7. Torque converter	TM-247
				8. Control valve	
27		Engine speed does not return to idle.	ON vehicle	1. CVT fluid level and state	TM-225
				2. Accelerator pedal position sensor	TM-175
				3. Secondary speed sensor	TM-144
				4. CAN communication line	TM-129
			OFF vehicle	5. Control valve	TM-247
28		CVT does not shift.	ON vehicle	1. CVT fluid level and state	TM-225
				2. CVT position	TM-238
				3. Line pressure test	TM-232
				4. Engine speed signal	TM-148
				5. Accelerator pedal position sensor	TM-175
				6. CAN communication line	TM-129
				7. Primary speed sensor	TM-141
				8. Secondary speed sensor	TM-144
				9. Step motor	TM-184
			OFF vehicle	10. Control valve	TM-247
				11. Oil pump assembly	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F09B]

No.	Item	Symptom	Condition	Diagnostic Item	Reference page
29	Other	Engine does not start in “N” or “P” position.	ON vehicle	1. Ignition switch and starter	PG-75, STR-38
				2. CVT position	TM-238
				3. Transmission range switch	TM-135
30		Engine starts in positions other than “N” or “P”.	ON vehicle	1. Ignition switch and starter	PG-75, STR-38
				2. CVT position	TM-238
				3. Transmission range switch	TM-135

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PRECAUTION

PRECAUTIONS

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

INFOID:000000006390598

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

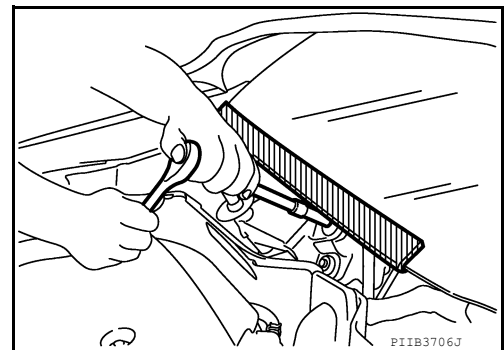
WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least 3 minutes before performing any service.

Precaution for Procedure without Cowl Top Cover

INFOID:000000006390599

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



Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000006390600

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NVIS/IVIS (NISSAN/INFINITI VEHICLE IMMOBILIZER SYSTEM - NATS).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NVIS/IVIS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

PRECAUTIONS

< PRECAUTION >

[CVT: RE0F09B]

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

Precaution for TCM and Transaxle Assembly Replacement

INFOID:000000006390601

CAUTION:

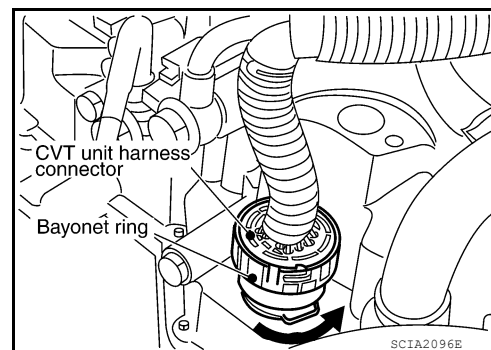
To replace TCM and transaxle assembly, refer to [TM-91, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly"](#).

Removal and Installation Procedure for CVT Unit Connector

INFOID:000000006390602

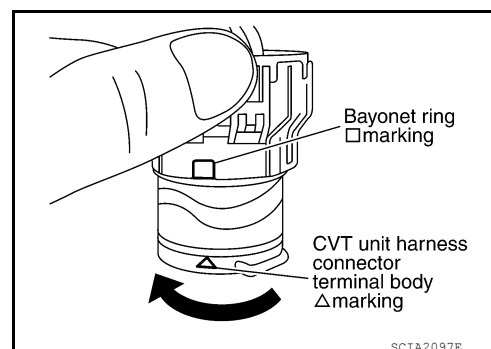
REMOVAL

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



INSTALLATION

1. Align CVT unit harness connector terminal body marking with bayonet ring marking, insert CVT unit harness connector, and then rotate bayonet ring clockwise.

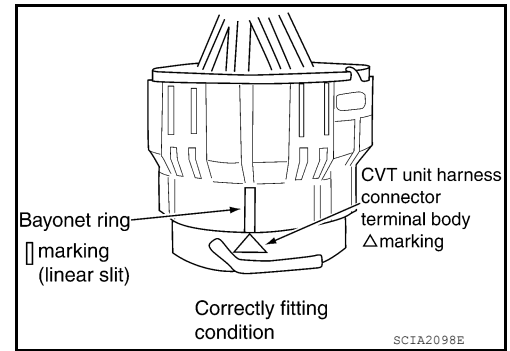


PRECAUTIONS

< PRECAUTION >

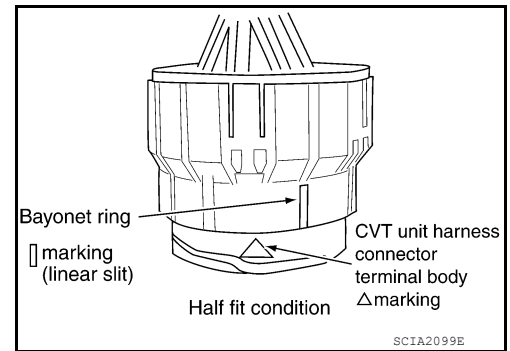
[CVT: RE0F09B]

2. Rotate bayonet ring clockwise until CVT unit harness connector terminal body marking is aligned with the bayonet ring marking (linear slit) as shown.



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.
- Do not mistake the slit of bayonet ring for other dent portion.



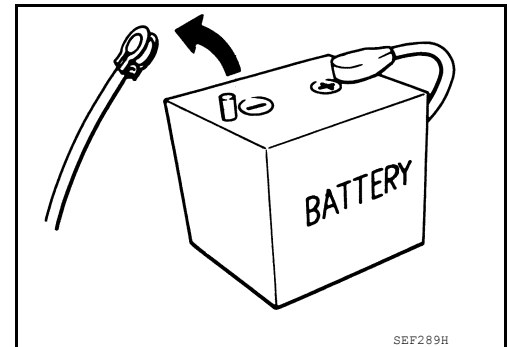
Precaution

INFOID:000000006390603

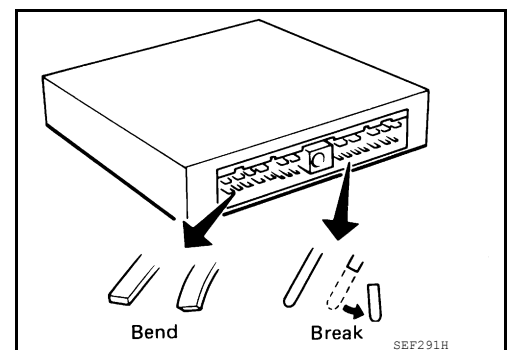
NOTE:

If any malfunction occurs in the RE0F09A model transaxle, replace the entire transaxle assembly.

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



- When connecting or disconnecting pin connectors into or from TCM, take care not to damage pin terminals (bend or break).
When connecting pin connectors make sure that there are not any bends or breaks on TCM pin terminal.

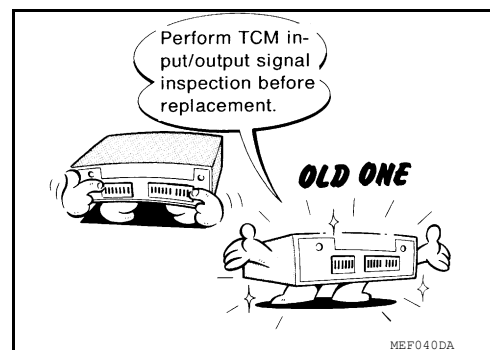


PRECAUTIONS

< PRECAUTION >

[CVT: RE0F09B]

- Before replacing TCM, perform TCM input/output signal inspection and make sure whether TCM functions properly or not. [TM-191, "Reference Value"](#).



- After performing each TROUBLE DIAGNOSIS, perform "DTC Confirmation Procedure". If the repair is completed the DTC should not be displayed in the "DTC Confirmation Procedure".
- Always use the specified brand of CVT fluid. Refer to [TM-250, "General Specification"](#).
- Use lint-free paper, not cloth rags, during work.
- After replacing the CVT fluid, dispose of the waste oil using the methods prescribed by law, ordinance, etc.

Service Notice or Precaution

INFOID:000000006390604

CVT FLUID COOLER SERVICE

If CVT fluid contains friction material (clutches, brakes, etc.), or if a CVT is replaced, inspect and clean the CVT fluid cooler mounted in the radiator or replace the radiator. Flush cooler lines using cleaning solvent and compressed air after repair. For CVT fluid cooler cleaning procedure, refer to [TM-227, "Cleaning"](#). For radiator replacement, refer to [CO-38, "Removal and Installation"](#).

ATFTEMP COUNT Conversion Table

INFOID:000000006390605

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

PREPARATION

< PREPARATION >

[CVT: RE0F09B]

PREPARATION

PREPARATION

Special Service Tool

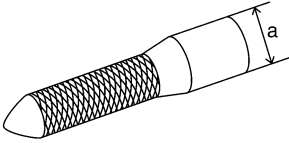

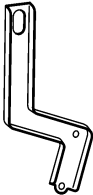

INFOID:000000006390606

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

Tool number (Kent-Moore No.) Tool name	Description
— (OTC3492) Oil pressure gauge set	Measuring line pressure
 <p>SCIA7531E</p>	

Commercial Service Tool

INFOID:000000006390607

Tool number Tool name	Description
31197CA000 Drive plate location guide	Installing transaxle assembly a: 14 mm (0.55 in) dia.
 <p>SCIA2013E</p>	
31093CA000 Slinger	Removing and installing transaxle assembly
 <p>SCIA2014E</p>	
31092CA000 Slinger	Removing and installing transaxle assembly
 <p>SCIA2015E</p>	
Power tool	Loosening nuts, screws and bolts
 <p>PIIB1407E</p>	

PERIODIC MAINTENANCE

CVT FLUID

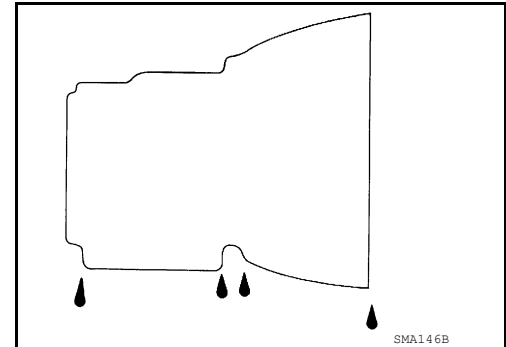
Inspection

INFOID:000000006390608

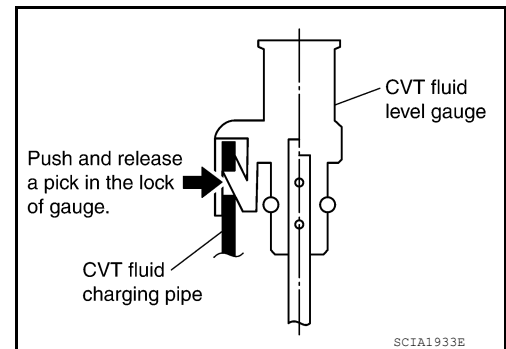
CHECKING CVT FLUID

Fluid level should be checked with the fluid warmed up to 50° to 80°C (122° to 176°F). The fluid level check procedure is as follows:

1. Check for fluid leakage.
2. With the engine warmed up, drive the vehicle in an urban area. When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50° to 80°C (122° to 176°F).
3. Park the vehicle on a level surface.
4. Apply parking brake firmly.
5. With engine at idle, while depressing brake pedal, move shift selector throughout the entire shift range.



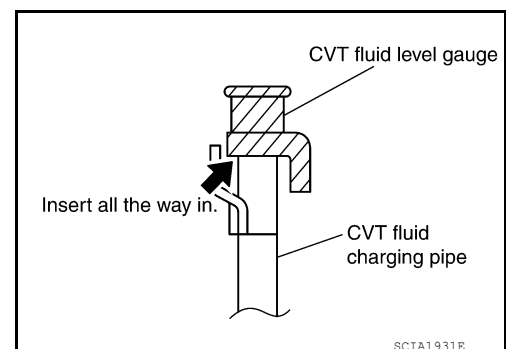
6. Pull out the CVT fluid level gauge from the CVT fluid charging pipe after pressing the tab on the CVT fluid level gauge to release the lock.



7. Wipe fluid off the CVT fluid level gauge. Insert the CVT fluid level gauge rotating 180° from the originally installed position, then securely push the CVT fluid level gauge until it meets the top end of the CVT fluid charging pipe.

CAUTION:

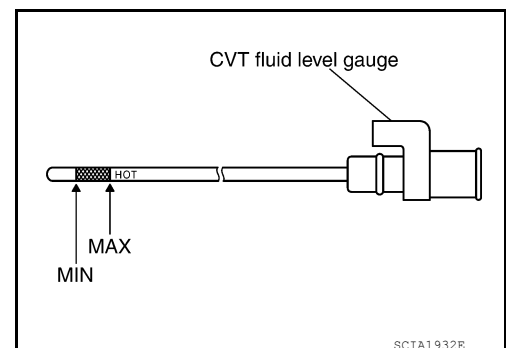
When wiping away the CVT fluid level gauge, always use lint-free paper, not a cloth rag.



8. Place the shift selector in "P" or "N" and make sure the fluid level is within the specified range.

CAUTION:

When reinstalling CVT fluid level gauge, insert it into the CVT fluid charging pipe and rotate it to the original installation position until it is securely locked.



CVT FLUID CONDITION

CVT FLUID

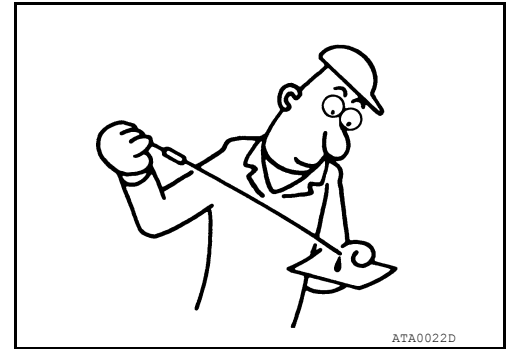
< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

Check CVT fluid condition.

- If CVT fluid is very dark or smells burned, check operation of CVT. Flush cooling system after repair of CVT.
- If CVT fluid contains frictional material (clutches, brakes, etc.), replace radiator and flush cooler line using cleaning solvent and compressed air after repair of CVT. Refer to [CO-38. "Removal and Installation"](#) (VQ35DE) and [TM-227. "Cleaning"](#).

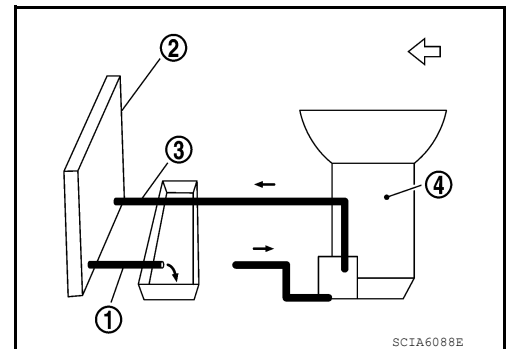
Fluid status	Conceivable cause	Required operation
Varnished (viscous varnish state)	Clutch, brake scorched	Replace the CVT fluid and check the CVT main unit and the vehicle for malfunctions (wire harnesses, cooler pipes, etc.)
Milky white or cloudy	Water in the fluid	Replace the CVT fluid and check for places where water is getting in.
Large amount of metal powder mixed in	Unusual wear of sliding parts within CVT	Replace the CVT fluid and check for improper operation of the CVT.



Changing

INFOID:000000006390609

1. Warm up CVT fluid by driving the vehicle for 10 minutes.
 - Vehicle front
 - Radiator (2)
 - CVT fluid cooler hose (inlet side) (3)
 - Transaxle assembly (4)
2. Drain CVT fluid from CVT fluid cooler hose (outlet side) (1) and refill with new CVT fluid at CVT fluid charging pipe with the engine running at idle speed.
3. Refill until new CVT fluid comes out from CVT fluid cooler hose (outlet side) (1).
About 30 to 50% extra fluid will be required for this procedure.



CVT fluid:

Genuine NISSAN CVT Fluid NS-2

Fluid capacity:

Approx. 10.2 ℓ (10-6/8 US qt, 9 Imp qt)

CAUTION:

- Use only Genuine NISSAN CVT Fluid NS-2. Do not mix with other fluid.
 - Using CVT fluid other than Genuine NISSAN CVT Fluid NS-2 will deteriorate in driveability and CVT durability, and may damage the CVT, which is not covered by the warranty.
 - When filling CVT fluid, take care not to scatter heat generating parts such as exhaust.
 - Delete CVT fluid deterioration date with CONSULT-III after changing CVT fluid. Refer to [TM-123. "CONSULT-III Function \(TRANSMISSION\)"](#).
4. Check fluid level and condition. Refer to [TM-225. "Inspection"](#).

FLUID CLOOR CLEANING

Cleaning

INFOID:000000006390610

Whenever an automatic transaxle is repaired, overhauled, or replaced, the CVT fluid cooler mounted in the radiator must be inspected and cleaned.

Metal debris and friction material, if present, can be trapped or become deposit in the CVT fluid cooler. This debris can contaminate the newly serviced CVT or, in severe cases, can block or restrict the flow of CVT fluid. In either case, malfunction of the newly serviced CVT may occur.

Debris, if present, may deposit as CVT fluid enters the cooler inlet. It will be necessary to back flush the cooler through the cooler outlet in order to flush out any built up debris.

CVT FLUID COOLER CLEANING PROCEDURE

NOTE:

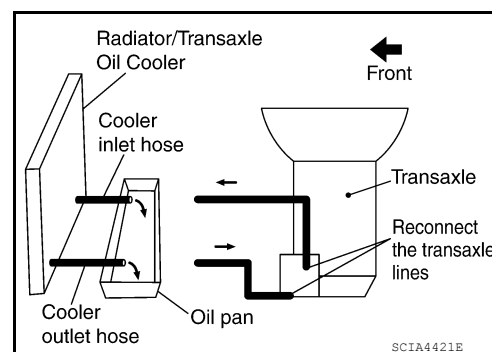
When removing components such as hoses, tubes/lines, etc., cap or plug openings to prevent fluid from spilling.

1. Position an oil pan under the transaxle's inlet and outlet cooler hoses.
2. Identify the inlet and outlet fluid cooler hoses.
3. Disconnect the fluid cooler inlet and outlet rubber hoses from the steel cooler tubes or bypass valve.

NOTE:

Replace the cooler hoses if rubber material from the hose remains on the tube fitting.

4. Allow any CVT fluid that remains in the cooler hoses to drain into the oil pan.

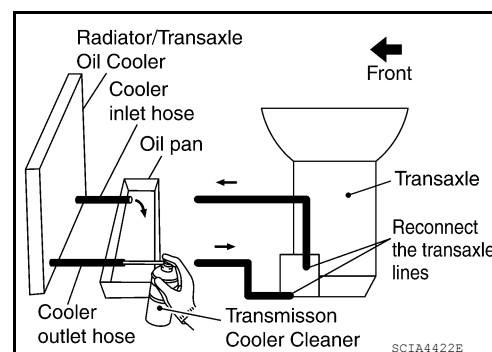


5. Insert the extension adapter hose of a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the cooler outlet hose.

CAUTION:

- Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.
- Spray Transmission Cooler Cleaner only with adequate ventilation.
- Avoid contact with eyes and skin.
- Do not breath vapors or spray mist.

6. Hold the hose and can as high as possible and spray Transmission Cooler Cleaner in a continuous stream into the cooler outlet hose until CVT fluid flows out of the cooler inlet hose for 5 seconds.



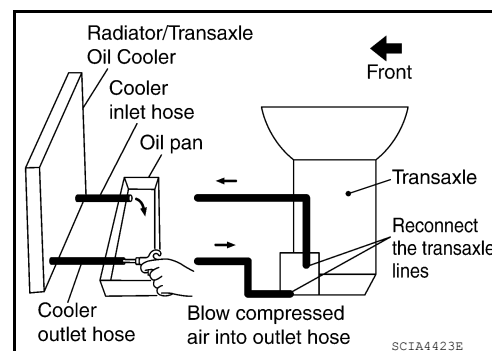
7. Insert the tip of an air gun into the end of the cooler outlet hose.
8. Wrap a shop rag around the air gun tip and end of the cooler outlet hose.
9. Blow compressed air regulated to 490 - 883 kPa (4.90 - 8.83 bar, 5 - 9 kg/cm², 71 - 128 psi) through the cooler outlet hose for 10 seconds to force out any remaining CVT fluid.
10. Repeat steps 5 through 9 three additional times.
11. Position an oil pan under the banjo bolts that connect the CVT fluid cooler steel lines to the transaxle.

12. Remove the banjo bolts.

CAUTION:

Do not reuse copper sealing washers.

13. Flush each steel line from the cooler side back toward the transaxle by spraying Transmission Cooler Cleaner in a continuous stream for 5 seconds.



FLUID CLOOR CLEANING

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

14. Blow compressed air regulated to 490 - 883 kPa (4.90 - 8.83 bar, 5 - 9 kg/cm², 71 - 128 psi) through each steel line from the cooler side back toward the transaxle for 10 seconds to force out any remaining CVT fluid.
15. Ensure all debris is removed from the steel cooler lines.
16. Ensure all debris is removed from the banjo bolts and fittings.
17. Perform "CVT FLUID COOLER DIAGNOSIS PROCEDURE".

CVT FLUID COOLER DIAGNOSIS PROCEDURE

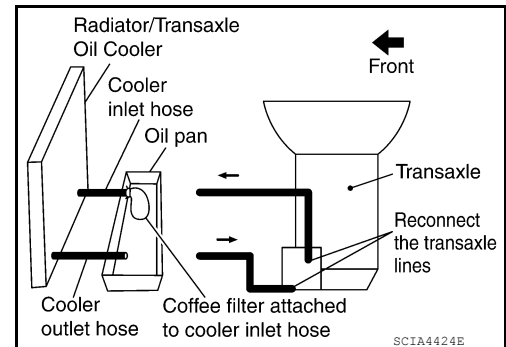
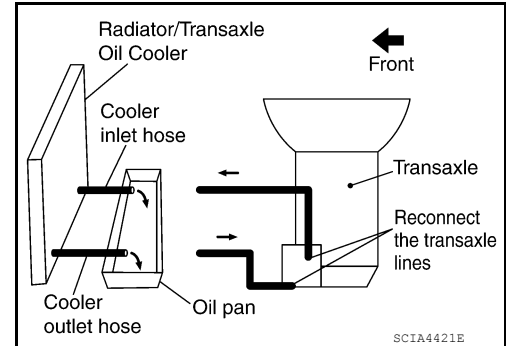
NOTE:

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

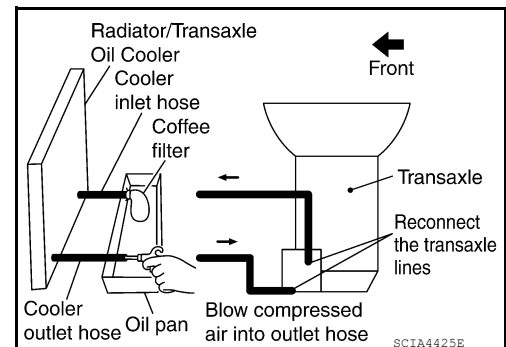
1. Position an oil pan under the transaxle's inlet and outlet cooler hoses.
2. Clean the exterior and tip of the cooler inlet hose.
3. Insert the extension adapter hose of a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the cooler outlet hose.

CAUTION:

- **Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.**
 - **Spray Transmission Cooler Cleaner only with adequate ventilation.**
 - **Avoid contact with eyes and skin.**
 - **Do not breath vapors or spray mist.**
4. Hold the hose and can as high as possible and spray Transmission Cooler Cleaner in a continuous stream into the cooler outlet hose until CVT fluid flows out of the cooler inlet hose for 5 seconds.
 5. Tie a common white, basket-type coffee filter to the end of the cooler inlet hose.



6. Insert the tip of an air gun into the end of the cooler outlet hose.
7. Wrap a shop rag around the air gun tip and end of cooler outlet hose.
8. Blow compressed air regulated to 490 - 883 kPa (4.90 - 8.83 bar, 5 - 9 kg/cm², 71 - 128 psi) through the cooler outlet hose to force any remaining CVT fluid into the coffee filter.
9. Remove the coffee filter from the end of the cooler inlet hose.
10. Perform "CVT FLUID COOLER INSPECTION PROCEDURE".



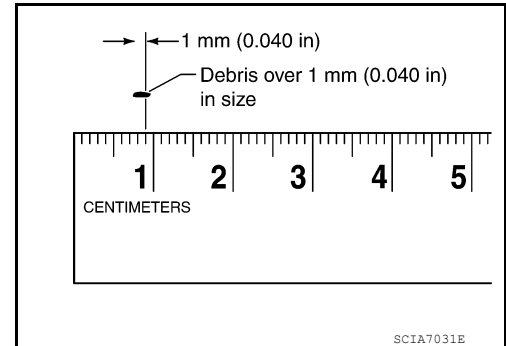
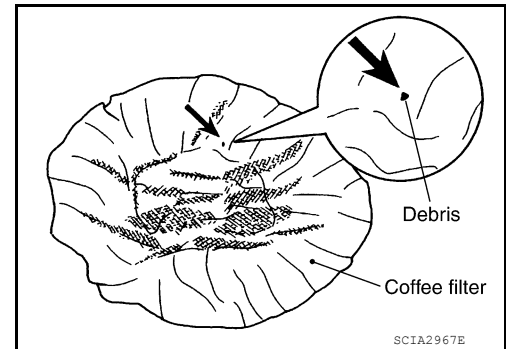
CVT FLUID COOLER INSPECTION PROCEDURE

FLUID CLOOR CLEANING

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

1. Inspect the coffee filter for debris.
- a. If small metal debris less than 1 mm (0.040 in) in size or metal powder is found in the coffee filter, this is normal. If normal debris is found, the CVT fluid cooler/radiator can be re-used and the procedure is ended.
- b. If one or more pieces of debris are found that are over 1 mm (0.040 in) in size and/or peeled clutch facing material is found in the coffee filter, the fluid cooler is not serviceable. The radiator/ fluid cooler must be replaced and the inspection procedure is ended.



CVT FLUID COOLER FINAL INSPECTION

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

STALL TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

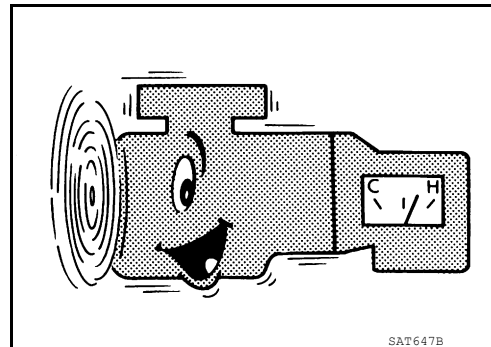
STALL TEST

Inspection and Judgment

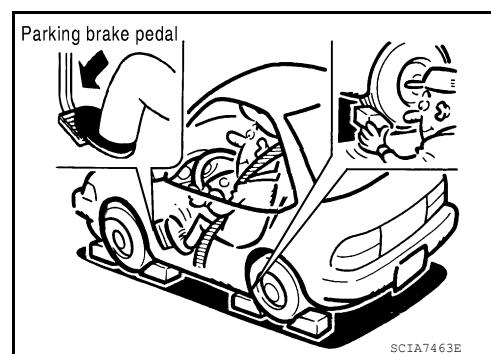
INFOID:000000006390611

INSPECTION

1. Inspect the amount of engine oil. Replenish the engine oil if necessary.
2. Drive for about 10 minutes to warm up the vehicle so that the CVT fluid temperature is 50 to 80°C (122 to 176°F). Inspect the amount of CVT fluid. Replenish if necessary.



3. Securely engage the parking brake so that the tires do not turn.
4. Install a tachometer where it can be seen by driver during test.
 - It is good practice to mark the point of specified engine rpm on indicator.
5. Start engine, apply foot brake, and place selector lever in "D" position.



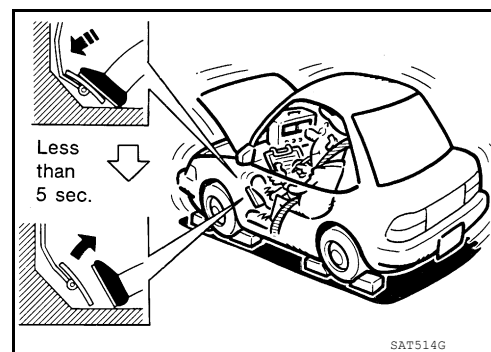
6. While holding down the foot brake, gradually press down the accelerator pedal.
7. Quickly read off the stall speed, and then quickly remove your foot from the accelerator pedal.

CAUTION:

Do not hold down the accelerator pedal for more than 5 seconds during this test.

Stall speed: 2,700 – 3,250 rpm

8. Move the selector lever to the "N" position.
9. Cool down the CVT fluid.
 - CAUTION:
 - Run the engine at idle for at least 1 minute.**
10. Repeat steps 6 through 9 with selector lever in "R" position.



JUDGMENT

STALL TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

	Selector lever position		Expected problem location
	"D"	"R"	
Stall rotation	H	O	• Forward clutch
	O	H	• Reverse brake
	L	L	• Engine and torque converter one-way clutch
	H	H	• Line pressure low • Primary pulley • Secondary pulley • Steel belt

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

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LINE PRESSURE TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

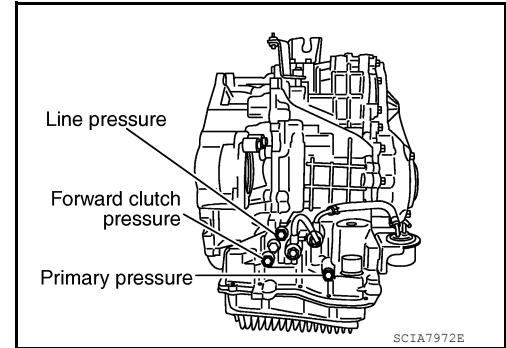
LINE PRESSURE TEST

Inspection and Judgment

INFOID:000000006390612

INSPECTION

Line Pressure Test Port



Line Pressure Test Procedure

1. Inspect the amount of engine oil and replenish if necessary.
2. Drive the car for about 10 minutes to warm it up so that the CVT fluid reaches in the range of 50 to 80°C (122 to 176°F), then inspect the amount of CVT fluid and replenish if necessary.

NOTE:

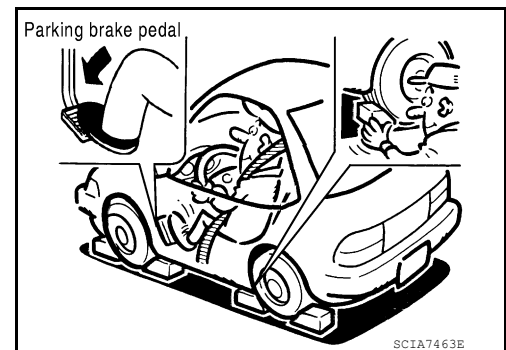
The CVT fluid temperature rises in the range of 50 to 80°C (122 to 176°F) during 10 minutes of driving.

3. After warming up CVT, remove the oil pressure detection plug and install the oil pressure gauge [special service tool: — (OTC3492)].

CAUTION:

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

4. Securely engage the parking brake so that the tires do not turn.



5. Start the engine, and then measure the line pressure at both idle and the stall speed.

CAUTION:

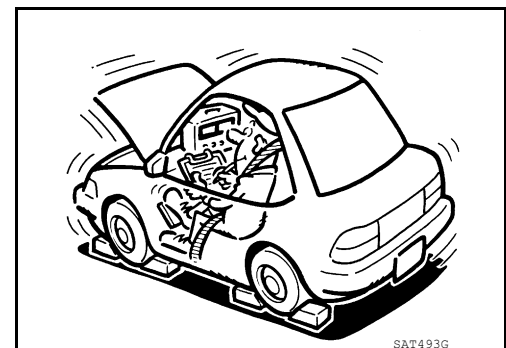
- Keep the brake pedal pressed all the way down during measurement.
- When measuring the line pressure at the stall speed, refer to "STALL TEST".

6. After the measurements are complete, install the oil pressure detection plug and tighten to the specified torque below.

 : 7.5 N·m (0.77 kg-m, 66 in-lb)

CAUTION:

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



Line Pressure

LINE PRESSURE TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

Engine speed	Line pressure kPa (kg/cm ² , psi)
	"R", "D" positions
At idle	750 (7.65, 108.8)
At stall	5,700 (58.14, 826.5)* ¹

*1: Reference values

JUDGMENT

Judgment		Possible cause
Idle speed	Low for all positions ("P", "R", "N", "D")	Possible causes include malfunctions in the pressure supply system and low oil pump output. For example <ul style="list-style-type: none"> Oil pump wear Pressure regulator valve or plug sticking or spring fatigue Oil strainer ⇒ oil pump ⇒ pressure regulator valve passage oil leak Engine idle speed too low
	Only low for a specific position	Possible causes include an oil pressure leak in a passage or device related to the position after the pressure is distributed by the manual valve.
	High	Possible causes include a sensor malfunction or malfunction in the line pressure adjustment function. For example <ul style="list-style-type: none"> Accelerator pedal position signal malfunction CVT fluid temperature sensor malfunction Pressure control solenoid A (line pressure solenoid) malfunction (sticking in OFF state, filter clog, cut line) Pressure regulator valve or plug sticking
Stall speed	Line pressure does not rise higher than the line pressure for idle.	Possible causes include a sensor malfunction or malfunction in the pressure adjustment function. For example <ul style="list-style-type: none"> Accelerator pedal position signal malfunction TCM malfunction Pressure control solenoid A (line pressure solenoid) malfunction (shorting, sticking in ON state) Pressure regulator valve or plug sticking
	The pressure rises, but does not enter the standard position.	Possible causes include malfunctions in the pressure supply system and malfunction in the pressure adjustment function. For example <ul style="list-style-type: none"> Accelerator pedal position signal malfunction Pressure control solenoid A (line pressure solenoid) malfunction (sticking, filter clog) Pressure regulator valve or plug sticking
	Only low for a specific position	Possible causes include an oil pressure leak in a passage or device related to the position after the pressure is distributed by the manual valve.

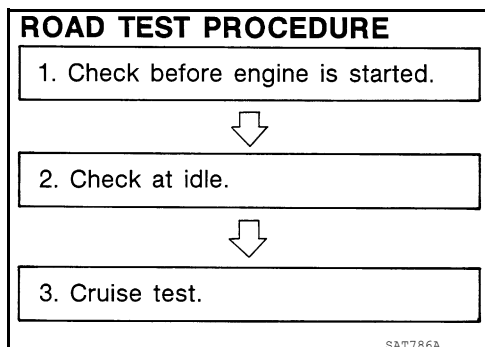
ROAD TEST

Description

INFOID:000000006390613

DESCRIPTION

- The purpose of the test is to determine overall performance of CVT and analyze causes of problems.
- The road test consists of the following three parts:
 1. "Check Before Engine Is Started" [TM-234](#).
 2. "Check at Idle" [TM-235](#).
 3. "Cruise Test" [TM-236](#).



- Before road test, familiarize yourself with all test procedures and items to check.
- Perform tests on all items until specified symptom is found. Troubleshoot items which check out No Good after road test.



CONSULT-III SETTING PROCEDURE

- Using CONSULT-III, perform a cruise test and record the result.
 - Print the result and ensure that shifts and lock-ups take place as per Shift Schedule.
1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
 2. Touch "MAIN SIGNALS" to set recording condition.
 3. See "Numerical Display", "Bar chart Display" or "Line Graph Display".
 4. Touch "START".
 5. When performing cruise test. Refer to [TM-236. "Cruise Test"](#).
 6. After finishing cruise test part, touch "RECORD".
 7. Touch "STORE".
 8. Touch "BACK".
 9. Touch "DISPLAY".
 10. Touch "PRINT".
 11. Check the monitor data printed out.

Check before Engine Is Started

INFOID:000000006390614

1. CHECK CVT INDICATOR LAMP

1. Park vehicle on flat surface.
2. Move selector lever to "P" position.
3. Turn ignition switch OFF. Wait at least 5 seconds.
4. Turn ignition switch ON. (Do not start engine.)

Does shift position indicator come on for about 2 seconds?

- YES >> 1. Turn ignition switch OFF.
2. Perform self-diagnosis and note NG items.
- Refer to [TM-123. "CONSULT-III Function \(TRANSMISSION\)"](#).
3. Go to [TM-235. "Check at Idle"](#).

ROAD TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

NO >> Stop "Road Test". Refer to [TM-209, "Symptom Table"](#).

Check at Idle

INFOID:000000006390615

1.CHECK STARTING THE ENGINE

1. Park vehicle on flat surface.
2. Move selector lever to "P" or "N" position.
3. Turn ignition switch OFF.
4. Turn ignition switch to "START" position.

Is engine started?

YES >> GO TO 2.

NO >> Stop "Road Test". Refer to [TM-209, "Symptom Table"](#).

2.CHECK STARTING THE ENGINE

1. Turn ignition switch ON.
2. Move selector lever to "D", "M" or "R" position.
3. Turn ignition switch to "START" position.

Is engine started?

YES >> Stop "Road Test". Refer to [TM-209, "Symptom Table"](#).

NO >> GO TO 3.

3.CHECK "P" POSITION FUNCTION

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

Does vehicle move when it is pushed forward or backward?

YES >> Refer to [TM-209, "Symptom Table"](#). Continue "Road Test".

NO >> GO TO 4.

4.CHECK "N" POSITION FUNCTION

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

Does vehicle move forward or backward?

YES >> Refer to [TM-209, "Symptom Table"](#). Continue "Road Test".

NO >> GO TO 5.

5.CHECK SHIFT SHOCK

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

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

YES >> Refer to [TM-209, "Symptom Table"](#). Continue "Road Test".

NO >> GO TO 6.

6.CHECK "R" POSITION FUNCTION

Release foot brake for several seconds.

Does vehicle creep backward when foot brake is released?

YES >> GO TO 7.

NO >> Refer to [TM-209, "Symptom Table"](#). Continue "Road Test".

7.CHECK "D" POSITION FUNCTION

Move selector lever to "D" position and check if vehicle creeps forward.

Does vehicle creep forward in all positions?

YES >> Go to [TM-236, "Cruise Test"](#).

NO >> Stop "Road Test". Refer to [TM-209, "Symptom Table"](#).

ROAD TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F09B]

INFOID:000000006390616

Cruise Test

1.CHECK VEHICLE SPEED WHEN SHIFTING GEARS — PART 1

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

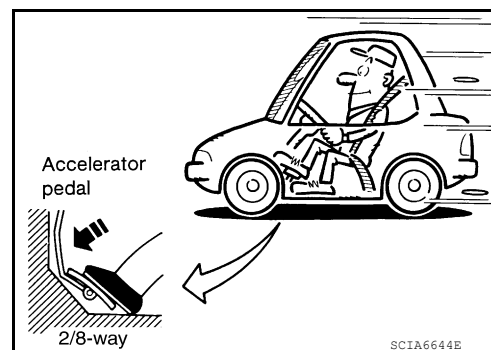
CVT fluid operating temperature: 50 – 80°C (122 – 176°F)

2. Park vehicle on flat surface.
3. Move selector lever to “P” position.
4. Start engine.
5. Move selector lever to “D” position.
6. Accelerate vehicle to 2/8-way throttle depressing accelerator pedal constantly.

 **Read vehicle speed and engine speed. Refer to [TM-250, "Vehicle Speed When Shifting Gears"](#).**

OK or NG

- OK >> GO TO 2.
NG >> Refer to [TM-209, "Symptom Table"](#). Continue “Road Test”.



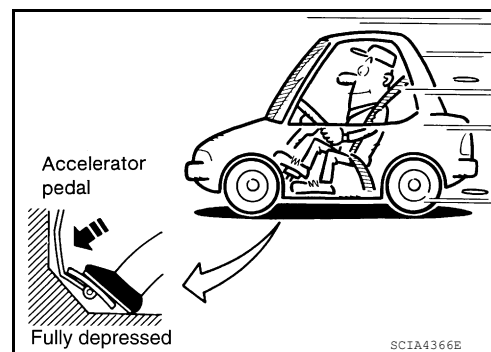
2.CHECK VEHICLE SPEED WHEN SHIFTING GEARS — PART 2

1. Park vehicle on flat surface.
2. Move selector lever to “D” position.
3. Accelerate vehicle to full depression depressing accelerator pedal constantly.

 **Read vehicle speed and engine speed. Refer to [TM-250, "Vehicle Speed When Shifting Gears"](#).**

OK or NG

- OK >> GO TO 3.
NG >> Refer to [TM-209, "Symptom Table"](#). Continue “Road Test”.



3.CHECK MANUAL MODE FUNCTION

Move to manual mode from “D” position.

Does it switch to manual mode?

- YES >> GO TO 4.
NO >> Refer to [TM-209, "Symptom Table"](#). Continue “Road Test”.

4.CHECK SHIFT-UP FUNCTION

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

 **Read the gear position. Refer to [TM-123, "CONSULT-III Function \(TRANSMISSION\)"](#).**

Is upshifting correctly performed?

- YES >> GO TO 5.
NO >> Refer to [TM-209, "Symptom Table"](#). Continue “Road Test”.

5.CHECK SHIFT-DOWN FUNCTION

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

 **Read the gear position. Refer to [TM-123, "CONSULT-III Function \(TRANSMISSION\)"](#).**

Is downshifting correctly performed?

- YES >> GO TO 6.
NO >> Refer to [TM-209, "Symptom Table"](#). Continue “Road Test”.

6.CHECK ENGINE BRAKE FUNCTION

Check engine brake.

Does engine braking effectively reduce speed in M1 position?

YES >> 1. Stop the vehicle.

2. Perform self-diagnosis. Refer to [TM-123, "CONSULT-III Function \(TRANSMISSION\)"](#).

NO >> Refer to [TM-209, "Symptom Table"](#). then continue trouble diagnosis.

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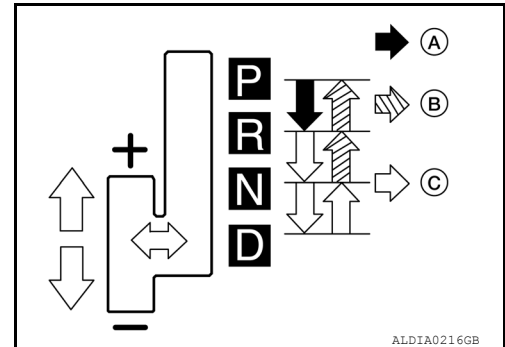
CVT POSITION

Inspection and Adjustment

INFOID:000000006390617

INSPECTION

1. Place shift selector in "P" position, and turn ignition switch ON (engine stop).
2. Make sure that shift selector can be shifted to other than "P" position when brake pedal is depressed. Also make sure that shift selector can be shifted from "P" position only when brake pedal is depressed.
3. Move the shift selector and check for excessive effort, sticking, noise or rattle.
4. Confirm the 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 the shift selector matches the position shown by the shift position indicator and the manual lever on the transaxle.
5. The method of operating the 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", or "N" position without applying forward/backward force to shift selector, check shift selector handle button operation for sticking.
7. Confirm the back-up lamps illuminate only when shift selector is placed in the "R" position. Confirm the back-up lamps do not illuminate when the shift selector is pushed toward the "R" position when in the "P" or "N" position.
8. Confirm the engine can only be started with the shift selector in the "P" and "N" positions.
9. Make sure transaxle is locked completely in "P" position.
10. When shift selector is set to manual shift gate, make sure that manual mode is displayed on combination meter.
Place shift selector to "+" and "-" sides, and check that set shift position changes.



ADJUSTMENT

CAUTION:**Apply parking brake before adjustment.**

1. Loosen the shift selector control cable nut.
2. Place the manual lever and the shift selector in "P" position.
3. Tighten shift selector control cable nut to specified torque.

Shift selector control cable nut: Refer to [TM-241, "Exploded View"](#).

CAUTION:

Secure the manual lever when tightening shift selector control cable nut. Make sure the manual lever stays in the "P" position.

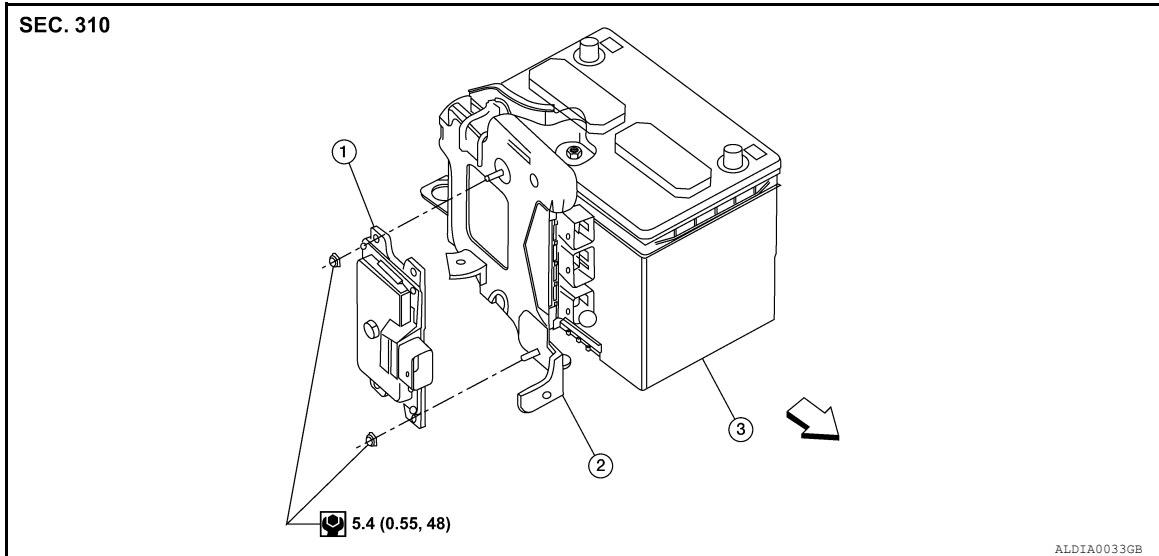
4. Check the operation of the CVT.

REMOVAL AND INSTALLATION

TCM

Exploded View

INFOID:000000006390618



1. TCM

2. Bracket

3. Battery

⇐ Front

Removal and Installation

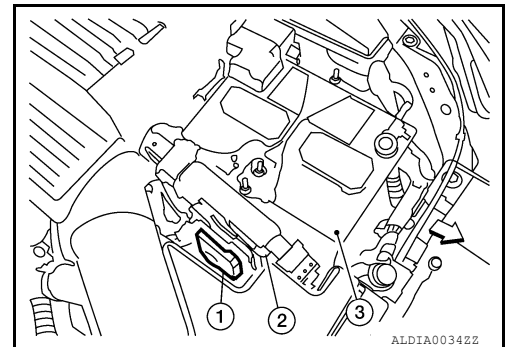
INFOID:000000006390619

REMOVAL

CAUTION:

When replacing TCM and transaxle assembly as a set, replace transaxle assembly first and then replace TCM. Refer to [TM-91, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly"](#).

1. Disconnect the battery negative terminal.
2. Remove the fresh air intake tube (upper) [EM-131, "Removal and Installation"](#).
3. Disconnect the TCM harness connector.
4. Remove the TCM (1) from the bracket (2).
 - ⇐: Front
 - Battery (3)



INSTALLATION

Installation is in the reverse order of removal.

CVT SHIFT SELECTOR

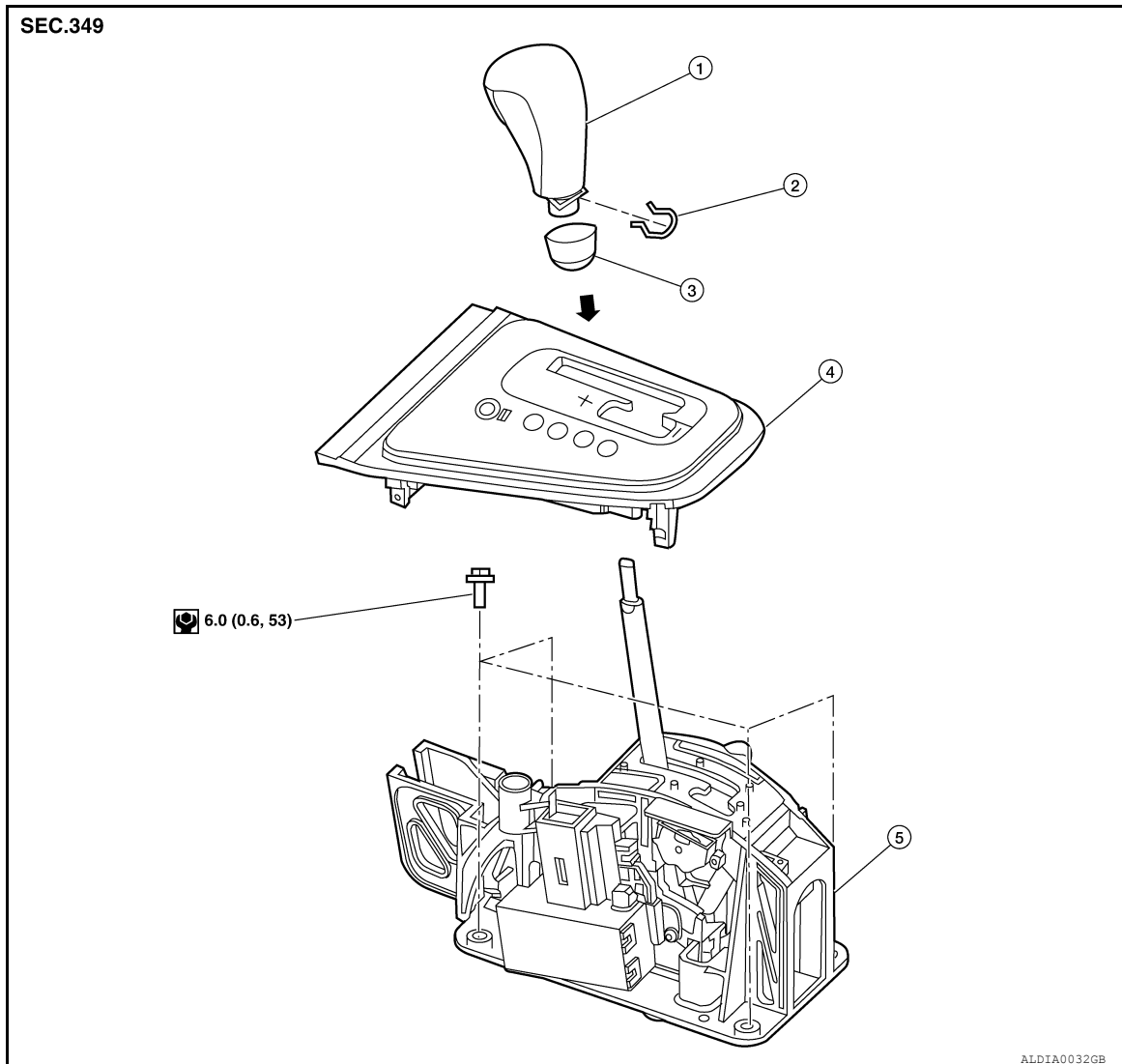
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

CVT SHIFT SELECTOR

Exploded View

INFOID:000000006390620



- | | | |
|--------------------------|-------------------------------|--------------------------------|
| 1. Shift selector handle | 2. Shift selector handle clip | 3. Shift selector handle cover |
| 4. Shift selector plate | 5. Shift selector assembly | |

Removal and Installation

INFOID:000000006390621

REMOVAL

1. Remove the center console. Refer to [IP-22. "Disassembly and Assembly"](#).
2. Disconnect the shift selector control cable from the shift selector assembly.
3. Disconnect the shift selector harness connector from the shift selector assembly.
4. Remove the shift selector assembly bolts and the shift selector assembly.

INSTALLATION

Installation is in the reverse order of removal.

- When installing the shift selector control cable to the shift selector assembly, make sure that the shift selector control cable is fully pressed in with the ribbed surface facing upward.
- After installation is completed, adjust and check position. Refer to [TM-238. "Inspection and Adjustment"](#).

CONTROL CABLE

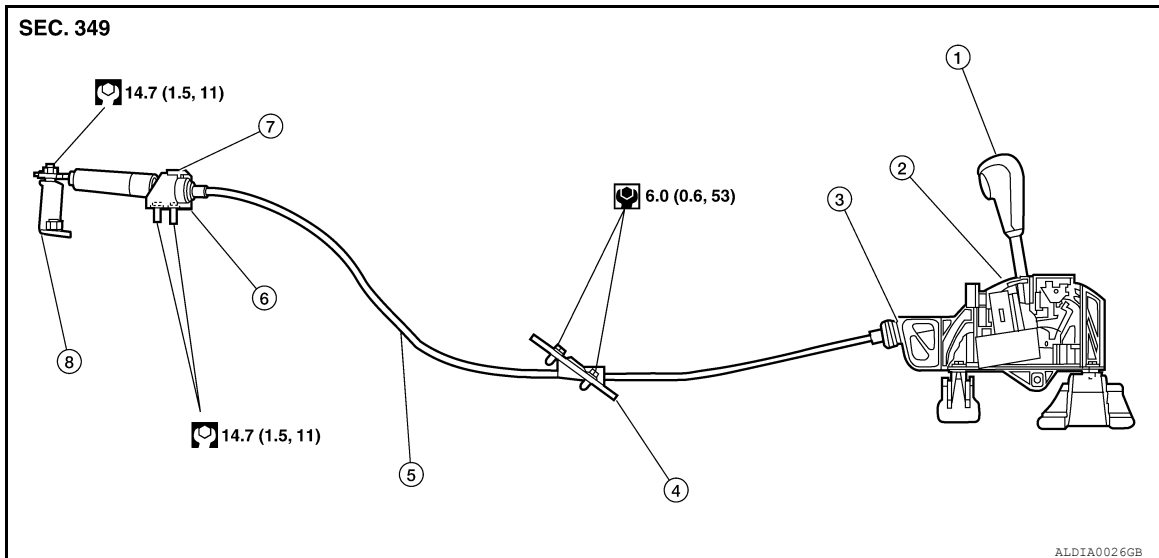
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

CONTROL CABLE

Exploded View

INFOID:000000006390622



- | | | |
|--------------------------|----------------------------|-------------------------|
| 1. Shift selector handle | 2. Shift selector assembly | 3. Control cable socket |
| 4. Retainer grommet | 5. Control cable | 6. Bracket |
| 7. Lock plate | 8. Manual lever | |

Removal and Installation

INFOID:000000006390623

REMOVAL

1. Move shift selector to "P".
2. Remove air cleaner and air duct assembly. Refer to [EM-131, "Removal and Installation"](#).
3. Remove the shift selector control cable nut and shift selector control cable from the manual lever.
4. Remove the lock plate and the shift selector control cable from the bracket.
5. Remove the center console. Refer to [IP-22, "Disassembly and Assembly"](#).
6. Remove the bracket covering the retainer grommet.
7. Remove the retainer grommet bolts and the retainer grommet.
8. Remove the shift selector control cable from the shift selector assembly.
9. Remove the shift selector control cable from the vehicle.

INSTALLATION

Installation is in the reverse order of removal.

- When installing the shift selector control cable to the shift selector assembly, make sure that the control cable socket is fully pressed into the shift selector assembly, and the shift selector control cable end is fully pressed in with the ribbed surface facing upward.
- After installation is complete, adjust and check the CVT position. Refer to [TM-238, "Inspection and Adjustment"](#).

DIFFERENTIAL SIDE OIL SEAL

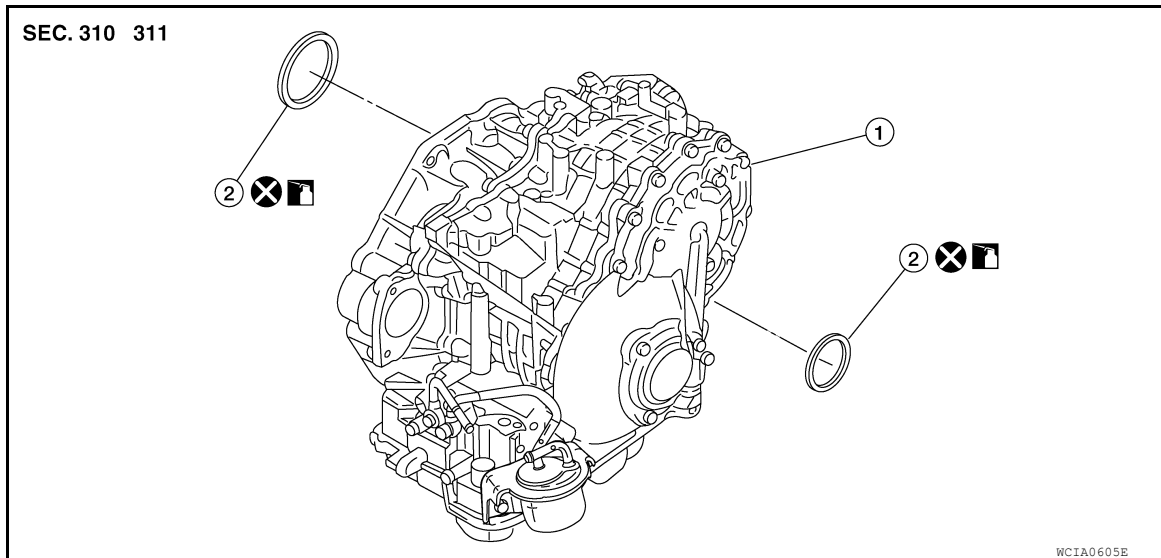
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

DIFFERENTIAL SIDE OIL SEAL

Exploded View

INFOID:000000006390626



1. Transaxle assembly

2. Differential side oil seal



:NISSAN CVT Fluid NS-2

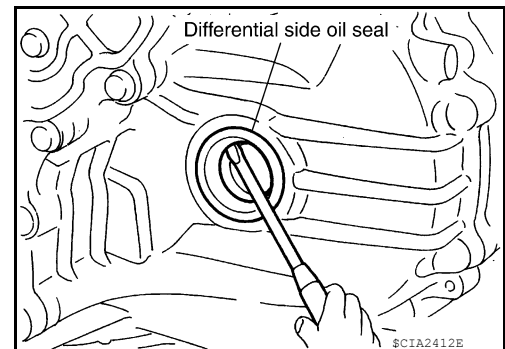
Removal and Installation

INFOID:000000006390627

REMOVAL

1. Remove drive shaft assembly. Refer to [FAX-16, "Disassembly and Assembly \(Left Side\)"](#) and [FAX-21, "Disassembly and Assembly \(Right Side\)"](#).

2. Remove the differential side oil seal using suitable tool
CAUTION:
Do not scratch transaxle case or converter housing.



INSTALLATION

1. Drive the new differential side oil seal into the transaxle case side (B) and converter housing side (C) until it is flush using suitable tool.

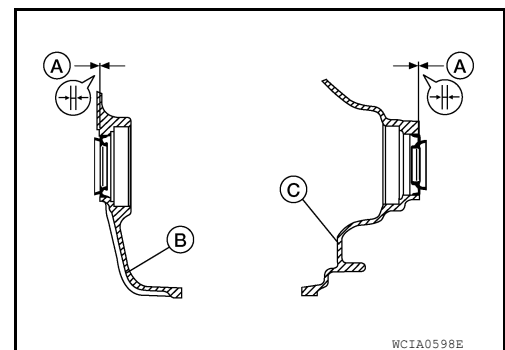
Tool number : — (J-47244) (LH)
: ST33400001 (J-47005) (RH)

Dimension A : 0 ± 0.5 mm (0 ± 0.02 in)

CAUTION:

- Do not reuse differential side oil seals.
- Apply specified NISSAN CVT fluid to side oil seals.

2. Install drive shaft assembly. Refer to [FAX-16, "Disassembly and Assembly \(Left Side\)"](#) and [FAX-21, "Disassembly and Assembly \(Right Side\)"](#).
3. Check CVT fluid level. Refer to [TM-225, "Inspection"](#).



AIR BREATHER HOSE

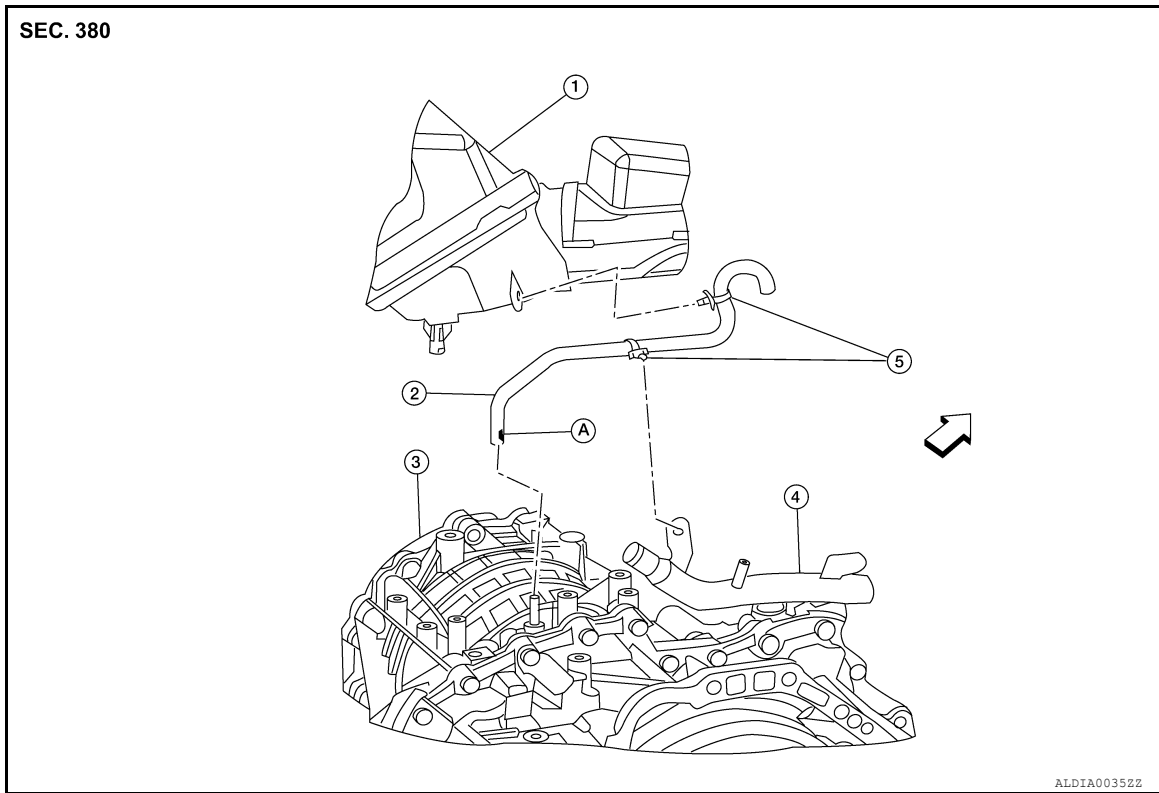
< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

AIR BREATHER HOSE

Exploded View

INFOID:000000006390624



- | | | |
|----------------|----------------------|-----------------------|
| 1. Air cleaner | 2. Air breather hose | 3. Transaxle assembly |
| 4. Heater pipe | 5. Clip | A. Paint mark |
| ⇐ Front | | |

Removal and Installation

INFOID:000000006390625

Refer to the figure for removal and installation.

CAUTION:

- Install air breather hose with paint mark facing front.
- Insert air breather hose onto air breather tube until overlap area reaches the spool.
- Install air breather hose to heater pipe and air cleaner case by fully inserting the clip.
- Make sure there are no pinched or restricted areas on air breather hose caused by bending or winding when installing it.

CVT FLUID COOLER

< REMOVAL AND INSTALLATION >

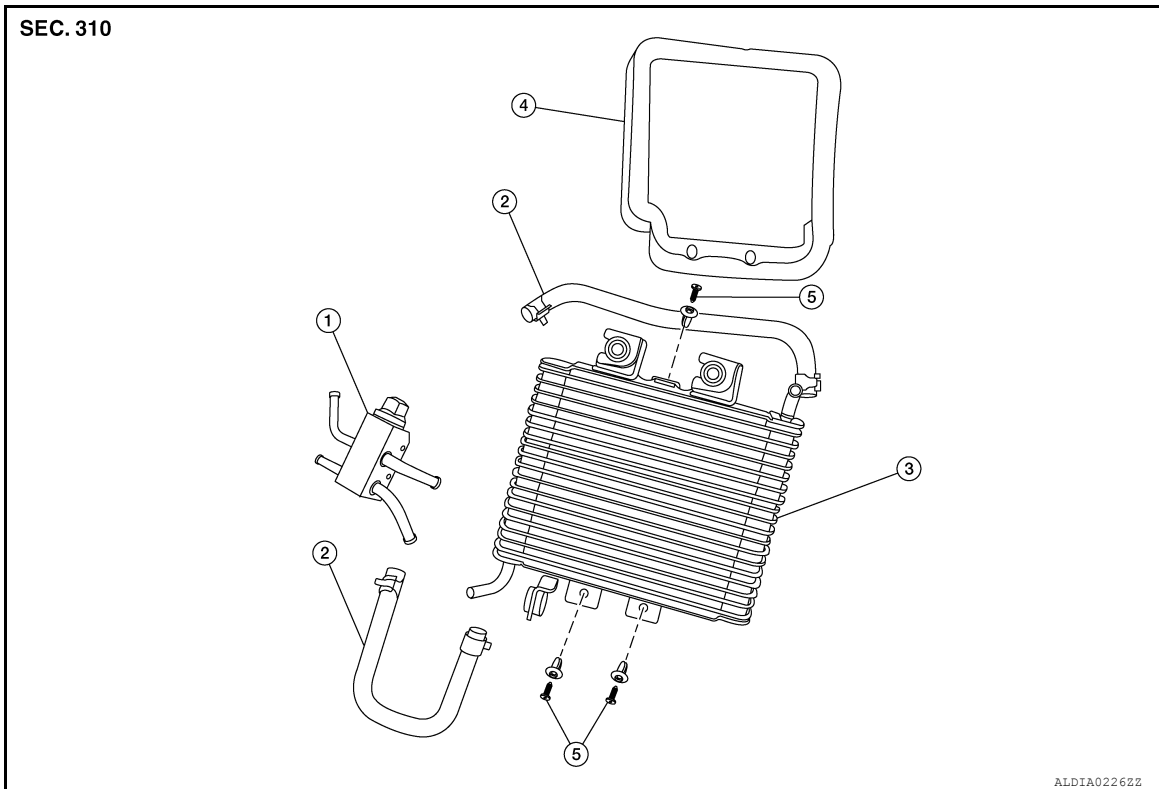
[CVT: RE0F09B]

CVT FLUID COOLER

TYPE 1

TYPE 1 : Exploded View

INFOID:000000006912990



1. Bypass valve

2. Hoses

3. Oil cooler

4. Air guide

5. Clips

TYPE 1 : Removal and Installation

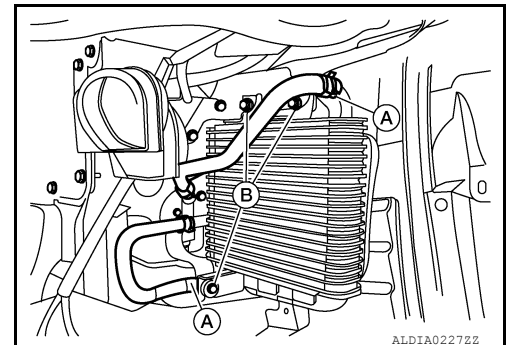
INFOID:000000006912991

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 fascia. Refer to [EXT-16, "Removal and Installation - Coupe"](#) (coupe), [EXT-40, "Removal and Installation"](#) (sedan).
2. Partially remove fender protector. Refer to [EXT-22, "Removal and Installation"](#) (coupe), [EXT-46, "Removal and Installation"](#) (sedan).
3. Disconnect oil cooler hoses (A).
4. Remove oil cooler bolts (B).



5. Remove oil cooler assembly.

CVT FLUID COOLER

< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

6. Remove air guide (if necessary).

INSTALLATION

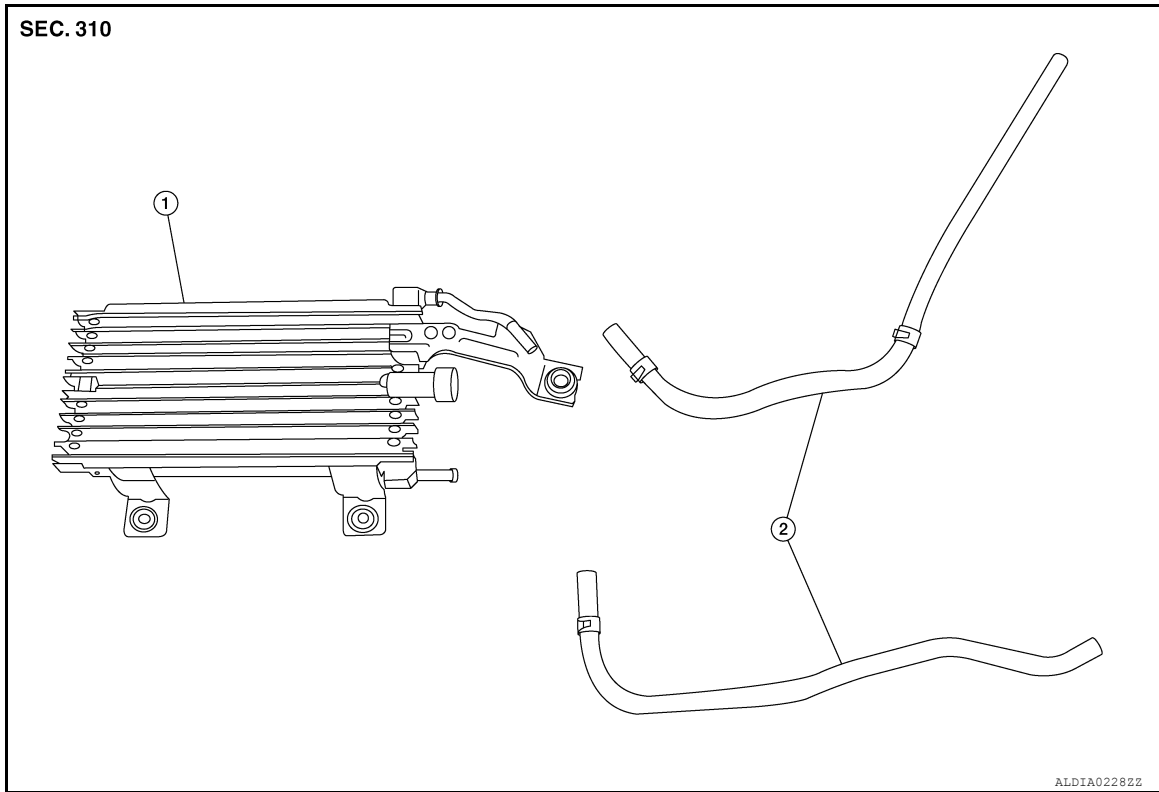
Installation is in the reverse order of removal.

- After installation be sure to check the CVT fluid and add the specified CVT fluid as necessary. Refer to [TM-225, "Inspection"](#).

TYPE 2

TYPE 2 : Exploded View

INFOID:000000006912992



1. Oil cooler

2. Hoses

TYPE 2 : Removal and Installation

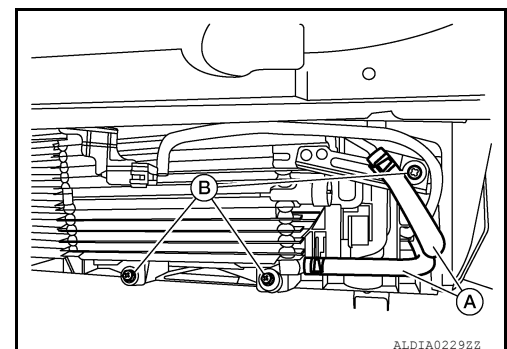
INFOID:000000006912993

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 fascia. Refer to [EXT-16, "Removal and Installation - Coupe"](#) (coupe), [EXT-40, "Removal and Installation"](#) (sedan).
2. Disconnect oil cooler hoses (A).
3. Remove oil cooler bolts (B).
4. Remove oil cooler assembly.



INSTALLATION

CVT FLUID COOLER

< REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

Installation is in the reverse order of removal.

- After installation be sure to check the CVT fluid and add the specified CVT fluid as necessary. Refer to [TM-225, "Inspection"](#).

TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

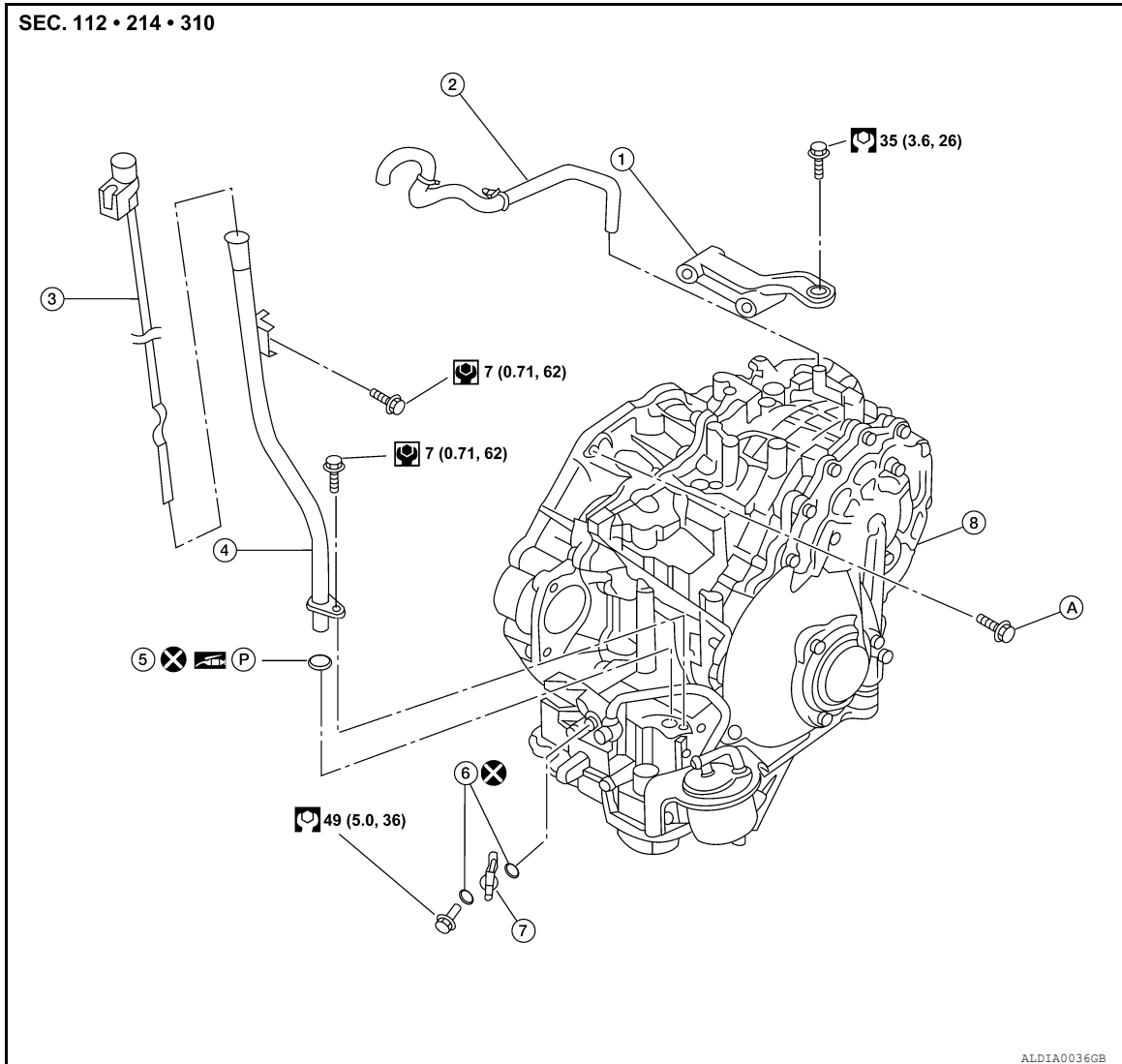
[CVT: RE0F09B]

UNIT REMOVAL AND INSTALLATION

TRANSAXLE ASSEMBLY

Exploded View

INFOID:000000006390628



- | | | |
|----------------------------|-----------------------|--|
| 1. Rear gusset | 2. Air breather hose | 3. CVT fluid level gauge |
| 4. CVT fluid charging pipe | 5. O-ring | 6. Copper sealing washer |
| 7. Fluid cooler tube | 8. Transaxle assembly | A. Refer to TM-247, "Removal and Installation" . |

Removal and Installation

INFOID:000000006390629

REMOVAL

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator.

CAUTION:

- Perform this step engine is cold.
- When replacing TCM and transaxle assembly as a set, replace transaxle assembly first and then replace TCM. Refer to [TM-91, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly"](#).

TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

1. Remove the engine and transaxle as an assembly. Refer to [EM-203, "Removal and Installation"](#).
NOTE:
Using paint, put matching marks on the drive plate and torque converter when removing the torque converter to drive plate nuts.
2. Disconnect the electrical connectors from the following:
 - CVT unit harness connector. Refer to [TM-221, "Removal and Installation Procedure for CVT Unit Connector"](#).
 - Secondary speed sensor
3. Remove the harness from the CVT.
4. Remove the transaxle to engine and engine to transaxle bolts.
5. Remove the CVT fluid charging pipe.
6. Separate the transaxle from the engine.
7. If necessary, remove the following from the CVT:
 - Fluid cooler tube
 - Air breather hose
 - Brackets

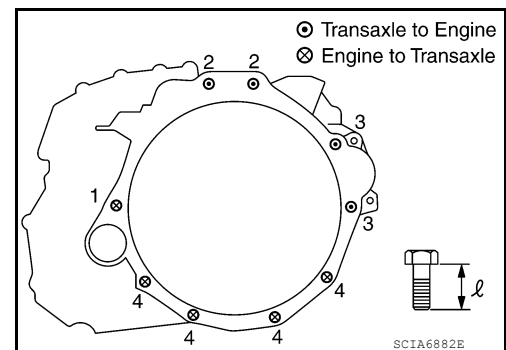
INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- When replacing an engine or transaxle you must make sure any dowels are installed correctly during re-assembly
- Improper alignment caused by missing dowels may cause vibration, oil leaks or breakage of drive train components.
- Do not reuse O-rings or copper sealing washers.
- When turning crankshaft, turn it clockwise as viewed from the front of the engine.
- When tightening the nuts for the torque converter while securing the crankshaft pulley bolt, be sure to confirm the tightening torque of the crankshaft pulley bolt. Refer to [EM-207, "Disassembly and Assembly"](#).
- After converter is installed to drive plate, rotate crankshaft several turns to check that CVT rotates freely without binding.
- When installing the CVT to the engine, align the matching mark on the drive plate with the matching mark on the torque converter.
- When installing CVT assembly to the engine assembly, attach the bolts in accordance with the following standard.

Bolt No.	1	2	3	4
Number of bolts	1	2	2	4
Bolt length "ℓ"mm (in)	55 (2.17)	34 (1.54)	108 (4.25)	45 (1.77)
Tightening torque N·m (kg-m, ft-lb)	75 (7.7, 55)			43 (4.4, 32)



- When installing the drive plate to torque converter nuts, tighten them temporarily. then tighten the nuts to the specified torque.

Inspection and Adjustment

INFOID:000000006390630

INSPECTION BEFORE INSTALLATION

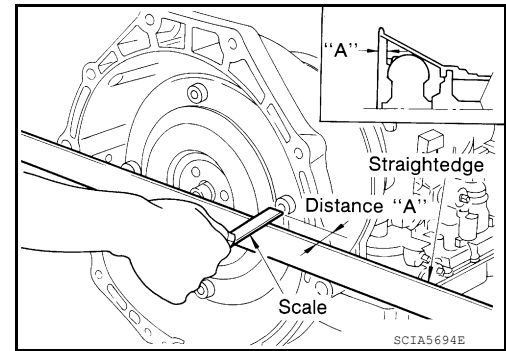
TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F09B]

After inserting the torque converter to the CVT, be sure to check distance (A) to ensure it is within specifications.

Distance (A) : 14.0 mm (0.55 in) or more



INSPECTION AFTER INSTALLATION

Check the following.

- Check for CVT fluid leakage and check CVT fluid level. Refer to [TM-225, "Inspection"](#).
- Check CVT position. Refer to [TM-238, "Inspection and Adjustment"](#).
- Start and warm up the engine. Visually check that there is no leakage of engine coolant and CVT fluid.

ADJUSTMENT AFTER INSTALLATION

Erase TCM data.

- Erase CVT fluid degradation level data. Refer to [TM-123, "CONSULT-III Function \(TRANSMISSION\)"](#).
- When replacing the transaxle assembly, erase EEP ROM in TCM. Refer to [TM-91, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly"](#).

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[CVT: RE0F09B]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specification

INFOID:000000006390631

Applied model		VQ35DE engine
		2WD
CVT model		RE0F09B
CVT assembly	Model code number	1XE0E
Transmission gear ratio	D position	Variable
	Reverse	1.766
	Final drive	4.878
Recommended fluid		NISSAN CVT Fluid NS-2*1
Fluid capacity		10.2 liter (10-3/4 US qt, 9 Imp qt)

CAUTION:

- Use only Genuine NISSAN CVT Fluid NS-2. Do not mix with other fluid.
- Using CVT fluid other than Genuine NISSAN CVT Fluid NS-2 will deteriorate in driveability and CVT durability, and may damage the CVT, which is not covered by the warranty.

*1: Refer to [MA-12, "Fluids and Lubricants"](#).

Vehicle Speed When Shifting Gears

INFOID:000000006390632

Numerical value data are reference values.

Engine type	Throttle position	Shift pattern	Engine speed (rpm)	
			At 40 km/h (25 MPH)	At 60 km/h (37 MPH)
VQ35DE	Full	"D" position	2,700 – 3,900	3,600 – 5,300
	1/4		1,000 – 3,100	1,100 – 3,600

CAUTION:

Lock-up clutch is engaged when vehicle speed is approximately 18 km/h (11 MPH) to 90 km/h (56 MPH).

Stall Speed

INFOID:000000006390633

Stall speed	2,700 – 3,250 rpm
-------------	-------------------

Line Pressure

INFOID:000000006390634

Engine speed	Line pressure kPa (bar, kg/cm ² , psi)
	"R", "D" positions
At idle	750 (7.50, 7.65, 108.8)
At stall	5,700 (57.00, 58.14, 826.5)*1

*1: Reference values

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[CVT: RE0F09B]

Solenoid Valves

INFOID:0000000006390635

Name	Resistance (Approx.)	Terminal
Secondary pressure solenoid valve	3.0 – 9.0 Ω	3
Line pressure solenoid valve		2
Torque converter clutch solenoid valve		12
Lock-up select solenoid valve	6 – 19 Ω	13

CVT Fluid Temperature Sensor

INFOID:0000000006390636

Name	Condition	CONSULT-III "DATA MONITOR" (Approx.)	Resistance (Approx.)
ATF TEMP SEN	20°C (68°F)	1.8 – 2.0 V	6.5 k Ω
	80°C (176°F)	0.6 – 1.0 V	0.9 k Ω

Primary Speed Sensor

INFOID:0000000006390637

Name	Condition	Data (Approx.)
Primary speed sensor	When driving ["M1" position, 20 km/h (12 MPH)]	655 Hz

Secondary Speed Sensor

INFOID:0000000006390638

Name	Condition	Data (Approx.)
Secondary speed sensor	When driving ["D" position, 20 km/h (12 MPH)]	390 Hz

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

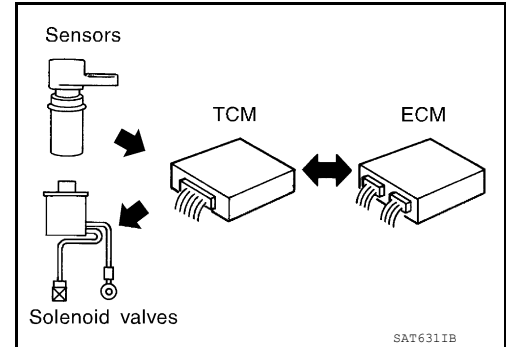
Work Flow

INFOID:000000006390639

INTRODUCTION

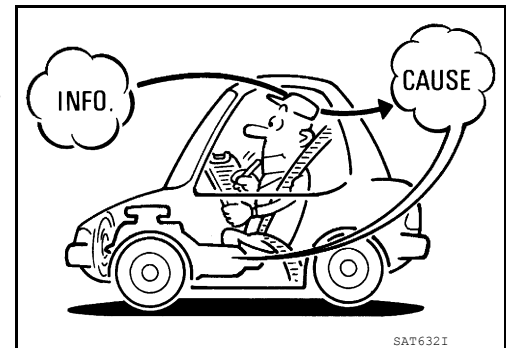
The TCM receives a signal from the vehicle speed sensor, transmission range switch and provides shift control or lock-up control via CVT solenoid valves.

Input and output signals must always be correct and stable in the operation of the CVT system. The CVT system must be in good operating condition and be free of valve seizure, solenoid valve malfunction, etc.



It is much more difficult to diagnose an error that occurs intermittently rather than continuously. Most intermittent errors are caused by poor electric connections or improper wiring. In this case, careful checking of suspected circuits may help prevent the replacement of good parts.

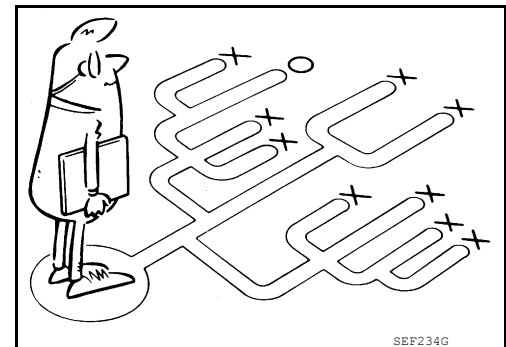
A visual check only may not find the cause of the errors. A road test with CONSULT-III or a circuit tester connected should be performed. Follow the "DETAILED FLOW".



Before undertaking actual checks, take a few minutes to talk with a customer who approaches with a driveability complaint. The customer can supply good information about such errors, especially intermittent ones. Find out what symptoms are present and under what conditions they occur. A "Diagnostic Work Sheet" as shown on the example (Refer to [TM-253](#)) should be used.

Start your diagnosis by looking for "conventional" errors first. This will help troubleshoot driveability errors on an electronically controlled engine vehicle.

Also check related Service bulletins.



DETAILED FLOW

1. COLLECT THE INFORMATION FROM THE CUSTOMER

Get the detailed information from the customer about the symptom (the condition and the environment when the incident/malfunction occurred) using diagnosis worksheet. Refer to [TM-253, "Diagnostic Work Sheet"](#).

>> GO TO 2.

2. CHECK SYMPTOM 1

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

- Fail-safe. Refer to [TM-357, "Fail-safe"](#).
- CVT fluid inspection. Refer to [TM-389, "Inspection"](#).
- Line pressure test. Refer to [TM-396, "Inspection and Judgment"](#).
- Stall test. Refer to [TM-394, "Inspection and Judgment"](#).

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CVT: RE0F10A]

>> GO TO 3.

3.CHECK DTC

1. Check DTC.
2. Perform the following procedure if DTC is detected.
 - Record DTC.
 - Erase DTC. Refer to [TM-286, "CONSULT-III Function \(TRANSMISSION\)"](#).

Is any DTC detected?

YES >> GO TO 4.

NO >> GO TO 6.

4.PERFORM DIAGNOSTIC PROCEDURE

Perform "Diagnostic Procedure" for the displayed DTC.

>> GO TO 5.

5.PERFORM DTC CONFIRMATION PROCEDURE

Perform "DTC Confirmation Procedure" for the displayed DTC.

Is DTC detected?

YES >> GO TO 4.

NO >> GO TO 6.

6.CHECK SYMPTOM 2

Try to confirm the symptom described by the customer.

Is any malfunction present?

YES >> GO TO 7.

NO >> **INSPECTION END**

7.ROAD TEST

1. Perform "ROAD TEST". Refer to [TM-398, "Description"](#).

>> GO TO 8.

8.CHECK SYMPTOM 3

Try to confirm the symptom described by the customer.

Is any malfunction present?

YES >> GO TO 2.

NO >> **INSPECTION END**

Diagnostic Work Sheet

INFOID:000000006390640

INFORMATION FROM CUSTOMER

KEY POINTS

- **WHAT**..... Vehicle & CVT model
- **WHEN**..... Date, Frequencies
- **WHERE**..... Road conditions
- **HOW**..... Operating conditions, Symptoms

Customer name	MR/MS	Model & Year	VIN
Trans. Model		Engine	Mileage
malfunction Date		Manuf. Date	In Service Date
Frequency		<input type="checkbox"/> Continuous <input type="checkbox"/> Intermittent (times a day)	

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

[CVT: RE0F10A]

Symptoms	<input type="checkbox"/> Vehicle does not move. (<input type="checkbox"/> Any position <input type="checkbox"/> Particular position)
	<input type="checkbox"/> No shift
	<input type="checkbox"/> Lock-up malfunction
	<input type="checkbox"/> Shift shock or slip (<input type="checkbox"/> N → D <input type="checkbox"/> N → R <input type="checkbox"/> Lock-up <input type="checkbox"/> Any drive position)
	<input type="checkbox"/> Noise or vibration
	<input type="checkbox"/> No pattern select
	<input type="checkbox"/> Others ()

DIAGNOSTIC WORKSHEET

1	<input type="checkbox"/> Read the item on cautions concerning fail-safe and understand the customer's complaint.		TM-357
2	<input type="checkbox"/> CVT fluid inspection, stall test and line pressure test		
		<input type="checkbox"/> CVT fluid inspection	TM-389
		<input type="checkbox"/> Leak (Repair leak location.) <input type="checkbox"/> State <input type="checkbox"/> Amount	
		<input type="checkbox"/> Stall test	
		<input type="checkbox"/> Torque converter one-way clutch <input type="checkbox"/> Reverse brake <input type="checkbox"/> Forward clutch <input type="checkbox"/> Steel belt <input type="checkbox"/> Engine <input type="checkbox"/> Line pressure low <input type="checkbox"/> Primary pulley <input type="checkbox"/> Secondary pulley	
<input type="checkbox"/> Line pressure inspection - Suspected part:		TM-394 , TM-396	
3	<input type="checkbox"/> Perform self-diagnosis.		TM-286
	Enter checks for detected items.		
4	<input type="checkbox"/> Perform road test.		TM-398
	4-1.	Check before engine is started	TM-398
	4-2.	Check at idle	TM-399
	4-3.	Cruise test	TM-400
5	<input type="checkbox"/> Inspect each system for items found to be NG in the self-diagnosis and repair or replace the malfunctioning parts.		
6	<input type="checkbox"/> Perform all road tests and enter the checks again for the required items.		TM-398
7	<input type="checkbox"/> For any remaining NG items, perform the "diagnosis procedure" and repair or replace the malfunctioning parts.		
8	<input type="checkbox"/> Erase the results of the self-diagnosis from the TCM.		TM-286

INSPECTION AND ADJUSTMENT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT

ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly

INFOID:000000006390641

SERVICE AFTER REPLACING TCM AND TRANSAXLE ASSEMBLY

Perform the applicable service according to the following table when replacing TCM or transaxle assembly.

CAUTION:

- **Never start the engine until the service is completed.**
- **“DTC P1701” may be indicated soon after replacing TCM or transaxle assembly (after erasing the memory in the pattern B). Restart the self-diagnosis after erasing the self-diagnosis result using CONSULT-III. Check that no error is detected.**

TCM	Transaxle assembly	Service pattern
Replaced with new unit	Not replaced the unit	“PATTERN A”
Not replaced the unit	Replaced with new or old unit	“PATTERN B”
Replaced with old unit	Not replaced the unit	
	Replaced with new or old unit	“PATTERN C”
Replaced with new unit	Replaced with new or old unit	

NOTE:

Old unit means that the unit has been already used for another vehicle.

PATTERN A

1. Shift the selector lever to “P” position after replacing TCM.
2. Turn ignition switch ON.
3. Check that the shift position indicator in the combination meter turns ON (It indicates approximately 1 or 2 seconds after turning ignition switch ON.)
 - Check the following items if shift position indicator does not turn ON. Repair or replace accordingly as necessary.
 - The harness between TCM and ROM ASSY in transaxle assembly is open or shorted.
 - Terminals disconnected, loose, or bent from connector housing.

PATTERN B

1. Turn ignition switch ON after replacing each part.
2. Connect the vehicle with CONSULT-III.
3. Start engine.
 - CAUTION:**
Never start driving.
4. Select “Data monitor” in “TRANSMISSION”.
5. Warm up transaxle assembly until “ATFTEMP COUNT” indicates 47 [approximately 20°C (68°F)] or more, and then turn ignition switch OFF.
6. Turn ignition switch ON.
 - CAUTION:**
Never start engine.
7. Select “Self Diagnostic Results” in “TRANSMISSION”.
8. Shift the selector lever to “R” position.
9. Depress slightly the accelerator pedal (Pedal angle: 2/8) while depressing the brake pedal.
10. Select “Erase” with step 9.
11. Release brake pedal and accelerator pedal.
12. Turn ignition switch OFF while keeping the selector lever in “R” position.
13. Wait approximately 10 seconds.
14. Turn ignition switch ON while keeping the selector lever in “R” position.

INSPECTION AND ADJUSTMENT

< BASIC INSPECTION >

[CVT: RE0F10A]

15. Select "Special function" in "TRANSMISSION".
16. Check that the value on "CALIB DATA" in CONSULT-III is the same as the data listed in the table below.
 - Restart the procedure from step 3 if the values are not the same.

CALIB DATA

Item name	Display value
UNIT CLB ID 1	00
UNIT CLB ID 2	00
UNIT CLB ID 3	00
UNIT CLB ID 4	00
UNIT CLB ID 5	00
UNIT CLB ID 6	00

17. Shift the selector lever to "P" position.
18. Check that the shift position indicator in combination meter turns ON. (It indicates approximately 1 or 2 seconds after shifting the selector lever to "P" position.)
 - Check the following items if shift position indicator does not turn ON. Repair or replace accordingly as necessary.
 - The harness between TCM and ROM ASSY in transaxle assembly is open or shorted.
 - Terminals disconnected, loose, or bent from connector housing.
 - Power supply and ground of TCM. Refer to [TM-334, "Description"](#).

PATTERN C

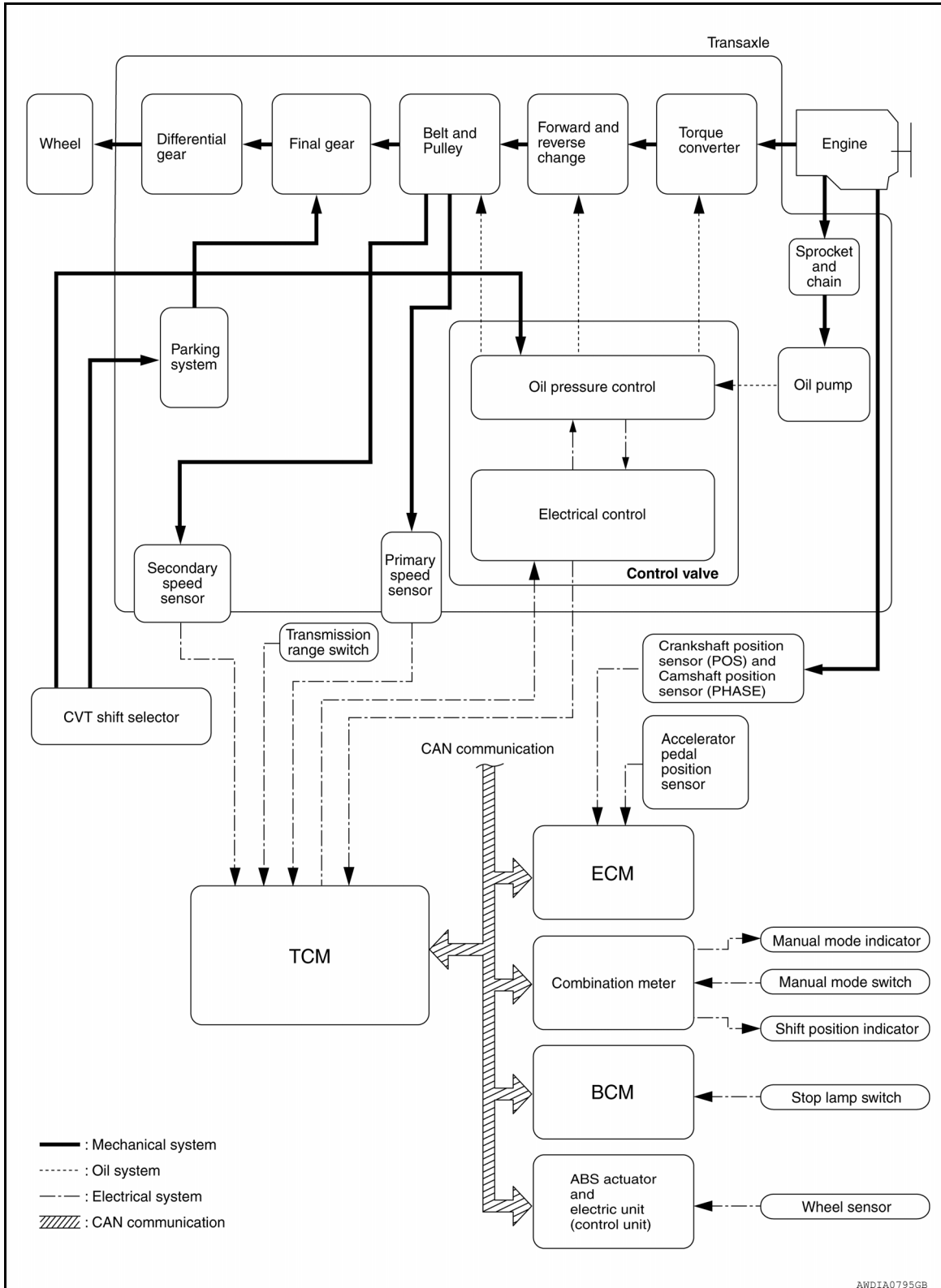
1. Replace transaxle assembly first, and then replace TCM.
2. Perform the service of "PATTERN A".
(Perform the service of "PATTERN B" if TCM is replaced first.)

SYSTEM DESCRIPTION

CVT SYSTEM

System Diagram

INFOID:000000006390642



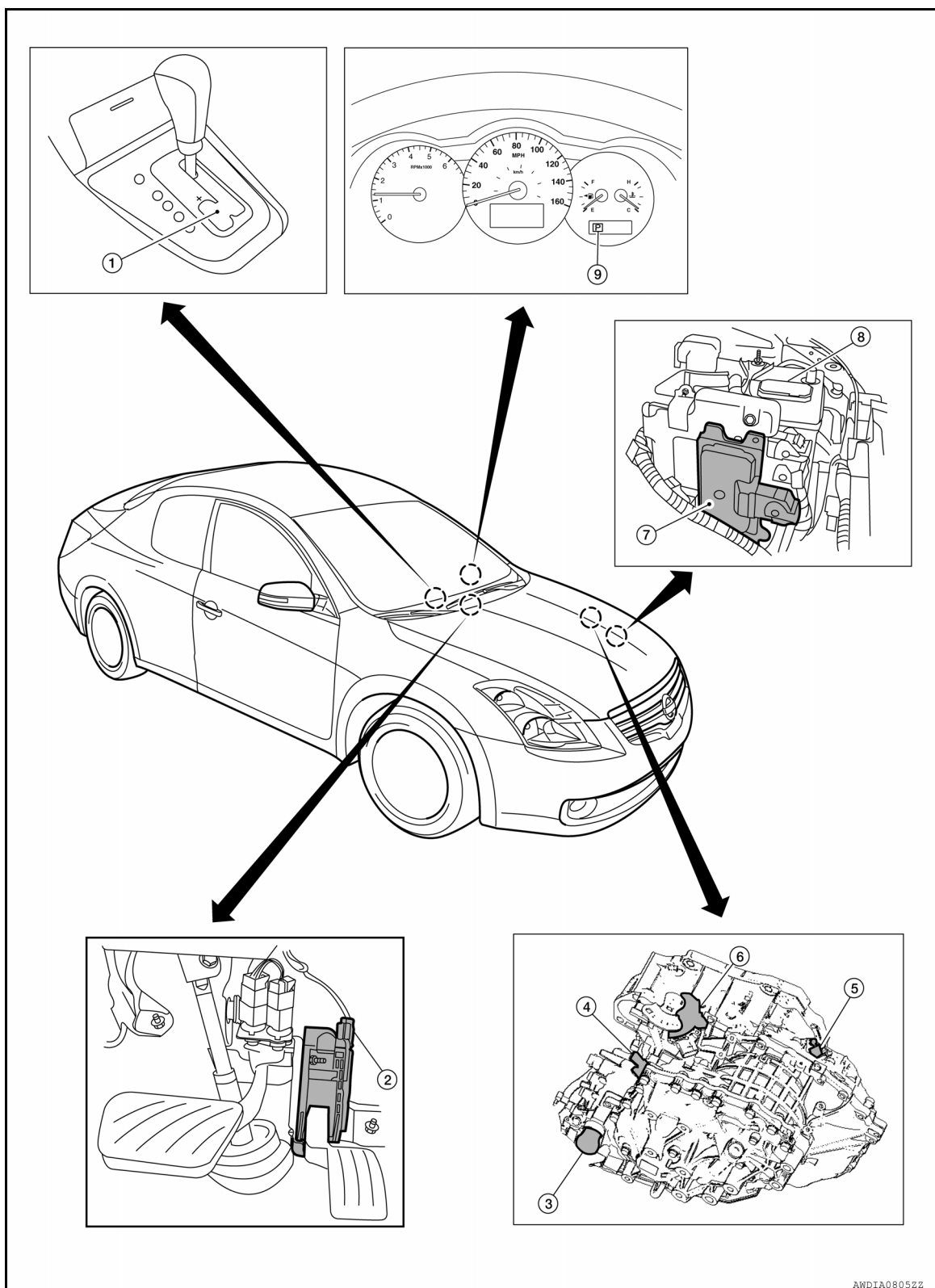
CVT SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Coupe

INFOID:000000006390643



1. CVT shift selector assembly

2. Accelerator pedal position (APP) sensor

3. CVT unit harness connector

4. Primary speed sensor

5. Secondary speed sensor

6. Transmission range switch

7. TCM

8. Battery

9. Shift position indicator
Manual mode indicator

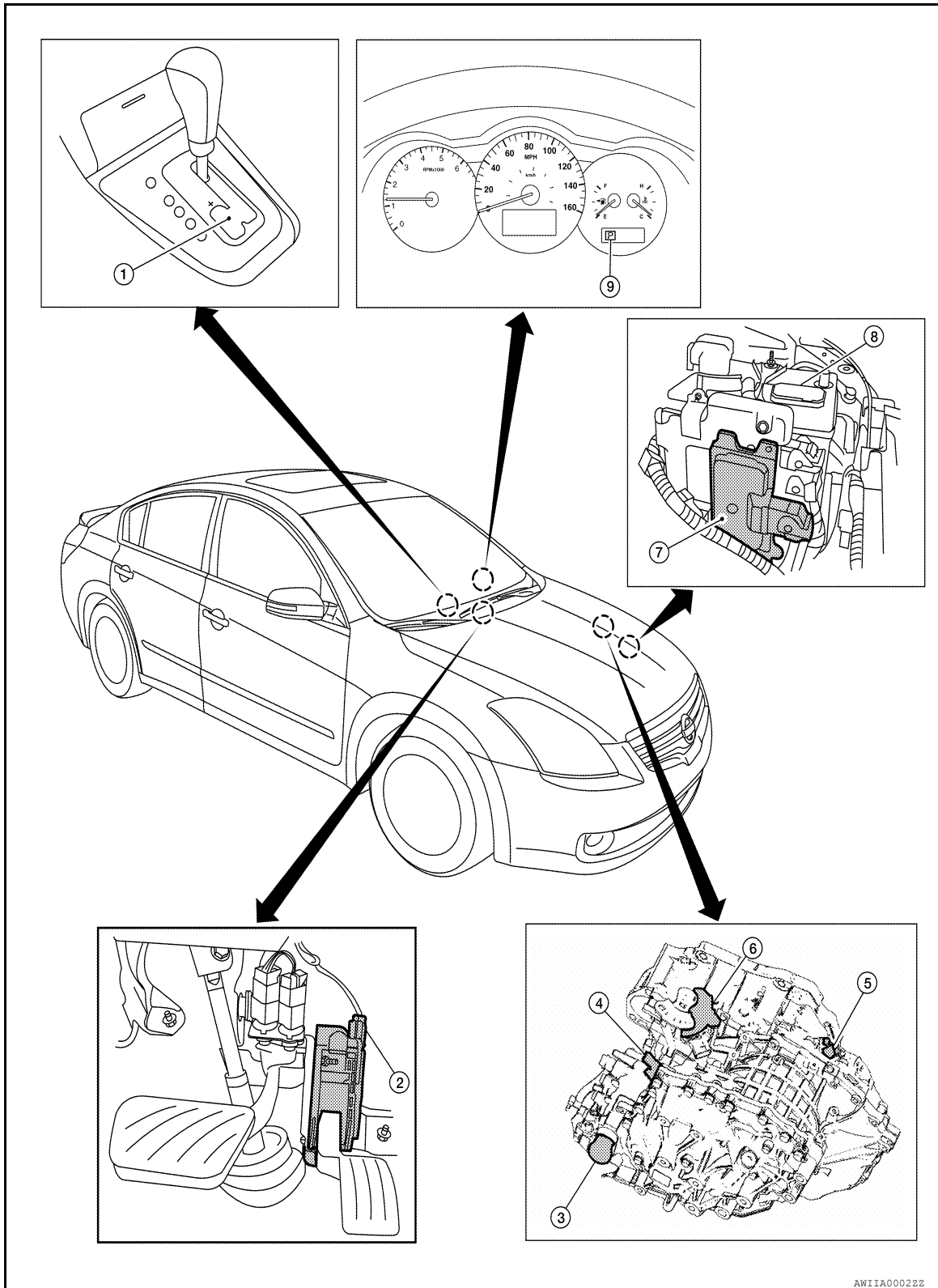
CVT SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Sedan

INFOID:000000006390644



- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

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MECHANICAL SYSTEM

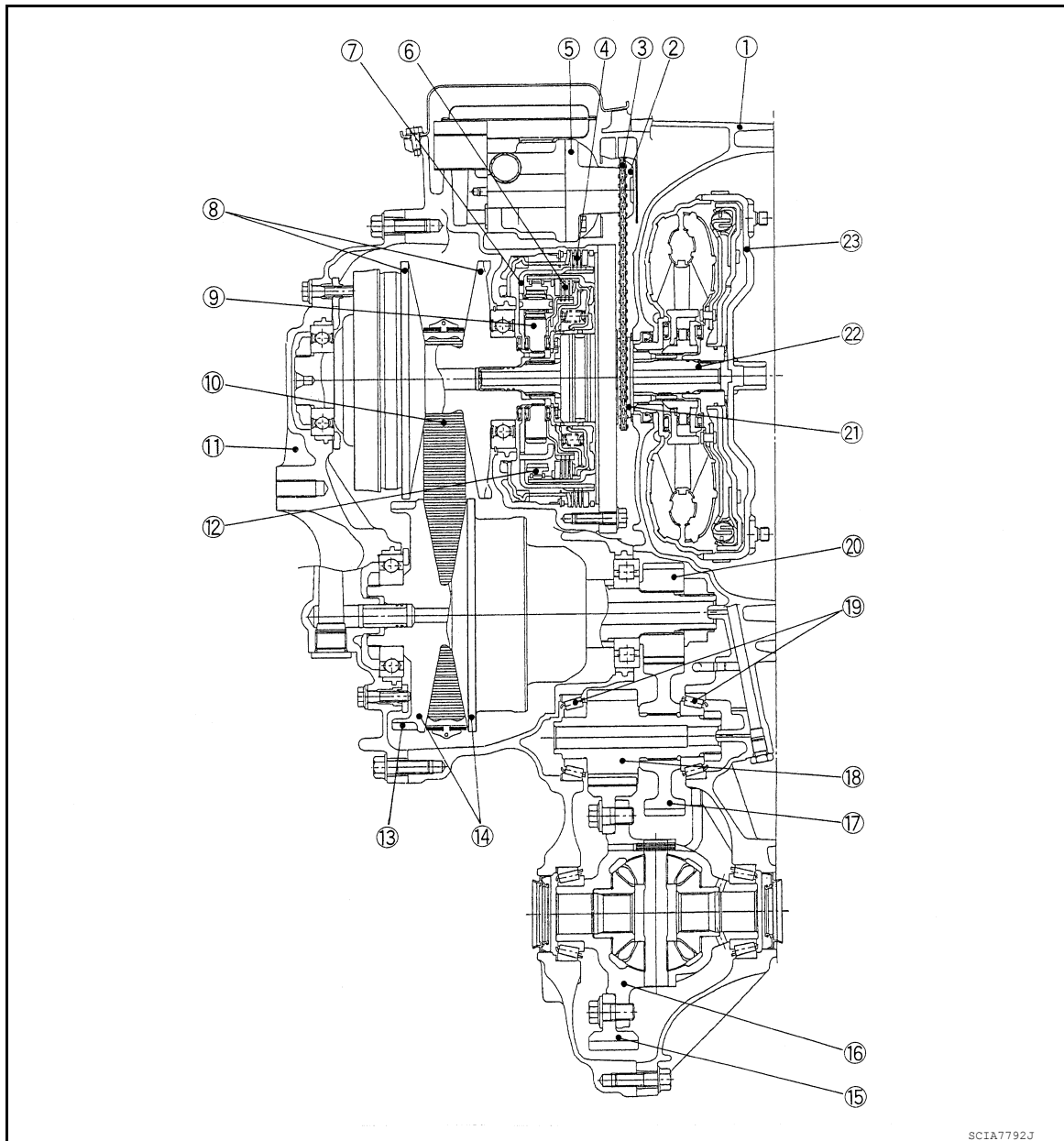
< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

MECHANICAL SYSTEM

Cross-Sectional View

INFOID:000000006390645



- | | | |
|--------------------------|----------------------|--------------------|
| 1. Converter housing | 2. Driven sprocket | 3. Chain |
| 4. Reverse brake | 5. Oil pump | 6. Forward clutch |
| 7. Planetary carrier | 8. Primary pulley | 9. Sun gear |
| 10. Steel belt | 11. Side cover | 12. Internal gear |
| 13. Parking gear | 14. Secondary pulley | 15. Final gear |
| 16. Differential case | 17. Idler gear | 18. Reduction gear |
| 19. Taper roller bearing | 20. Output gear | 21. Drive sprocket |
| 22. Input shaft | 23. Torque converter | |

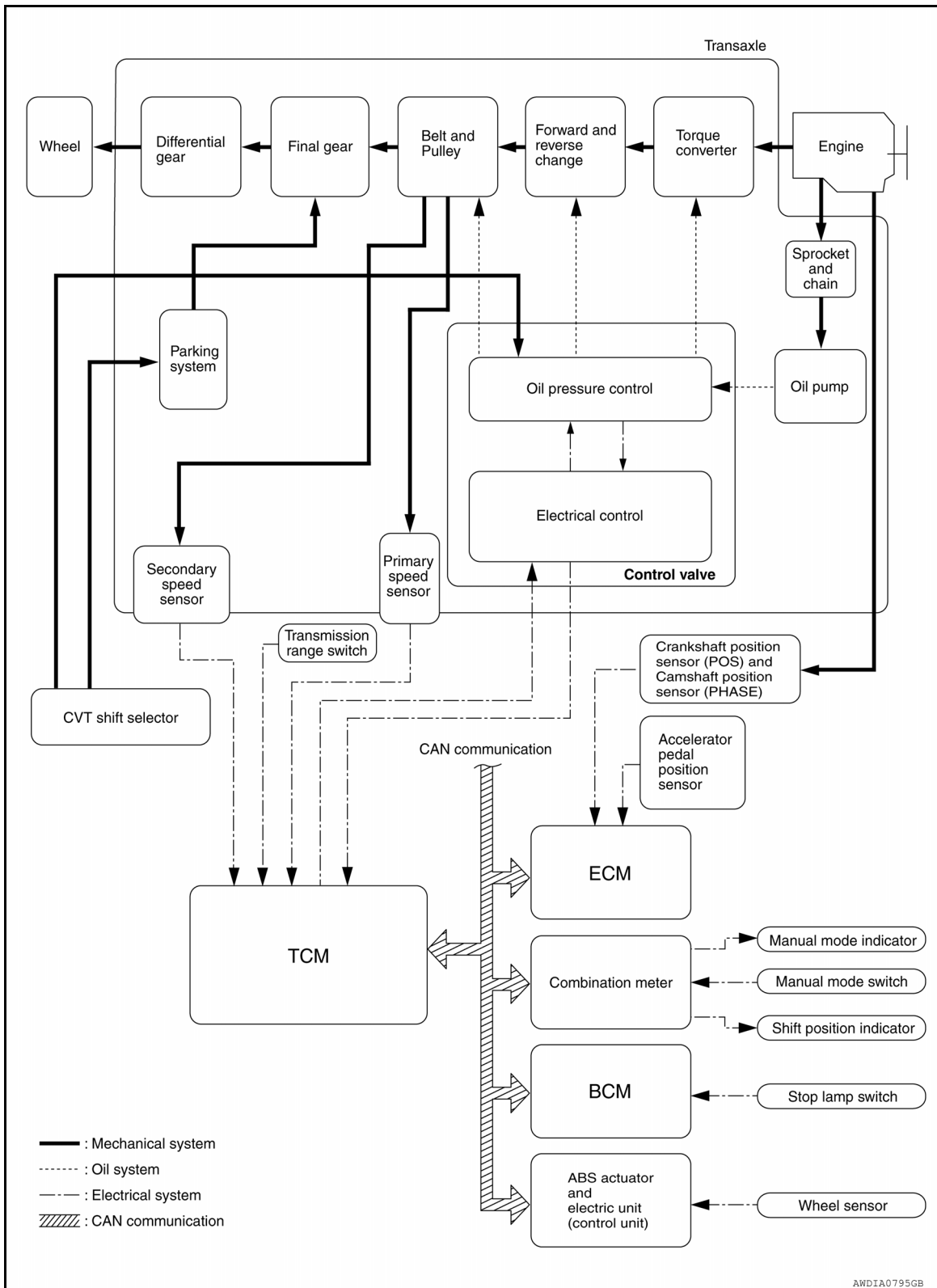
MECHANICAL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

System Diagram

INFOID:000000006390646



System Description

INFOID:000000006390647

Transmits the power from the engine to the drive wheel.

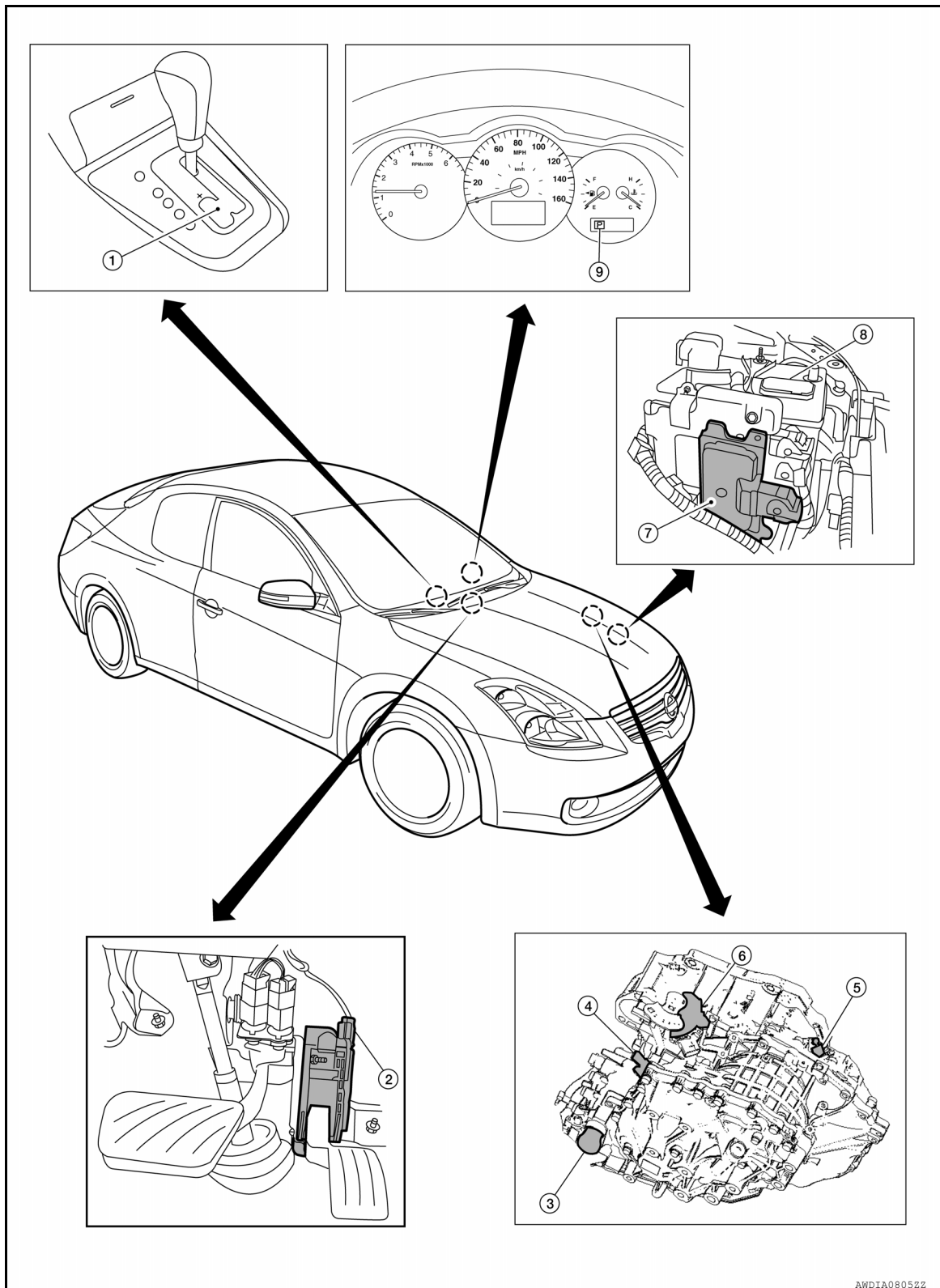
MECHANICAL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Coupe

INFOID:000000006390648



- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

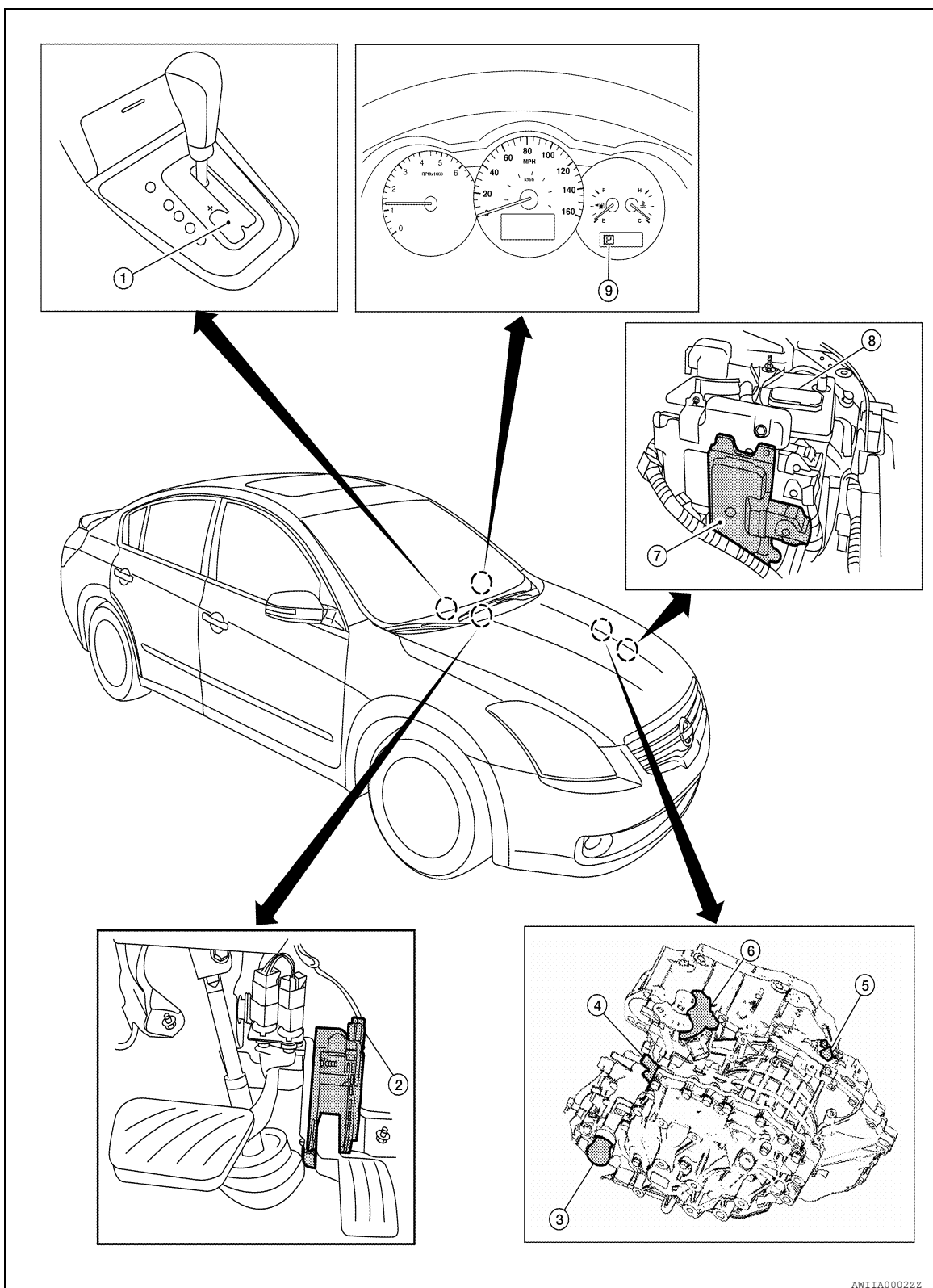
MECHANICAL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Sedan

INFOID:000000006390649



- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

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MECHANICAL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Description

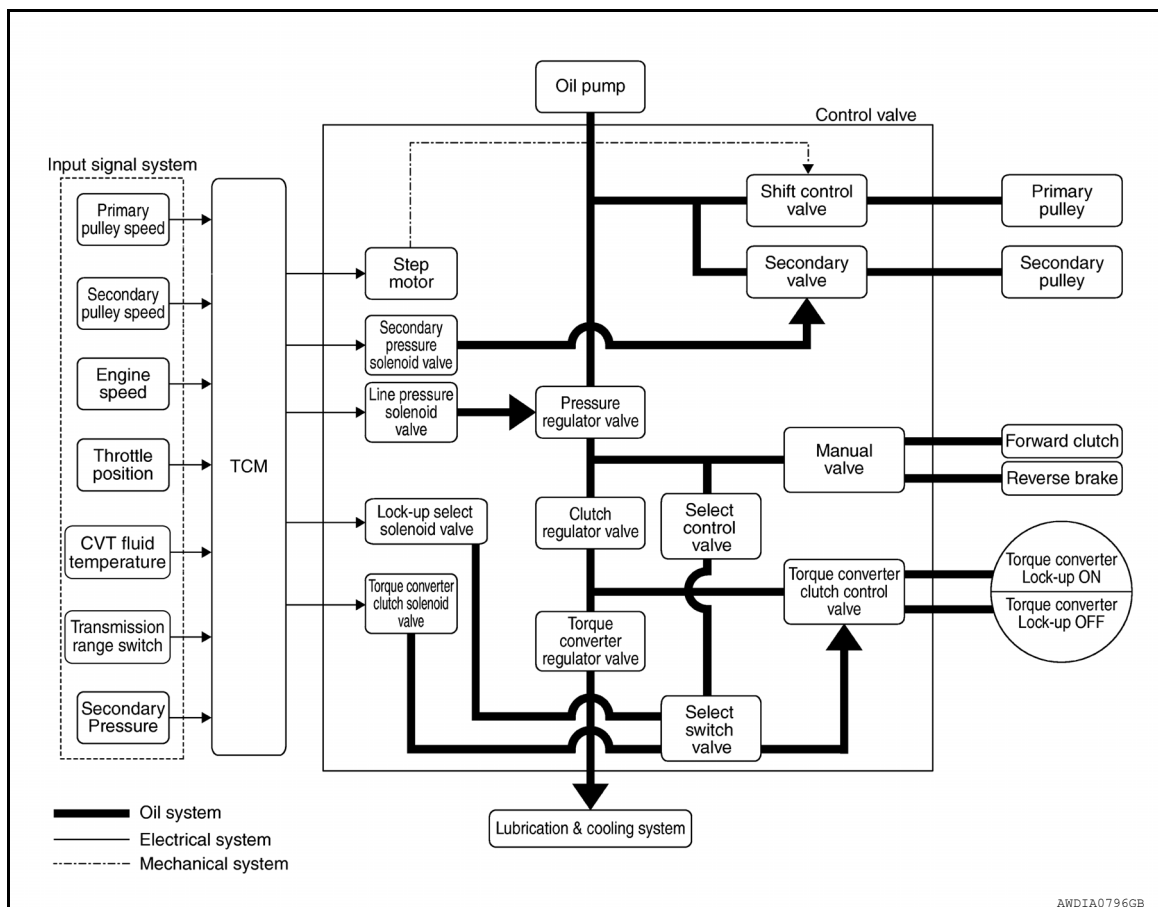
INFOID:000000006390650

Item	Function
Torque converter	The torque converter is the device that increases the engine torque as well as the conventional CVT and transmits it to the transaxle.
Oil pump	The efficiency of pump discharge rate at low-rpm and the optimization at high-rpm have been increased through the oil pump drive chain by adopting a vane-type oil pump controlled by the engine. Discharged oil from oil pump is transmitted to the control valve. It is used as the oil of primary and secondary pulley operation and the oil of clutch operation and the lubricant for each part.
Planetary gear	Perform the transmission of drive power and the switching of forward/backward movement.
Forward clutch	
Reverse brake	
Primary pulley	It is composed of a pair of pulleys (the groove width is changed freely in the axial direction) and the steel belt (the steel star wheels are placed continuously and the belt is guided with the multilayer steel rings on both sides). The groove width changes according to wrapping radius of steel belt and pulley from low status to over-drive status continuously with non-step. It is controlled with the oil pressures of primary pulley and secondary pulley.
Secondary pulley	
Steel belt	
Output gear	The drive power from the secondary pulley returns the deceleration gears [primary deceleration (output gear/idler gear pair) and secondary deceleration (reduction gear/final gear pair)]. It is transmitted from differential to drive wheel.
Idler gear	
Reduction gear	
Final gear	
Differential	
Manual shaft	The parking rod rotates the parking pole and the parking pole engages with the parking gear when the manual shaft is in P position. As a result the parking gear and the output axis are fixed.
Parking rod	
Parking pawl	
Parking gear	

HYDRAULIC CONTROL SYSTEM

System Diagram

INFOID:000000006390651



System Description

INFOID:000000006390652

The hydraulic control mechanism consists of the oil pump directly driven by the engine, the hydraulic control valve that controls line pressure and transmission, and the input signal line.

LINE PRESSURE AND SECONDARY PRESSURE CONTROL

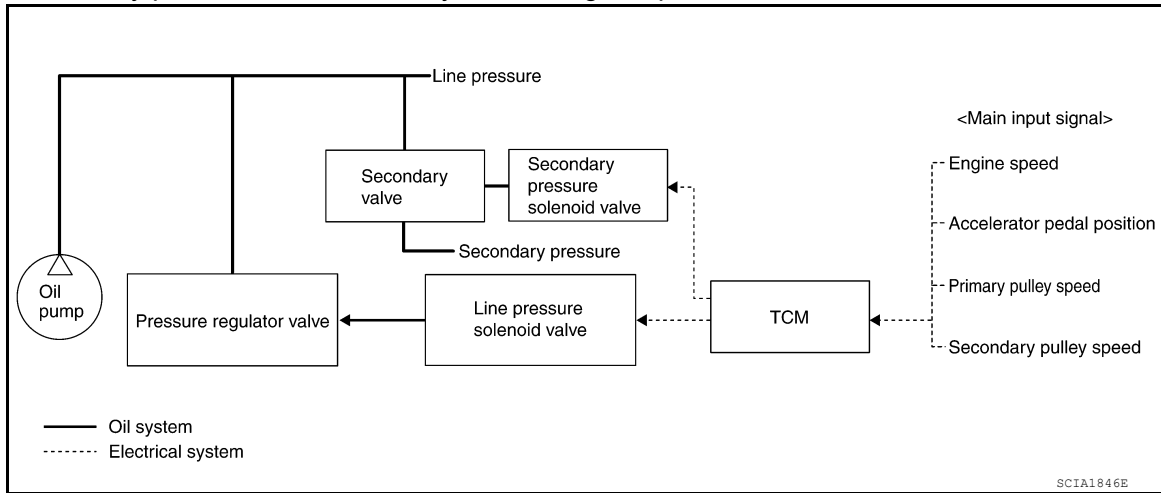
- When an input torque signal equivalent to the engine drive force is sent from the ECM to the TCM, the TCM controls the line pressure solenoid valve and secondary pressure solenoid valve.

HYDRAULIC CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

- This line pressure solenoid controls the pressure regulator valve as the signal pressure and adjusts the pressure of the operating oil discharged from the oil pump to the line pressure most appropriate to the driving state. Secondary pressure is controlled by decreasing line pressure.



Normal Control

Optimize the line pressure and secondary pressure, depending on driving conditions, on the basis of the throttle position, the engine speed, the primary pulley (input) revolution speed, the secondary pulley (output) revolution speed, the brake signal, the transmission range switch signal, the lock-up signal, the voltage, the target gear ratio, the fluid temperature, and the fluid pressure.

Feedback Control

When controlling the normal fluid pressure or the selected fluid pressure, the secondary pressure can be set more accurately by using the fluid pressure sensor to detect the secondary pressure and controlling the feedback.

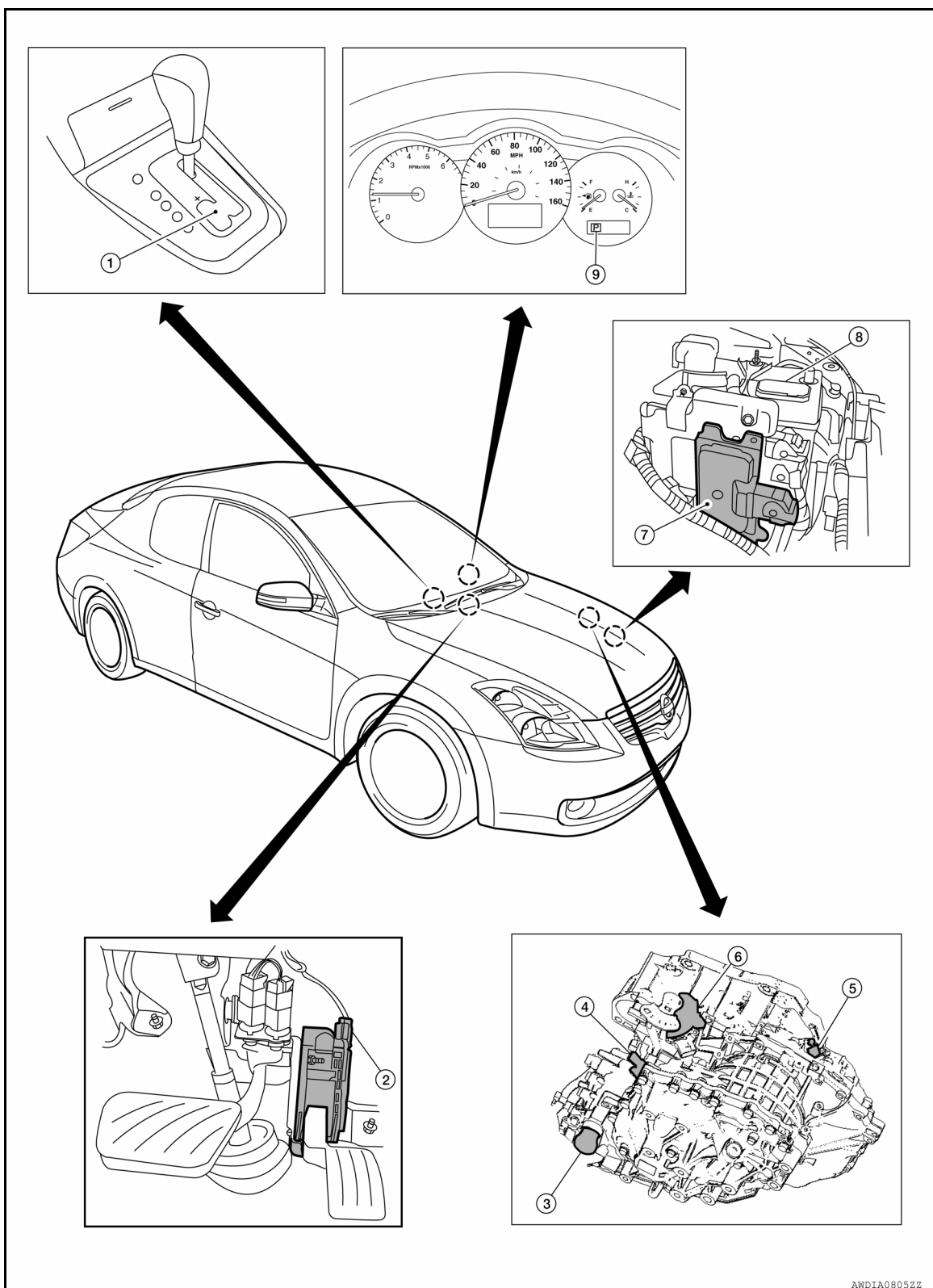
HYDRAULIC CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Coupe

INFOID:000000006390653



- | | | |
|--------------------------------|--|---|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator Manual mode indicator |

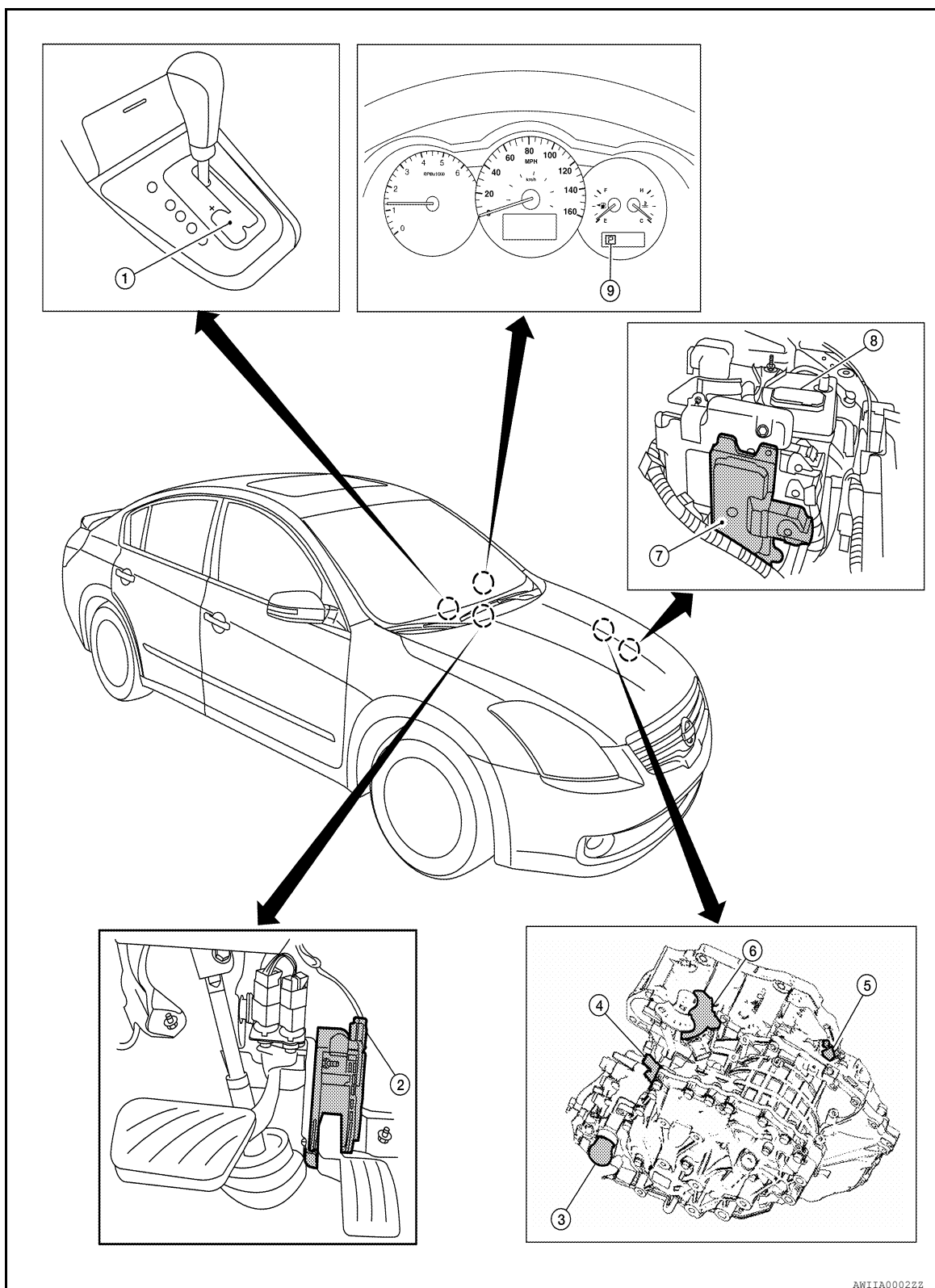
HYDRAULIC CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Sedan

INFOID:000000006390654



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- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

HYDRAULIC CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Description

INFOID:000000006390655

TRANSAXLE ASSEMBLY

Name	Function
Torque converter regulator valve	Optimizes the supply pressure for the torque converter depending on driving conditions.
Pressure regulator valve	Optimizes the discharge pressure from the oil pump depending on driving conditions.
TCC control valve	<ul style="list-style-type: none"> Activates or deactivate the lock-up. Lock-up smoothly by opening lock-up operation excessively.
TCC solenoid valve	TM-314
Shift control valve	Controls flow-in/out of line pressure from the primary pulley depending on the stroke difference between the stepping motor and the primary pulley.
Secondary valve	Controls the line pressure from the secondary pulley depending on operating conditions.
Clutch regulator valve	Adjusts the clutch operating pressure depending on operating conditions.
Secondary pressure solenoid valve	TM-322
Line pressure solenoid valve	TM-316
Step motor	TM-346
Manual valve	Transmits the clutch operating pressure to each circuit in accordance with the selected position.
Select control valve	Engages forward clutch, reverse brake smoothly depending on select operation.
Select switch valve	Switches torque converter clutch solenoid valve control pressure use to torque converter clutch control valve or select control valve.
Lock-up select solenoid valve	TM-343
Primary speed sensor	TM-302
Secondary speed sensor	TM-306
Transmission range switch	TM-302
Primary pulley	TM-264
Secondary pulley	
Forward clutch	
Torque converter	

EXCEPT TRANSAXLE ASSEMBLY

Name	Function
TCM	Judges the vehicle driving status according to the signal from each sensor and controls the non-step transmission mechanism properly.
Accelerator pedal position sensor	TM-337

CONTROL SYSTEM

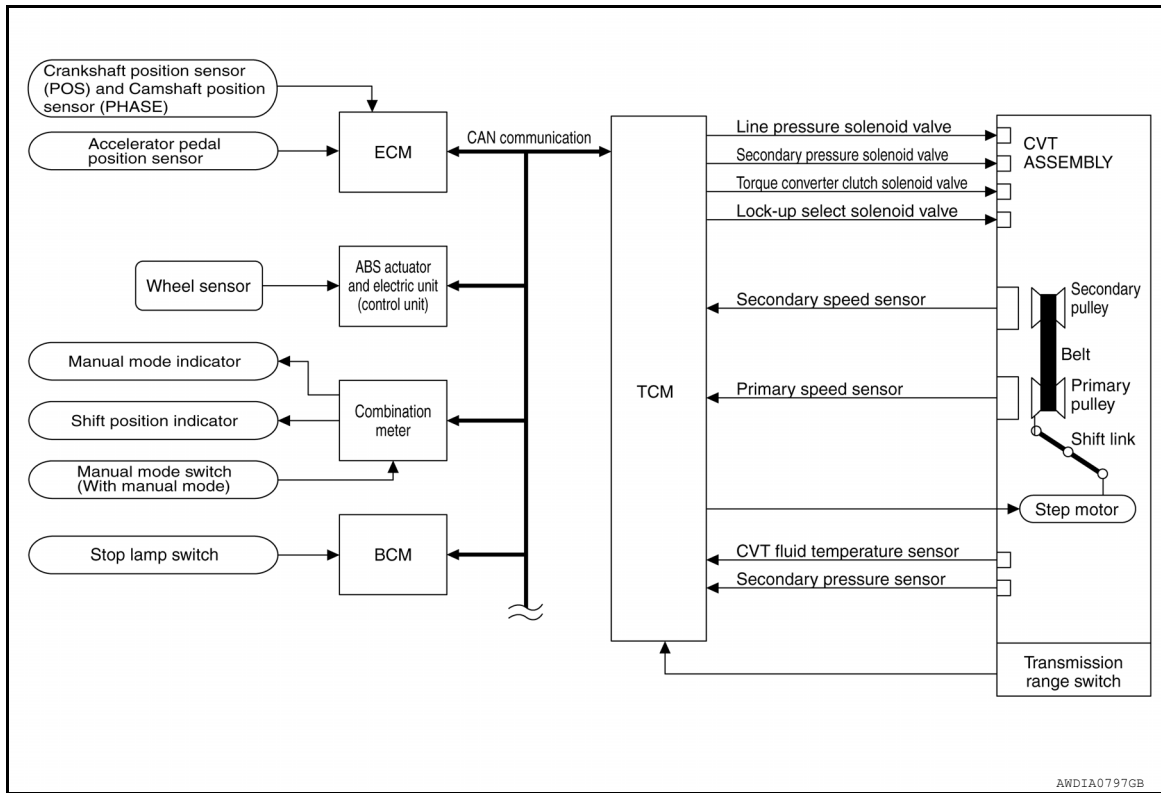
< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

CONTROL SYSTEM

System Diagram

INFOID:000000006390656



System Description

INFOID:000000006390657

The function of the TCM is to:

- Receive input signals sent from various switches and sensors.
- Determine required line pressure, shifting point, and lock-up operation.
- Send required output signals to the step motor and the respective solenoids.

CONTROL SYSTEM OUTLINE

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

SENSORS (or SIGNAL)		TCM		ACTUATORS
Transmission range switch Accelerator pedal position signal Closed throttle position signal Engine speed signal CVT fluid temperature sensor Vehicle speed signal Manual mode signal Stop lamp switch signal Primary speed sensor Secondary speed sensor Secondary pressure sensor	⇒	Shift control Line pressure control Primary pressure control Secondary pressure control Lock-up control Engine brake control Vehicle speed control Fail-safe control Self-diagnosis CONSULT-III communication line Duet-EA control CAN system On board diagnosis	⇒	Step motor Torque converter clutch solenoid valve Lock-up select solenoid valve Line pressure solenoid valve Secondary pressure solenoid valve Manual mode indicator Shift position indicator CVT indicator lamp Starter relay

*: Without manual mode.

INPUT/OUTPUT SIGNAL OF TCM

CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Control item		Fluid pressure control	Select control	Shift control	Lock-up control	CAN communication control	Fail-safe function(*2)
Input	Transmission range switch	X	X	X	X	X	X
	Accelerator pedal position signal (*1)	X	X	X	X	X	X
	Closed throttle position signal(*1)	X		X	X	X	
	Engine speed signal(*1)	X	X		X	X	X
	CVT fluid temperature sensor	X	X	X	X		X
	Manual mode signal(*1)	X		X	X	X	X
	Stop lamp switch signal(*1)	X		X	X	X	
	Primary speed sensor	X		X	X	X	X
	Secondary speed sensor	X	X	X	X	X	X
	Secondary pressure sensor	X		X			X
Output	Step motor			X			X
	TCC solenoid valve		X		X		X
	Lock-up select solenoid valve		X		X		X
	Line pressure solenoid valve	X	X	X			X
	Secondary pressure solenoid valve	X		X			X

*1: Input by CAN communications.

*2: If these input and output signals are defferent, the TCM triggers the fail-safe function.

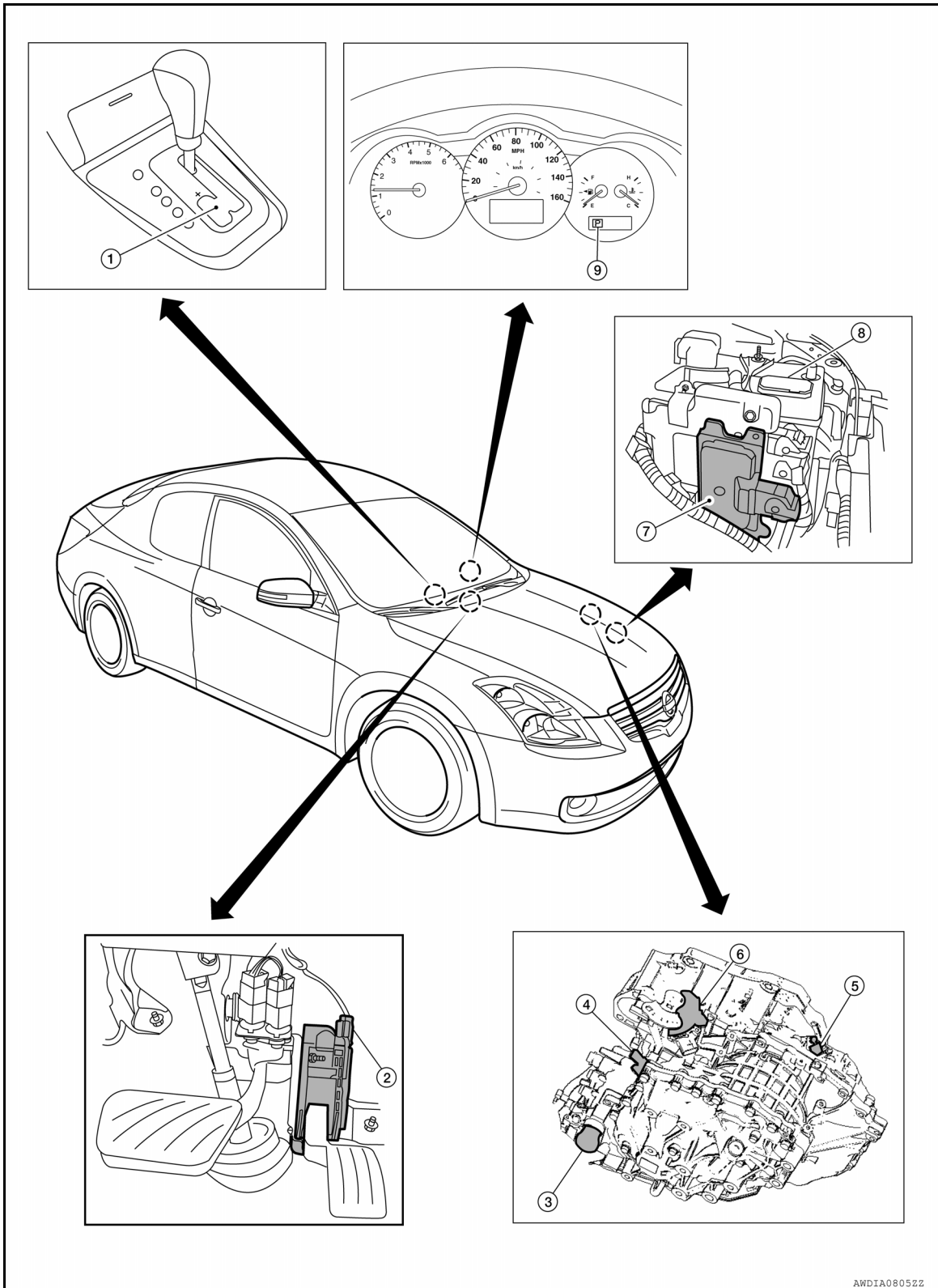
CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Coupe

INFOID:000000006390658



- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

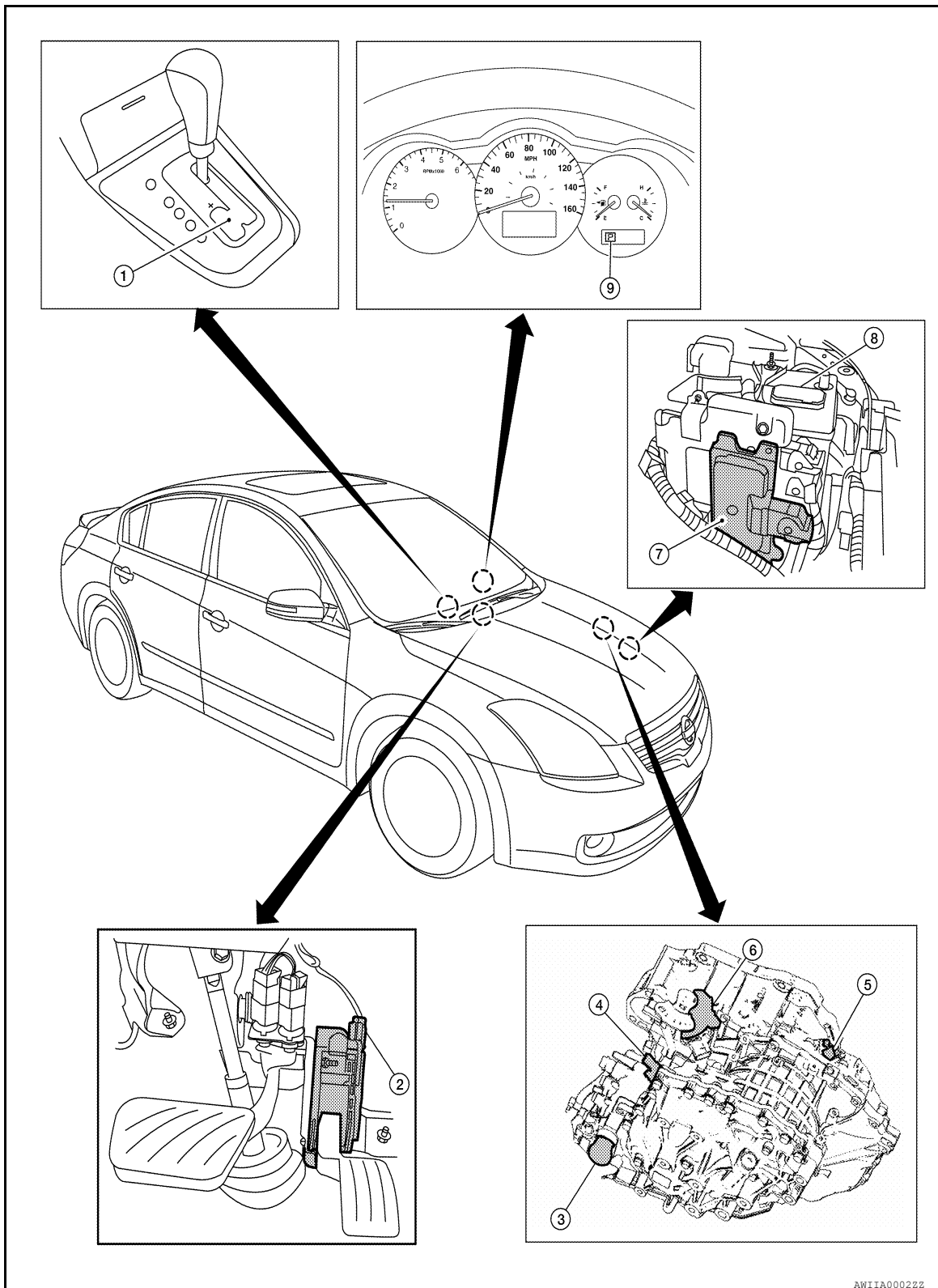
CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Sedan

INFOID:000000006390659



- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

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CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Description

INFOID:000000006390660

TRANSAXLE ASSEMBLY

Name	Function
Transmission range switch	TM-296
CVT fluid temperature sensor	TM-299
Primary speed sensor	TM-302
Secondary speed sensor	TM-306
Secondary pressure sensor	TM-327
Step motor	TM-346
TCC solenoid valve	TM-312
Lock-up select solenoid valve	TM-343
Line pressure solenoid valve	TM-316
Secondary pressure solenoid valve	TM-320

EXCEPT TRANSAXLE ASSEMBLY

Name	Function
TCM	Optimally controls continuously variable transmission system by judging driving conditions based on signals from each sensor.
Stop lamp switch	TM-293

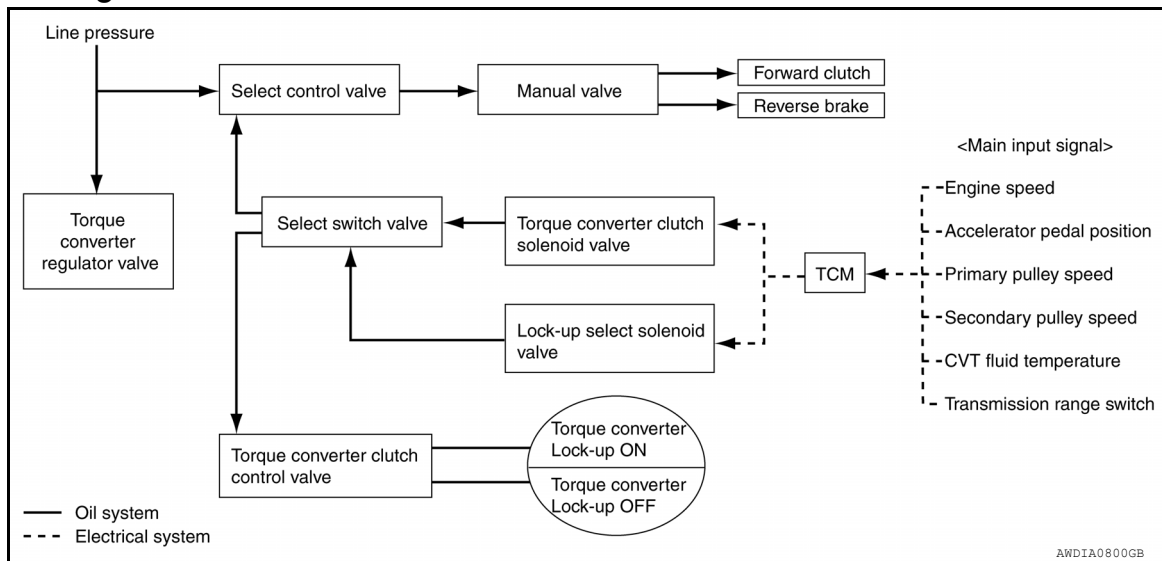
LOCK-UP AND SELECT CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

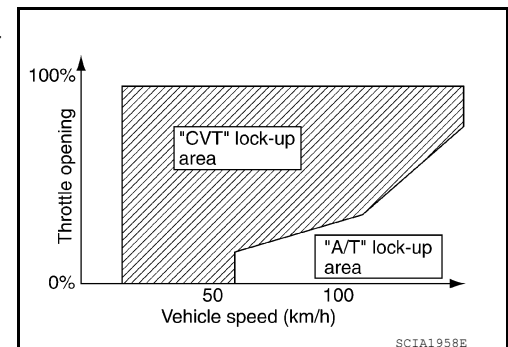
LOCK-UP AND SELECT CONTROL SYSTEM

System Diagram



System Description

- The torque converter clutch piston in the torque converter is engaged to eliminate torque converter slip to increase power transmission efficiency.
- The torque converter clutch control valve operation is controlled by the torque converter clutch solenoid valve, which is controlled by a signal from TCM. The torque converter clutch control valve engages or releases the torque converter clutch piston.
- When shifting between “N” (“P”) ⇒ “D” (“R”), torque converter clutch solenoid controls engagement power of forward clutch and reverse brake.
- The lock-up applied gear range was expanded by locking up the torque converter at a lower vehicle speed than conventional CVT models.



TORQUE CONVERTER CLUTCH AND SELECT CONTROL VALVE CONTROL

Lock-up Released

In the lock-up released state, the torque converter clutch control valve is set into the unlocked state by the torque converter clutch solenoid and the lock-up apply pressure is drained. In this way, the torque converter clutch piston is not coupled.

Lock-up Applied

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

Select Control

When shifting between “N” (“P”) ⇒ “D” (“R”), optimize the operating pressure on the basis of the throttle position, the engine speed, and the secondary pulley (output) revolution speed to lessen the shift shock.

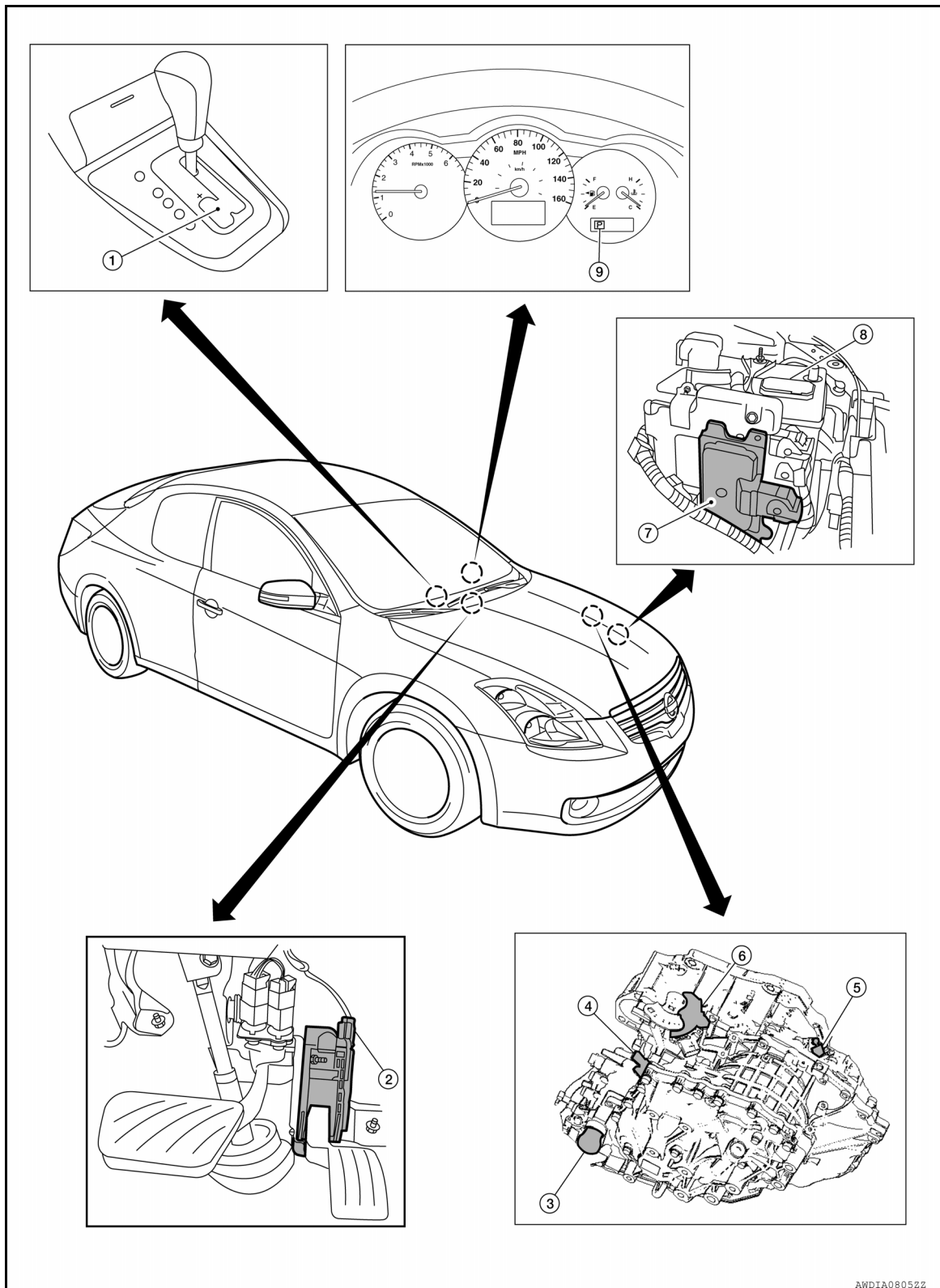
LOCK-UP AND SELECT CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Coupe

INFOID:000000006390663



- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

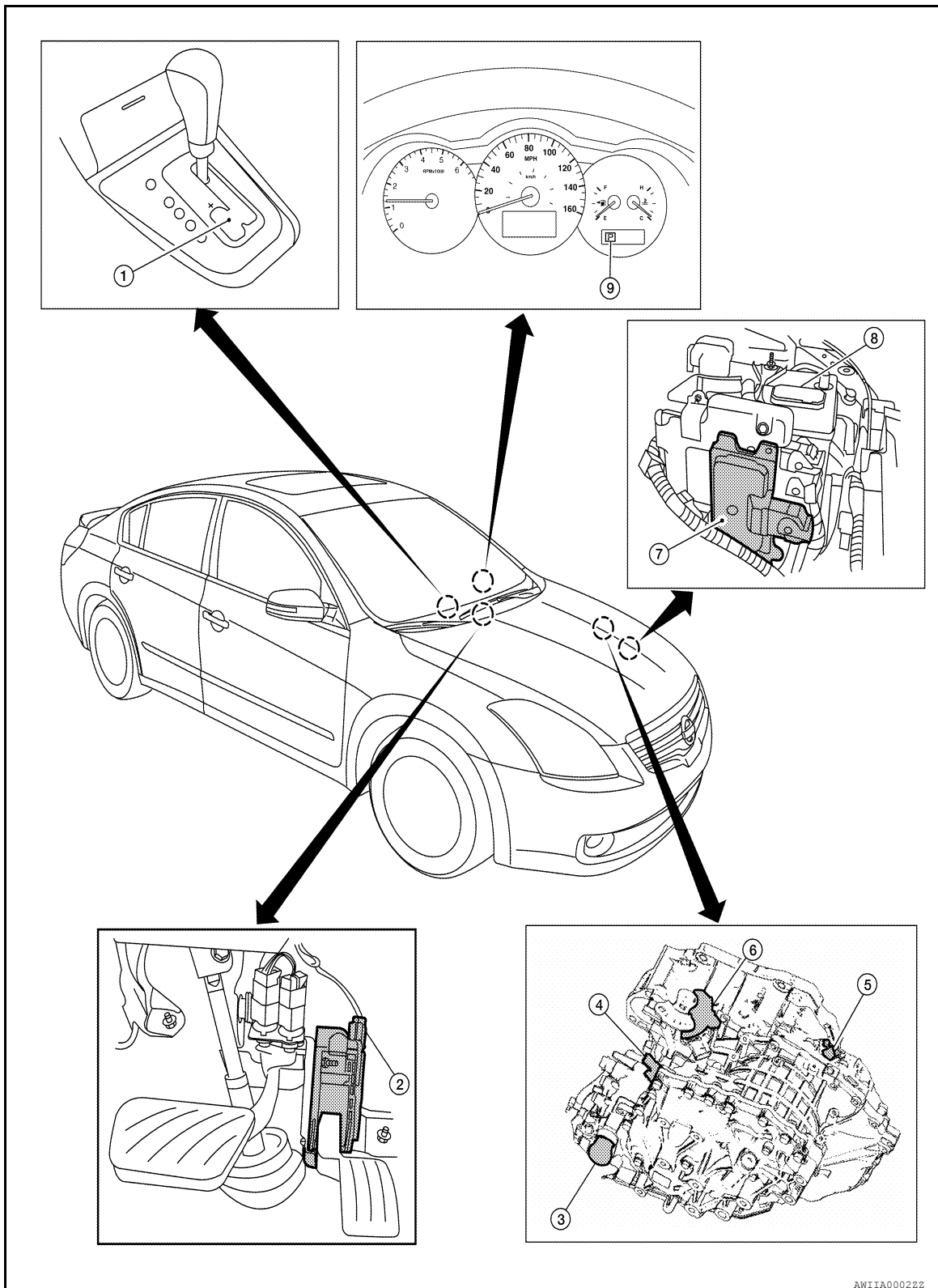
LOCK-UP AND SELECT CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Sedan

INFOID:000000006390664



- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

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LOCK-UP AND SELECT CONTROL SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Description

INFOID:000000006390665

TRANSAXLE ASSEMBLY

Name	Function
Torque converter regulator valve	TM-269
TCC control valve	
Select control valve	
Select switch valve	
Manual valve	
TCC solenoid valve	TM-312
Lock-up select solenoid valve	TM-343
Primary speed sensor	TM-302
Secondary speed sensor	TM-306
CVT fluid temperature sensor	TM-299
Transmission range switch	TM-296
Forward clutch	TM-264
Reverse brake	
Torque converter	

EXCEPT TRANSAXLE ASSEMBLY

Name	Function
TCM	TM-274
Accelerator pedal position sensor	TM-337

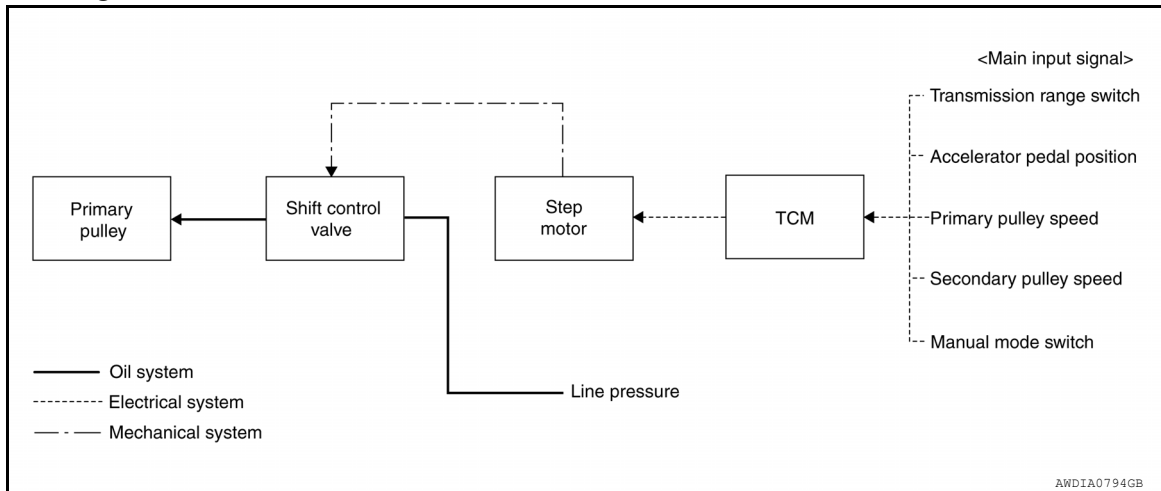
SHIFT MECHANISM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

SHIFT MECHANISM

System Diagram



NOTE:

The gear ratio is set for every position separately.

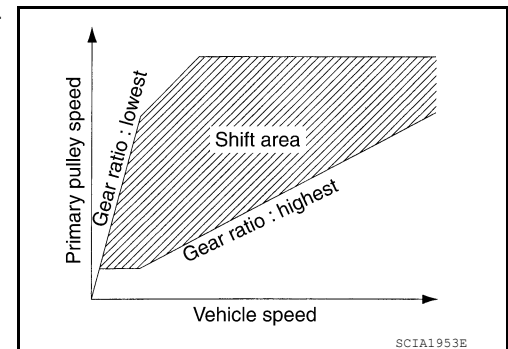
System Description

INFOID:000000006390667

In order to select the gear ratio which can obtain the driving force in accordance with driver's intention and the vehicle condition, TCM monitors the driving conditions, such as the vehicle speed and the throttle position and selects the optimum gear ratio, and determines the gear change steps to the gear ratio. Then send the command to the step motor, and control the flow-in/flow-out of line pressure from the primary pulley to determine the position of the moving-pulley and control the gear ratio.

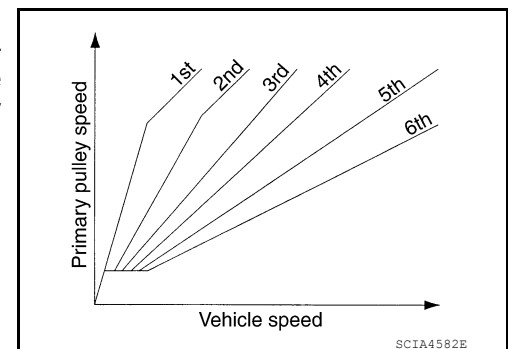
"D" POSITION

Shifting over all the ranges of gear ratios from the lowest to the highest.



"M" POSITION

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



DOWNHILL ENGINE BRAKE CONTROL (AUTO ENGINE BRAKE CONTROL)

When downhill is detected with the accelerator pedal released, the engine brake will be strengthened up by downshifting so as not to accelerate the vehicle more than necessary.

ACCELERATION CONTROL

SHIFT MECHANISM

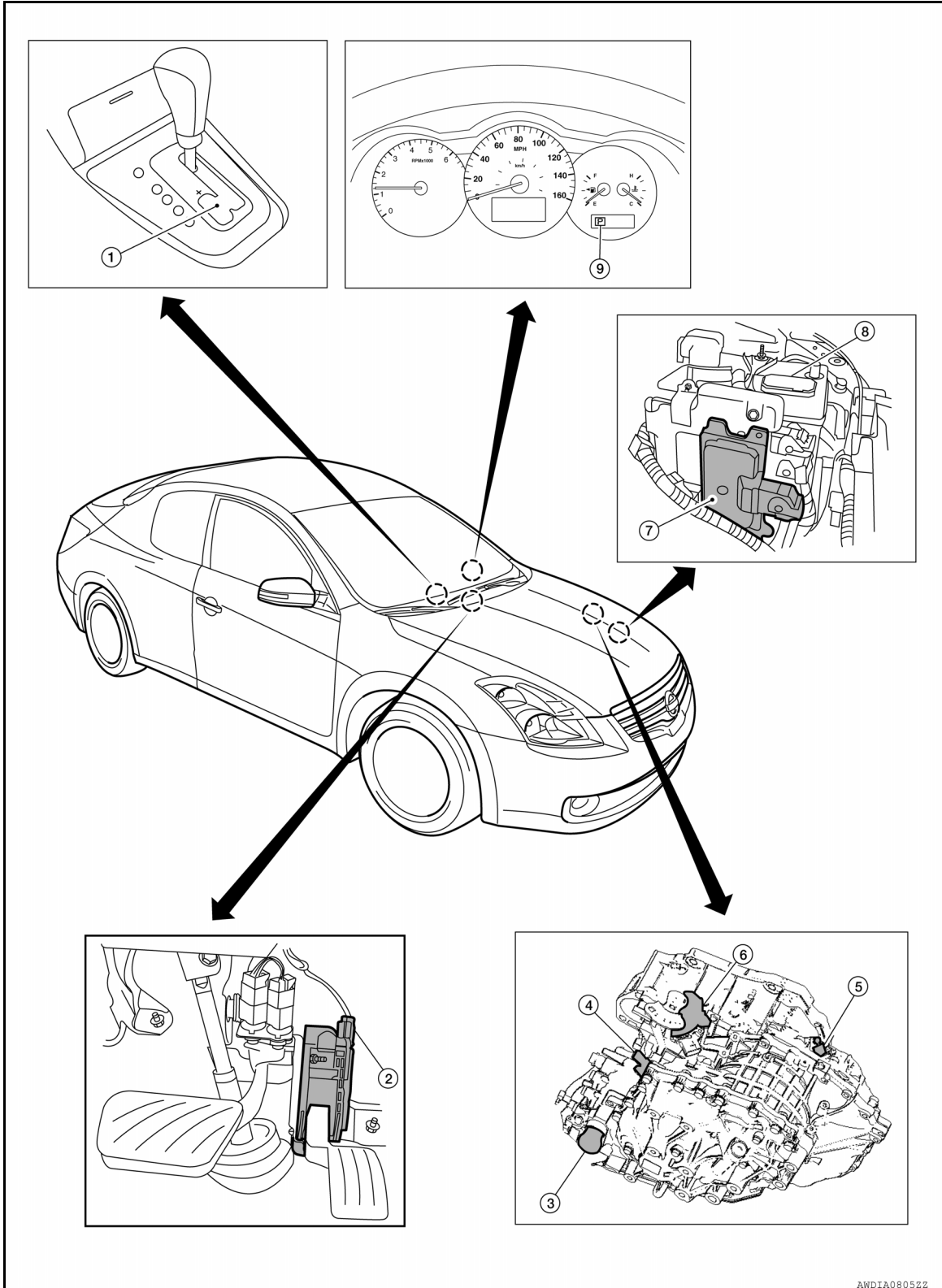
< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

According to vehicle speed and a change of accelerator pedal angle, driver's request for acceleration and driving scene are judged. This function assists improvement in acceleration feeling by making the engine speed proportionate to the vehicle speed. And a shift map which can gain a larger driving force is available for compatibility of mileage with driveability.

Component Parts Location - Coupe

INFOID:000000006390668



AWDIA08052Z

SHIFT MECHANISM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

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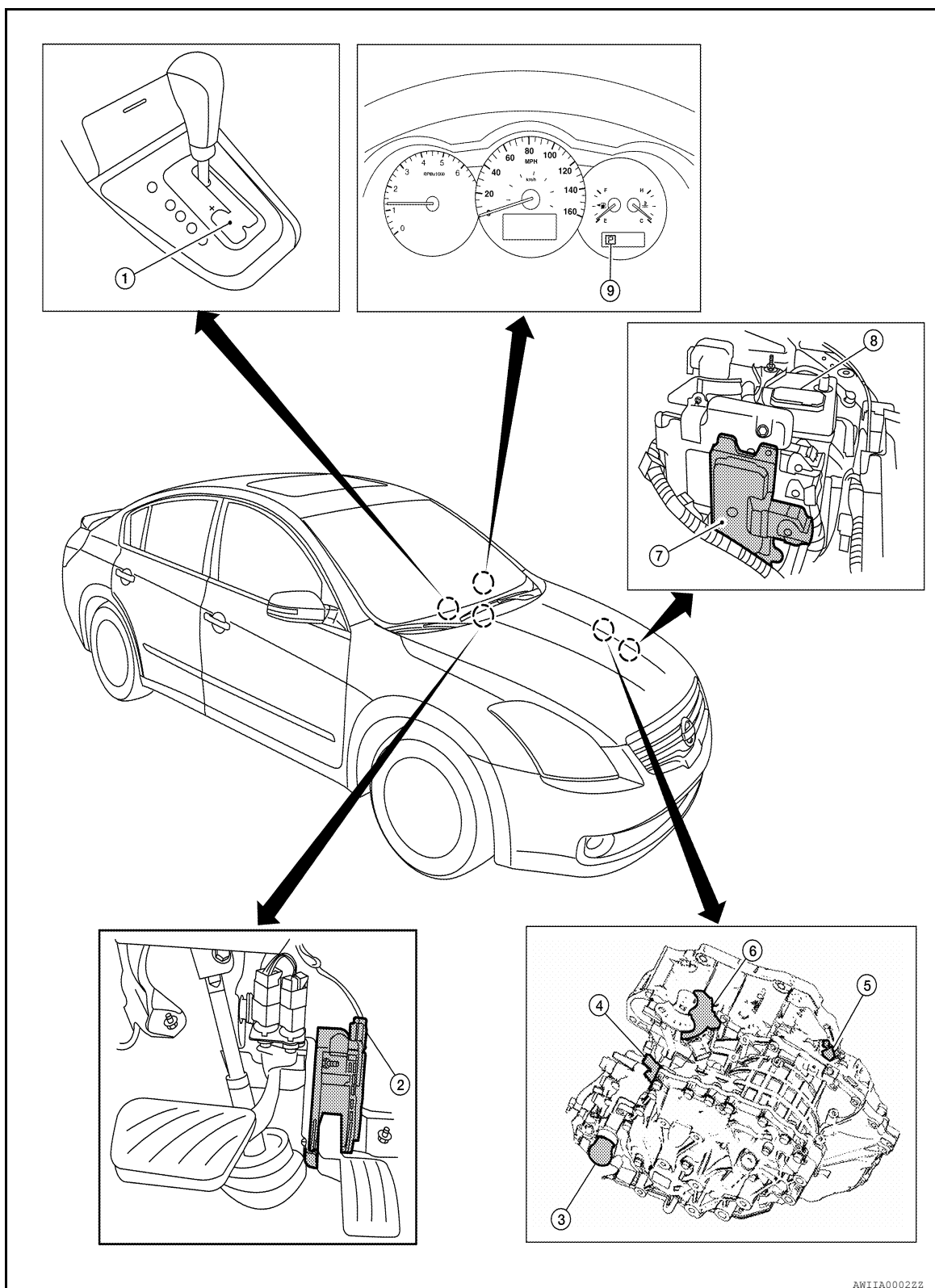
SHIFT MECHANISM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Parts Location - Sedan

INFOID:000000006390669



AWI1A0002ZZ

- | | | |
|--------------------------------|--|--|
| 1. CVT shift selector assembly | 2. Accelerator pedal position (APP) sensor | 3. CVT unit harness connector |
| 4. Primary speed sensor | 5. Secondary speed sensor | 6. Transmission range switch |
| 7. TCM | 8. Battery | 9. Shift position indicator
Manual mode indicator |

SHIFT MECHANISM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component Description

INFOID:000000006390670

TRANSAXLE ASSEMBLY

Item	Functoin
Transmission range switch	TM-296
Primary speed sensor	TM-302
Secondry speed sensor	TM-306
Step motor	TM-346
Shift control valve	TM-269
Primary pulley	TM-264
Secondary pulley	TM-264

EXCEPT TRANSAXLE ASSEMBLY

Item	Functoin
TCM	TM-274

SHIFT LOCK SYSTEM

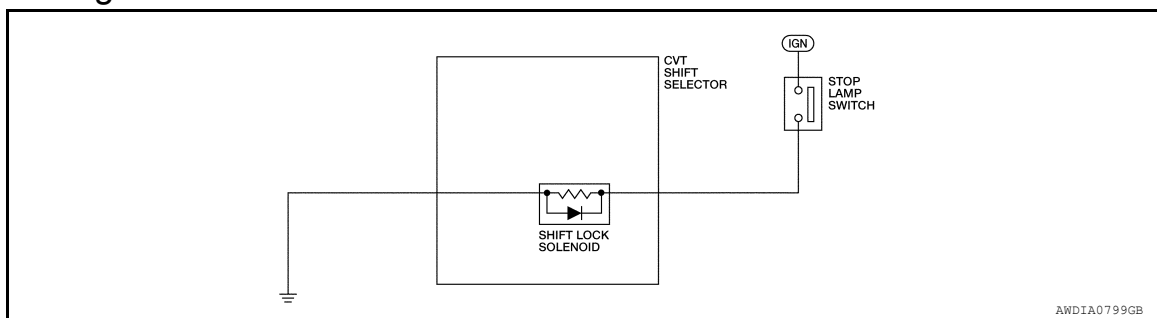
< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

SHIFT LOCK SYSTEM

System Diagram

INFOID:000000006390671



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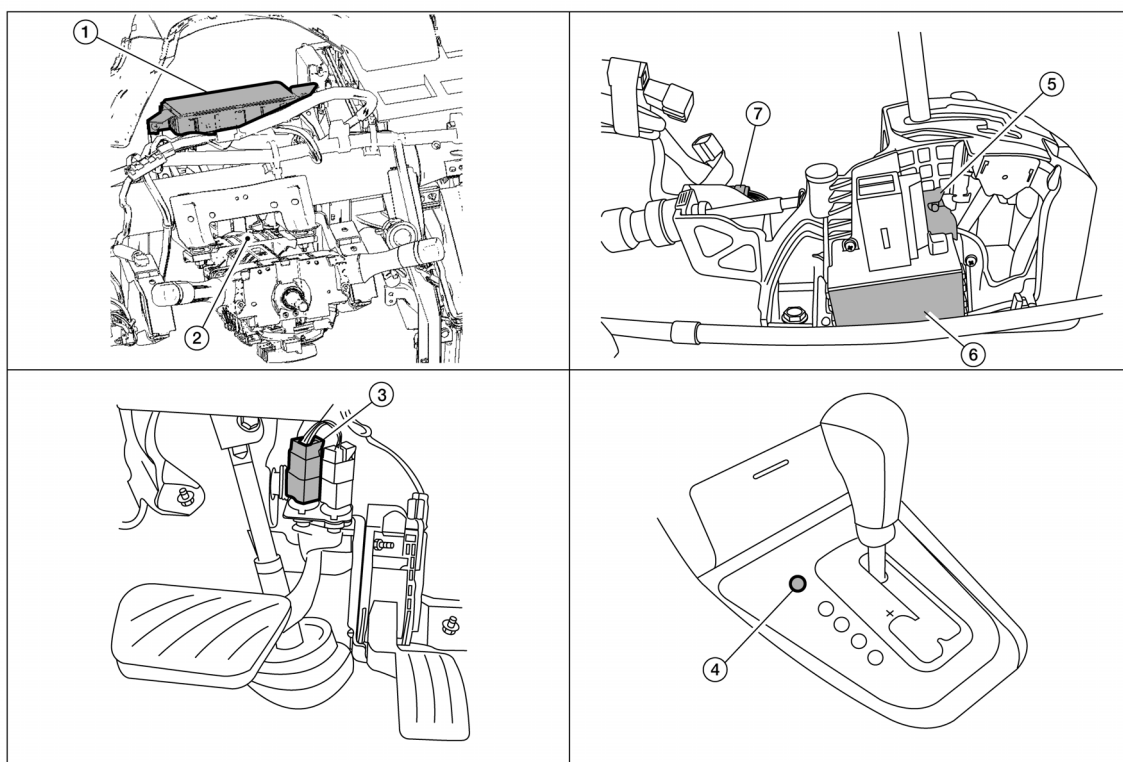
System Description

INFOID:000000006390672

The selector lever cannot be shifted from “P” position to any other position unless the ignition switch is in the ON position and the brake pedal is depressed.

Component Parts Location

INFOID:000000006390673



AWDIA0891ZZ

- | | | |
|--|-------------------------|------------------------|
| 1. BCM (view with instrument panel re- | 2. Steering column | 3. Stop lamp switch |
| 4. Shift lock release button | 5. Park position switch | 6. Shift lock solenoid |
| 7. CVT shift selector connector | | |

Component Description

INFOID:000000006390674

SHIFT LOCK SYSTEM

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Component			Function
CVT shift selector	Shift lock solenoid	Shift lock solenoid	TM-284, "System Description"
		Lock plate	The lock plate restricts the position pin stroke by selector button operation according to the shift lock unit status.
		Position pin	The position pin, linking with the selector button, restricts the selector lever movement.
	Shift lock release button		Pressing the shift lock release button cancels the shift lock forcibly.

A

B

C

TM

E

F

G

H

I

J

K

L

M

N

O

P

DIAGNOSIS SYSTEM (TCM)

CONSULT-III Function (TRANSMISSION)

INFOID:000000006390675

CONSULT-III can display each diagnostic item using the diagnostic test modes shown below.

FUNCTION

Diagnostic test mode	Function
Work support	This mode enables a technician to adjust some devices faster and more accurately by following the indications on CONSULT-III.
Self-diagnostic results	Self-diagnostic results can be read and erased quickly.
Data monitor	Input/Output data in the TCM can be read.
CAN diagnostic support monitor	The results of transmit/receive diagnosis of CAN communication can be read.
CALIB data	Characteristic information for TCM and CVT assembly can be read. Do not use, but displayed.
Function test	Performed by CONSULT-III instead of a technician to determine whether each system is "OK" or "NG".
ECU part number	TCM part number can be read.

WORK SUPPORT MODE

Display Item List

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

Engine Brake Adjustment

"ENGINE BRAKE LEVEL"

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

OFF: Engine brake level control is deactivated.

CAUTION:

Mode of "+1", "0", "-1", "-2", "OFF" can be selected by pressing the "UP", "DOWN" on CONSULT-III screen. However, do not select mode other than "0" and "OFF". If the "+1" or "-1" or "-2" is selected, that might cause the irregular driveability.

Check CVT Fluid Deterioration Date

"CVTF DETERIORATION DATE"**More than 210000:**

It is necessary to change CVT fluid.

Less than 210000:

It is not necessary to change CVT fluid.

CAUTION:

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

SELF-DIAGNOSTIC RESULT MODE

After performing self-diagnosis, place check marks for results on the [TM-253, "Diagnostic Work Sheet"](#). Reference pages are provided following the items.

Display Items List

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

X: Applicable —: Not applicable

Items (CONSULT-III screen terms)	Malfunction is detected when...	TCM self-diagnosis	Reference
		"TRANSMISSION" with CONSULT-III	
CAN COMM CIRCUIT	When TCM is not transmitting or receiving CAN communication signal for 2 seconds or more.	U1000	TM-291
CONTROL UNIT (CAN)	When detecting error during the initial diagnosis of CAN controller to TCM.	U1010	TM-292
BRAKE SWITCH B	When the brake switch does not switch to ON or OFF.	P0703	TM-293
T/M RANGE SENSOR A	TCM does not receive the correct voltage signal (based on the gear position) from the switch.	P0705	TM-296
FLUID TEMP SENSOR A	During running, the CVT fluid temperature sensor signal voltage is excessively high or low.	P0710	TM-299
INPUT SPEED SENSOR A	<ul style="list-style-type: none"> Primary speed sensor signal is not input due to an open circuit. An unexpected signal is input when vehicle is being driven. 	P0715	TM-302
OUTPUT SPEED SENSOR	<ul style="list-style-type: none"> Signal from Secondary speed sensor not input due to open or short circuit. Unexpected signal input during running. 	P0720	TM-306
ENGINE SPEED	<ul style="list-style-type: none"> TCM does not receive the CAN communication signal from the ECM. Engine speed is too low while driving. 	P0725	TM-310
INCORRECT GR RATIO	Unexpected gear ratio detected.	P0730	TM-311
TORQUE CONVERTER	Normal voltage not applied to solenoid due to open or short circuit.	P0740	TM-312
TORQUE CONVERTER	<ul style="list-style-type: none"> CVT cannot perform lock-up even if electrical circuit is good. TCM detects as irregular by comparing difference value with slip rotation. There is big difference engine speed and primary speed when TCM lock-up signal is on. 	P0744	TM-314
PC SOLENOID A	<ul style="list-style-type: none"> Normal voltage not applied to solenoid due to open or short circuit. TCM detects as irregular by comparing target value with monitor value. 	P0745	TM-316
PC SOLENOID A	Unexpected gear ratio was detected in the LOW side due to excessively low line pressure.	P0746	TM-318
PC SOLENOID B	Secondary pressure is too high or too low compared with the commanded value while driving.	P0776	TM-320
PC SOLENOID B	<ul style="list-style-type: none"> Normal voltage not applied to solenoid due to cut line, short, or the like. TCM detects as irregular by comparing target value with monitor value. 	P0778	TM-322
UP/DOWN SHIFT SWITCH	When an impossible pattern of switch signals is detected, a malfunction is detected.	P0826	TM-324
FLUID PRESS SEN/SW A	Signal voltage of the secondary pressure sensor is too high or too low while driving.	P0840	TM-327
FLUID PRESS SEN/SW A	Correlation between the values of the secondary pressure sensor and the primary pressure sensor is out of specification.	P0841	TM-330
FLUID PRESS LOW	Secondary fluid pressure is too low compared with the commanded value while driving.	P0868	TM-332
TCM	<ul style="list-style-type: none"> When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops. This is not a malfunction message (Whenever shutting OFF a power supply to the TCM, this message appears on the screen). 	P1701	TM-334
TP SENSOR	TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM.	P1705	TM-337
VEHICLE SPEED*1	<ul style="list-style-type: none"> CAN communication with the ABS actuator and the electric unit (control unit) is malfunctioning. There is a great difference between the vehicle speed signal from the ABS actuator and the electric unit (control unit), and the vehicle speed sensor signal. 	P1722	TM-338

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Items (CONSULT-III screen terms)	Malfunction is detected when...	TCM self-diagnosis	Reference
		"TRANSMISSION" with CONSULT-III	
SPEED SENSOR	A rotation sensor error is detected because the gear does not change in accordance with the position of the stepping motor. CAUTION: One of the "P0720", the "P0715" or the "P0725" is displayed with the DTC at the same time.	P1723	TM-340
THROTTLE CONTROL SIG	The electronically controlled throttle for ECM is malfunctioning.	P1726	TM-342
SLCT SOLENOID	<ul style="list-style-type: none"> Normal voltage not applied to solenoid due to cut line, short, or the like. TCM detects as irregular by comparing target value with monitor value. 	P1740	TM-343
LINE PRESS CONTROL	TCM detects the unexpected line pressure.	P1745	TM-345
STEP MOTOR	Each coil of the step motor is not energized properly due to an open or a short.	P1777	TM-346
STEP MOTOR	There is a great difference between the number of steps for the stepping motor and for the actual gear ratio.	P1778	TM-349
NO DTC IS DETECTED: FURTHER TESTING MAY BE REQUIRED	No NG item has been detected.	X	—

*1: Models without ABS does not indicate.

DATA MONITOR MODE

Display Items List

X: Standard, —: Not applicable, ▼: Option

Monitored item (Unit)	Monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
VSP SENSOR (km/h or mph)	X	—	▼	Secondary speed sensor
ESTM VSP SIG (km/h or mph)	X	—	▼	Models without ABS dose not indicate.
PRI SPEED SEN (rpm)	X	—	▼	—
ENG SPEED SIG (rpm)	X	—	▼	—
SEC HYDR SEN (V)	X	—	▼	—
PRI HYDR SEN (V)	X	—	▼	Not mounted but displayed.
ATF TEMP SEN (V)	X	—	▼	CVT fluid temperature sensor
VIGN SEN (V)	X	—	▼	—
VEHICLE SPEED (km/h or mph)	—	X	▼	Vehicle speed recognized by the TCM.
PRI SPEED (rpm)	—	X	▼	Primary pulley speed
SEC SPEED (rpm)	—	—	▼	Secondary pulley speed
ENG SPEED (rpm)	—	X	▼	—
SLIP REV (rpm)	—	X	▼	Difference between engine speed and primary pulley speed.
GEAR RATIO	—	X	▼	—
G SPEED (G)	—	—	▼	—

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Monitored item (Unit)	Monitor item selection			Remarks
	ECU IN-PUT SIG-NALS	MAIN SIG-NALS	SELEC-TION FROM MENU	
ACC PEDAL OPEN (0.0/8)	X	X	▼	Degree of opening for accelerator recognized by the TCM. For fail-safe operation, the specific value used for control is displayed.
TRQ RTO	—	—	▼	—
SEC PRESS (MPa)	—	X	▼	—
PRI PRESS (MPa)	—	X	▼	Not mounted but displayed.
ATF TEMP	—	X	▼	—
DSR REV (rpm)	—	—	▼	—
DGEAR RATIO	—	—	▼	—
DSTM STEP (step)	—	—	▼	—
STM STEP (step)	—	X	▼	—
LU PRS (MPa)	—	—	▼	—
LINE PRS (MPa)	—	—	▼	—
TGT SEC PRESS (MPa)	—	—	▼	—
ISOLT1 (A)	—	X	▼	Torque converter clutch solenoid valve output current
ISOLT2 (A)	—	X	▼	Line pressure solenoid valve output current
ISOLT3 (A)	—	X	▼	Secondary pressure solenoid valve output current
SOLMON1 (A)	X	X	▼	Torque converter clutch solenoid valve monitor current
SOLMON2 (A)	X	X	▼	Line pressure solenoid valve monitor current
SOLMON3 (A)	X	X	▼	Secondary pressure solenoid valve monitor current
P POSITION SW (ON/OFF)	X	—	▼	—
R POSITION SW (ON/OFF)	X	—	▼	—
N POSITION SW (ON/OFF)	X	—	▼	—
D POSITION SW (ON/OFF)	X	—	▼	—
L POSITION SW (ON/OFF)	X	—	▼	—
BRAKE SW (ON/OFF)	X	X	▼	Stop lamp switch (Signal input with CAN communications)
FULL SW (ON/OFF)	X	X	▼	Not mounted but displayed.
IDLE SW (ON/OFF)	X	X	▼	Signal input with CAN communications
SPORT MODE SW (ON/OFF)	X	X	▼	

DIAGNOSIS SYSTEM (TCM)

< SYSTEM DESCRIPTION >

[CVT: RE0F10A]

Monitored item (Unit)	Monitor item selection			Remarks
	ECU INPUT SIGNALS	MAIN SIGNALS	SELECTION FROM MENU	
STRDWNSW (ON/OFF)	X	—	▼	Not mounted but displayed.
STRUPSW (ON/OFF)	X	—	▼	
DOWNLVR (ON/OFF)	X	—	▼	
UPLVR (ON/OFF)	X	—	▼	
NONMMODE (ON/OFF)	X	—	▼	
MMODE (ON/OFF)	X	—	▼	
INDLRNG (ON/OFF)	—	—	▼	—
INDDRNG (ON/OFF)	—	—	▼	"D" position indicator output
INDNRNG (ON/OFF)	—	—	▼	"N" position indicator output
INDRRNG (ON/OFF)	—	—	▼	"R" position indicator output
INDPRNG (ON/OFF)	—	—	▼	"P" position indicator output
CVT LAMP (ON/OFF)	—	—	▼	—
SPORT MODE IND (ON/OFF)	—	—	▼	—
MMODE IND (ON/OFF)	—	—	▼	—
SMCOIL D (ON/OFF)	—	—	▼	Step motor coil "D" energizing status
SMCOIL C (ON/OFF)	—	—	▼	Step motor coil "C" energizing status
SMCOIL B (ON/OFF)	—	—	▼	Step motor coil "B" energizing status
SMCOIL A (ON/OFF)	—	—	▼	Step motor coil "A" energizing status
LUSEL SOL OUT (ON/OFF)	—	—	▼	—
REV LAMP (ON/OFF)	—	X	▼	—
LUSEL SOL MON (ON/OFF)	—	—	▼	—
VDC ON (ON/OFF)	X	—	▼	—
TCS ON (ON/OFF)	X	—	▼	—
ABS ON (ON/OFF)	X	—	▼	Models without ABS dose not indicate.
ACC ON (ON/OFF)	X	—	▼	Not mounted but displayed.
RANGE	—	X	▼	Indicates position is recognized by TCM. Indicates a specific value required for control when fail-safe function is activated.
M GEAR POS	—	X	▼	—
Voltage (V)	—	—	▼	Displays the value measured by the voltage probe.
Frequency (Hz)	—	—	▼	The value measured by the pulse probe is displayed.
DUTY-HI (high) (%)	—	—	▼	
DUTY-LOW (low) (%)	—	—	▼	
PLS WIDTH-HI (ms)	—	—	▼	
PLS WIDTH-LOW (ms)	—	—	▼	

DTC/CIRCUIT DIAGNOSIS

U1000 CAN COMM CIRCUIT

Description

INFOID:000000006390676

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

DTC Logic

INFOID:000000006390677

DTC DETECTION LOGIC

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

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

 With CONSULT-III

1. Turn ignition switch ON.
2. Start engine and wait for at least 6 seconds.
3. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "U1000" detected?

- YES >> Go to [TM-291, "Diagnosis Procedure"](#).
 NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390678

1.CHECK CAN COMMUNICATION CIRCUIT

 With CONSULT-III

1. Turn ignition switch ON and start engine.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "U1000" indicated?

- YES >> Go to LAN section. Refer to [LAN-24, "CAN System Specification Chart"](#).
 NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

U1010 CONTROL UNIT (CAN)

Description

INFOID:000000006390679

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

DTC Logic

INFOID:000000006390680

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
U1010	TCM Communication Malfunction	When detecting error during the initial diagnosis of CAN controller to TCM.	Harness or connectors (CAN communication line is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

 With CONSULT-III

1. Turn ignition switch ON.
2. Start engine and wait for at least 6 seconds.
3. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "U1010" detected?

- YES >> Go to [TM-292, "Diagnosis Procedure"](#).
 NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390681

1.CHECK CAN COMMUNICATION CIRCUIT

 With CONSULT-III

1. Turn ignition switch ON and start engine.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "U1010" indicated?

- YES >> Replace TCM. Refer to [TM-403, "Exploded View"](#).
 NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

P0703 BRAKE SWITCH B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0703 BRAKE SWITCH B

Description

INFOID:000000006390682

BCM detects ON/OFF state of the stop lamp switch and transmits the data to the TCM via CAN communication by converting the data to a signal.

DTC Logic

INFOID:000000006390683

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0703	Brake Switch B Circuit	When the brake switch does not switch to ON or OFF.	<ul style="list-style-type: none">• Harness or connectors- (Stop lamp switch, and BCM circuit are open or shorted.)- (CAN communication line is open or shorted.)• Stop lamp switch

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

Ⓜ With CONSULT-III

1. Turn ignition switch ON.
2. Start engine.
3. Start vehicle for at least 3 consecutive seconds.
4. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0703" detected?

YES >> Go to [TM-293, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

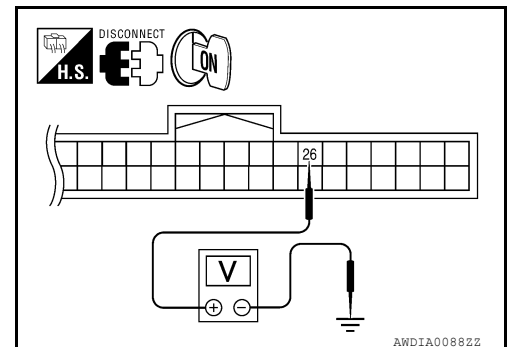
Diagnosis Procedure

INFOID:000000006390684

1.CHECK STOP LAMP SWITCH CIRCUIT

1. Check and adjust the installation position of stop lamp switch. Refer to [BR-13, "Inspection and Adjustment"](#).
2. Disconnect BCM harness connector M18.
3. Check voltage between BCM harness connector M18 terminal 26 and ground.

BCM harness connector		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
M18	26		Depressed brake pedal	Battery voltage
			Released brake pedal	0 V



Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND BCM (PART 1)

P0703 BRAKE SWITCH B

[CVT: RE0F10A]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect stop lamp switch harness connector.
2. Check continuity between stop lamp switch harness connector E38 (A) terminal 2 and BCM harness connector M18 (B) terminal 26.

Stop lamp switch harness connector		BCM harness connector		Continuity
Connector	Terminal	Connector	Terminal	
E38 (A)	2	M18 (B)	26	Existed

Is the inspection result normal?

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

3.CHECK HARNESS BETWEEN STOP LAMP SWITCH AND BCM (PART 2)

Check continuity between BCM harness connector M18 terminal 26 and ground.

BCM harness connector		Ground	Continuity
Connector	Terminal		
M18	26		Not existed

Is the inspection result normal?

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

4.CHECK STOP LAMP SWITCH

Check stop lamp switch. Refer to [TM-294, "Component Inspection \(Stop Lamp Switch\)"](#).

Is the inspection result normal?

- YES >> Check the following.
- Harness for short or open between battery and stop lamp switch
 - 10A fuse (No. 7, located in fuse block)
- NO >> Repair or replace stop lamp switch.

5.CHECK BCM

④ With CONSULT-III

1. Turn ignition switch OFF.
2. Connect BCM connector.
3. Turn ignition switch ON.
4. Select "BRAKE SW 1" in "DATA MONITOR" of "BCM" and verify the proper operation of ON/OFF. Refer to [BCS-41, "Reference Value"](#).

Is the inspection result normal?

- YES >> GO TO 6.
NO >> Replace BCM. Refer to [BCS-92, "Removal and Installation"](#).

6.DETECT MALFUNCTIONING ITEMS

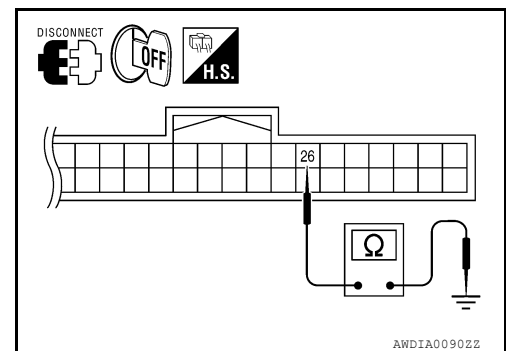
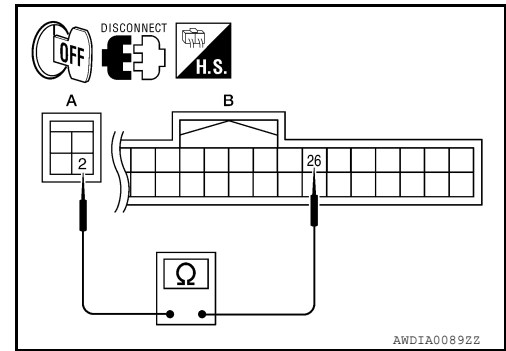
Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

Component Inspection (Stop Lamp Switch)

1.CHECK STOP LAMP SWITCH



INFOID:000000006390685

P0703 BRAKE SWITCH B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

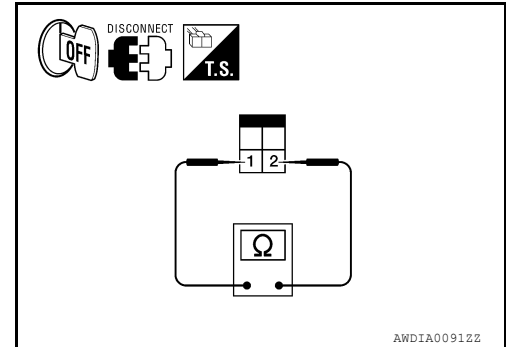
Check continuity between stop lamp switch terminals 1 and 2.

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

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace stop lamp switch. Refer to [BR-17. "Exploded View"](#).



P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0705 TRANSMISSION RANGE SWITCH A

Description

INFOID:000000006390686

- Transmission range switch is installed to upper part of transaxle case.
- The transmission range switch detects the selector lever position and sends a signal to the TCM.

DTC Logic

INFOID:000000006390687

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0705	Transmission Range Sensor A Circuit (PRNDL Input)	TCM does not receive the correct voltage signal (based on the gear position) from the switch.	<ul style="list-style-type: none">• Harness or connectors (Transmission range switches circuit is open or shorted.)• Transmission range switch

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1. CHECK DTC DETECTION

With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine.
4. Drive vehicle and maintain the following conditions for at least 2 consecutive seconds.

VEHICLE SPEED	More than 10 km/h (6 MPH)
ENG SPEED	: More than 450 rpm
ACC PEDAL OPEN	: More than 1.0/8

Is "P0705" detected?

- YES >> Go to [TM-296, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

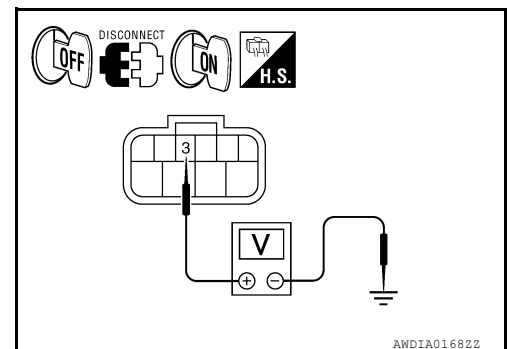
Diagnosis Procedure

INFOID:000000006390688

1. CHECK POWER SOURCE

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 F25 terminal 3 and ground.

Transmission range switch harness connector		Ground	Voltage (Approx.)
Connector	Terminal		
F25	3		Battery voltage



Is the inspection result normal?

- YES >> GO TO 2.
NO >> Check the following.
- Harness for short or open between ignition switch and transmission range switch
 - 10A fuse (No. 4, located in fuse block)

2. CHECK HARNESS BETWEEN TCM AND TRANSMISSION RANGE SWITCH (PART 1)

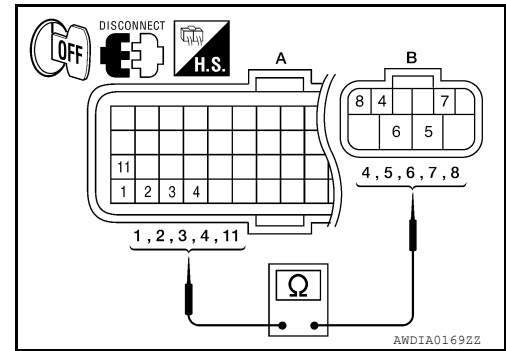
P0705 TRANSMISSION RANGE SWITCH A

[CVT: RE0F10A]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect TCM connector.
3. Check continuity between TCM harness connector F16 (A) terminal 1, 2, 3, 4, 11 and transmission range switch harness connector F25 (B) terminal 5, 6, 7, 8, 4.

TCM harness connector		Transmission range switch harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	1	F25 (B)	5	Existed
	2		6	
	3		7	
	4		8	
	11		4	



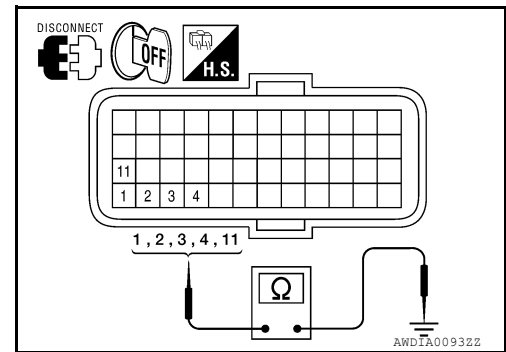
Is the inspection result normal?

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

3. CHECK HARNESS BETWEEN TCM AND TRANSMISSION RANGE SWITCH (PART 2)

Check continuity between TCM harness connector F16 terminal 1, 2, 3, 4, 11 and ground.

TCM harness connector		Continuity
Connector	Terminal	
F16	1	Not existed
	2	
	3	
	4	
	11	



Is the inspection result normal?

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

4. CHECK CVT POSITION

1. Remove control cable from manual lever. Refer to [TM-406, "Removal and Installation"](#).
2. Check continuity between transmission range switch connector terminals. Refer to [TM-297, "Component Inspection \(Transmission Range Switch\)"](#).

Is the inspection result normal?

- YES >> Adjust CVT position. Refer to [TM-402, "Inspection and Adjustment"](#).
NO >> GO TO 5.

5. DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace the TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

Component Inspection (Transmission Range Switch)

INFOID:000000006390689

1. CHECK TRANSMISSION RANGE SWITCH

1. Adjust transmission range switch position. Refer to [TM-402, "Inspection and Adjustment"](#).

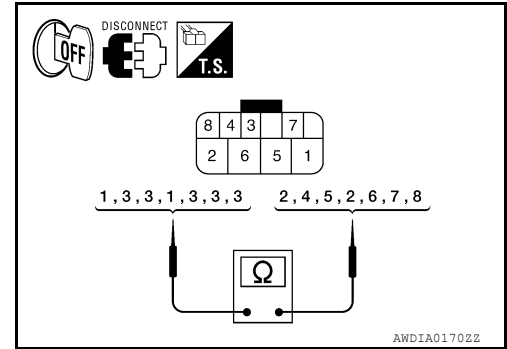
P0705 TRANSMISSION RANGE SWITCH A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

2. Check continuity between transmission range switch terminals.

Transmission range switch terminal		Condition	Continuity
1	2	Manual lever in P position	Existed
3	4		
3	5	Manual lever in R position	
1	2	Manual lever in N position	
3	6		
3	7	Manual lever in D position	
3	8	Manual lever in L position	



Is the inspection result normal?

YES >> **INSPECTION END**

NO >> Replace transmission range switch. Refer to [TM-410, "Removal and Installation"](#).

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

Description

INFOID:000000006390690

The CVT fluid temperature sensor detects the CVT fluid temperature and sends a signal to the TCM.

DTC Logic

INFOID:000000006390691

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0710	Transmission Fluid Temperature Sensor A Circuit	During running, the CVT fluid temperature sensor signal voltage is excessively high or low.	<ul style="list-style-type: none">• Harness or connectors (Sensor circuit is open or shorted.)• CVT fluid temperature sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION (PART 1)

① With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Check that output voltage of CVT fluid temperature sensor is within range specified below.

ATF TEMP SEN : 0.16 – 2.03 V

Is the inspection result normal?

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

NO-1 ("ATF TEMP SEN")>>Refer to [TM-299, "Diagnosis Procedure"](#).

NO-2 ("ATF TEMP SEN")>>GO TO 2.

2.CHECK DTC DETECTION (PART 2)

① With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 14 minutes.

RANGE : "D" position

VEHICLE SPEED : 10 km/h (6 MPH) or more

① With GST

Follow the procedure "With CONSULT-III".

Is "P0710" detected?

YES >> Go to [TM-299, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390692

1.CHECK CVT FLUID TEMPERATURE SENSOR CIRCUIT

P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check resistance between TCM harness connector F16 terminal 13, 25.

TCM harness connector			Temperature °C (°F)	Resistance (Approx.)
Connector	Terminal			
F16	13	25	20 (68)	6.5 kΩ
			80 (176)	0.9 kΩ

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

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

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 13, 25 and CVT unit harness connector F46 (B) terminal 17, 19.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	13	F46 (B)	17	Existed
	25		19	

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

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

Check continuity between TCM harness connector F16 terminal 13, 25 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	13		Not existed
	25		

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK CVT FLUID TEMPERATURE SENSOR

Check CVT fluid temperature sensor. Refer to [TM-301, "Component Inspection \(CVT Fluid Temperature Sensor\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

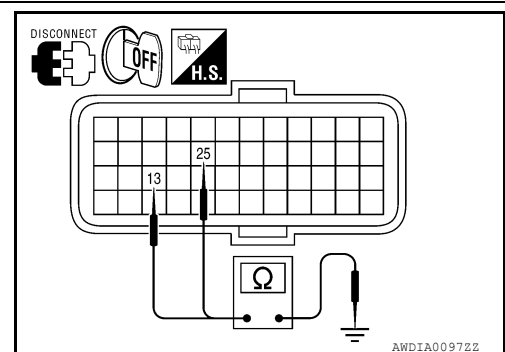
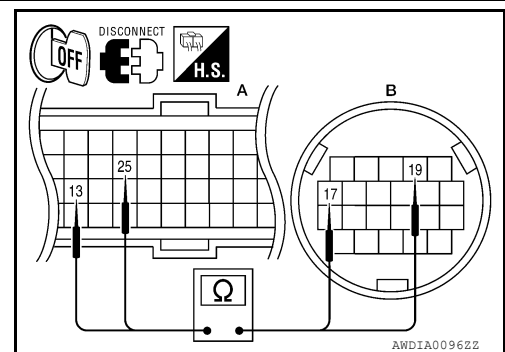
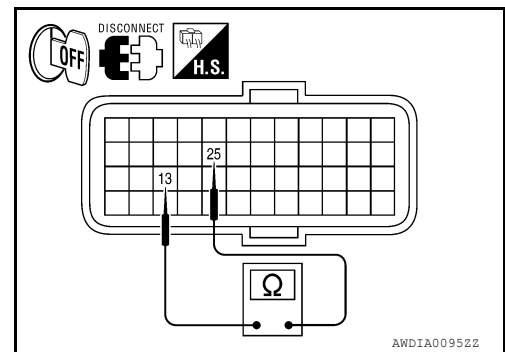
5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.



P0710 TRANSMISSION FLUID TEMPERATURE SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

Component Inspection (CVT Fluid Temperature Sensor)

INFOID:000000006390693

1.CHECK CVT FLUID TEMPERATURE SENSOR

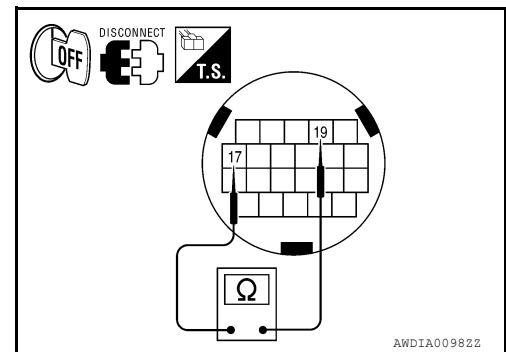
Check resistance between CVT unit terminal 17 and 19.

CVT unit terminal		Temperature °C (°F)	Resistance (Ap- prox.)
17	19	20 (68)	6.5 kΩ
		80 (176)	0.9 kΩ

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414](#).
["Removal and Installation"](#).



P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0715 INPUT SPEED SENSOR A

Description

INFOID:000000006390694

The primary speed sensor detects the primary pulley revolution speed and sends a signal to the TCM.

DTC Logic

INFOID:000000006390695

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0715	Input/Turbine Speed Sensor A Circuit	<ul style="list-style-type: none">Primary speed sensor signal is not input due to an open circuit.An unexpected signal is input when vehicle is being driven.	<ul style="list-style-type: none">Harness or connectors (Sensor circuit is open or shorted.)Primary speed sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

ⓅWith CONSULT-III

- Turn ignition switch ON.
- Select "DATA MONITOR".
- Start engine and maintain the following conditions for at least 5 consecutive seconds.

VEHICLE SPEED	: 10 km/h (6 MPH) or more
ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
ENG SPEED	: 450 rpm or more
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P0715" detected?

- YES >> Go to [TM-302, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

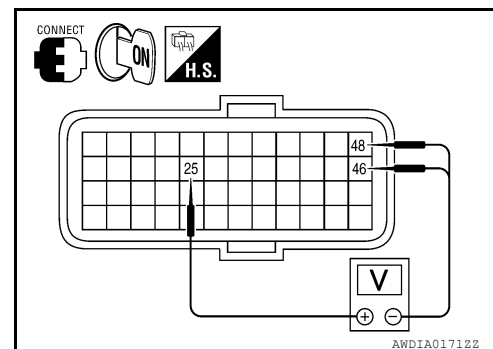
INFOID:000000006390696

1.CHECK PRIMARY SPEED SENSOR

ⓅWith CONSULT-III

- Start engine.
- Check voltage between TCM harness connector F16 terminal 25, 46 and 25, 48.

TCM harness connector			Data (Approx.)
Connector	Terminal		
F16	25	46	Battery voltage
		48	



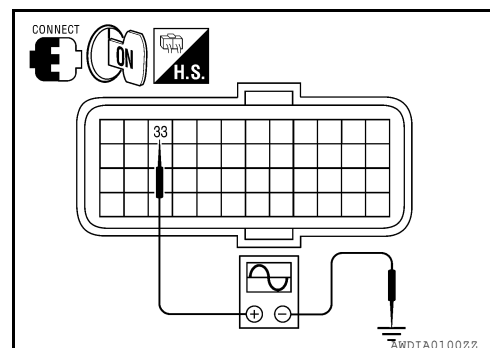
P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

- If OK, check the pulse when vehicle cruises.

TCM harness connector		Condition	Voltage (Approx.)
Con- nector	Termi- nal		
F16	33	When running at 20 km/h (12 MPH) in "M1" position with the closed throttle position signal OFF, use the CONSULT-III pulse frequency measuring function.	730 Hz



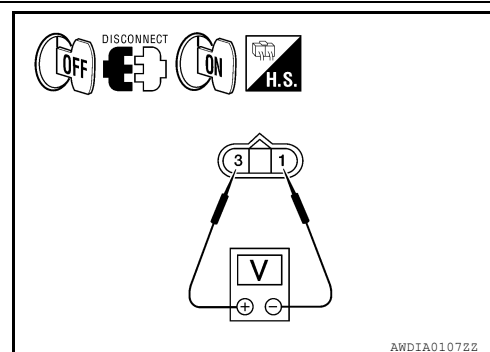
Is the inspection result normal?

- YES >> GO TO 12.
NO >> GO TO 2.

2. CHECK POWER AND SENSOR GROUND

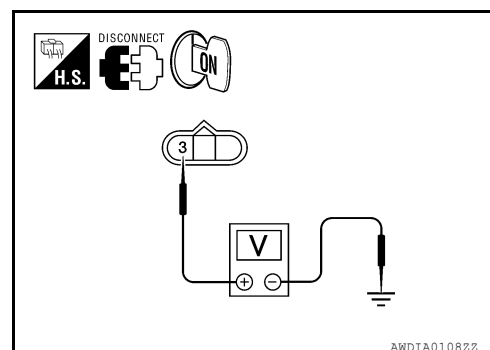
- Turn ignition switch OFF.
- Disconnect primary speed sensor harness connector.
- Turn ignition switch ON.
- Check voltage between primary speed sensor harness connector F8 terminal 1 and 3.

Primary speed sensor harness connector			Voltage (Approx.)
Connector	Terminal		
F8	1	3	Battery voltage



- Check voltage between primary speed sensor harness connector F8 terminal 3 and ground.

Primary speed sensor harness connector		Ground	Voltage (Approx.)
Connector	Terminal		
F8	3		Battery voltage



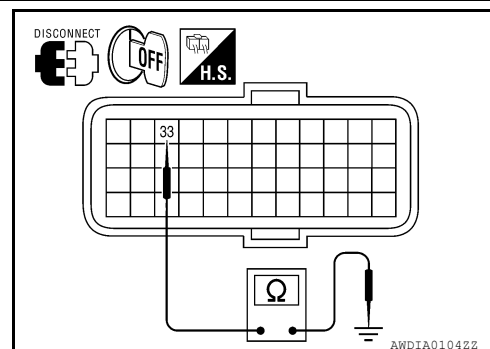
Is the inspection result normal?

- YES >> GO TO 3.
NO - 1 >> Battery voltage is not supplied between terminals 1 and 3, terminal 3 and ground: GO TO 6.
NO - 2 >> Battery voltage is not supplied between terminals 1 and 3 only: GO TO 8.

3. CHECK HARNESS BETWEEN TCM AND PRIMARY SPEED SENSOR (SENSOR GROUND)

- Turn ignition switch OFF.
- Disconnect TCM harness connector and CVT unit harness connector.
- Check continuity between TCM harness connector F16 terminal 33 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	33		Not existed



Is the inspection result normal?

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

4. CHECK HARNESS BETWEEN TCM AND PRIMARY SPEED SENSOR (PART 1)

P0715 INPUT SPEED SENSOR A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

Check continuity between TCM harness connector F16 (A) terminal 33 and primary speed sensor harness connector F8 (B) terminal 2.

TCM harness connector		Primary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	33	F8 (B)	2	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5. CHECK HARNESS BETWEEN TCM AND PRIMARY SPEED SENSOR (PART 2)

Check continuity between TCM harness connector F16 terminal 33 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	33		Not existed

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace damaged parts.

6. CHECK HARNESS BETWEEN IPDM E/R AND PRIMARY SPEED SENSOR (PART 1)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R connector F10.
3. Check continuity between IPDM E/R harness connector F10 (A) terminal 58 and primary speed sensor harness connector F8 (B) terminal 3.

IPDM E/R harness connector		Primary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F10 (A)	58	F8 (B)	3	Existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7. CHECK HARNESS BETWEEN IPDM E/R AND PRIMARY SPEED SENSOR (PART 2)

Check continuity between IPDM E/R harness connector F10 terminal 58 and ground.

IPDM E/R harness connector		Ground	Continuity
Connector	Terminal		
F10	58		Not existed

Is the inspection result normal?

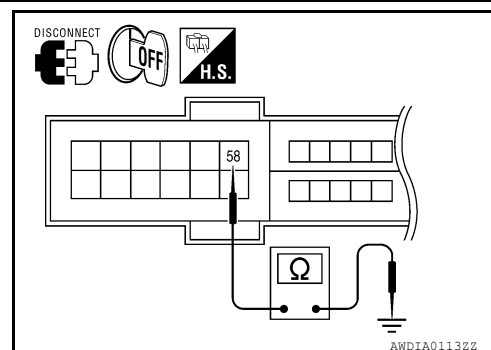
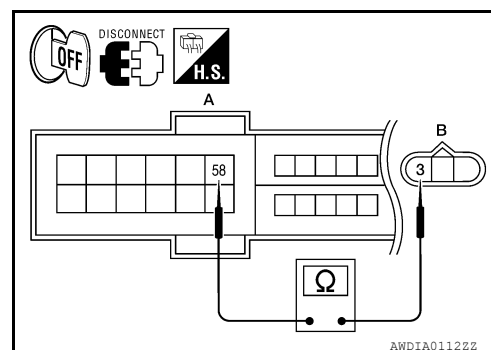
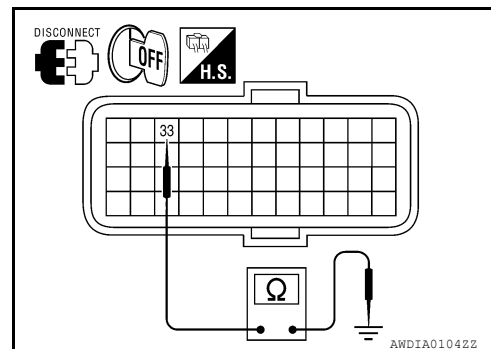
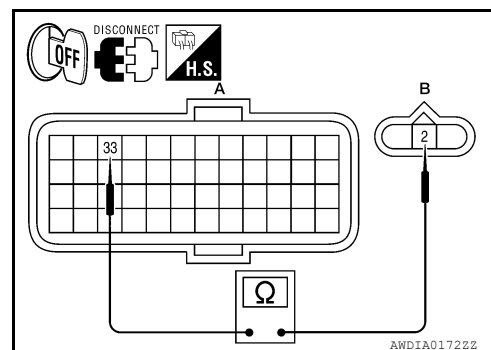
YES >> Check the following.

- Harness for short or open between ignition switch and IPDM E/R
- 10A fuse (No. 34, located in IPDM E/R)
- Ignition switch

NO >> Repair or replace damaged parts.

8. CHECK HARNESS BETWEEN TCM AND PRIMARY SPEED SENSOR (SENSOR GROUND) (PART 1)

1. Turn ignition switch OFF.



P0715 INPUT SPEED SENSOR A

[CVT: RE0F10A]

< DTC/CIRCUIT DIAGNOSIS >

- Disconnect TCM connector.
- Check continuity between TCM harness connector F16 (A) terminal 25 and primary speed sensor harness connector F8 (B) terminal 1.

TCM harness connector		Primary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	25	F8 (B)	1	Existed

Is the inspection result normal?

- YES >> GO TO 9.
NO >> Repair or replace damaged parts.

9. CHECK HARNESS BETWEEN TCM AND PRIMARY SPEED SENSOR (SENSOR GROUND) (PART 2)

- Disconnect CVT unit harness connector.
- Check continuity between TCM harness connector F16 terminal 25 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	25		Not existed

Is the inspection result normal?

- YES >> GO TO 10.
NO >> Repair or replace damaged parts.

10. CHECK CVT UNIT CIRCUIT

Check continuity between CVT unit harness connector F46 terminal 19 and ground.

CVT unit harness connector		Ground	Continuity
Connector	Terminal		
F46	19		Not existed

Is the inspection result normal?

- YES >> GO TO 11.
>> Repair or replace damaged parts.

11. CHECK TCM

- Replace same type TCM. Refer to [TM-403, "Removal and Installation"](#).
- Connect each connector.
- Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-302, "DTC Logic"](#).

Is the "P0715" detected?

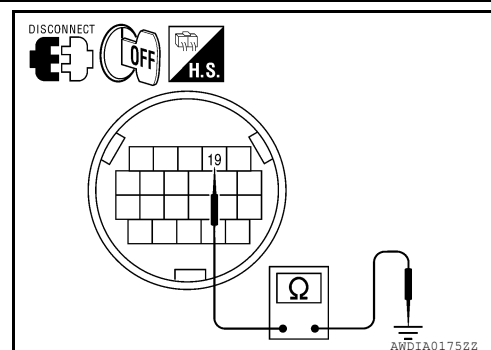
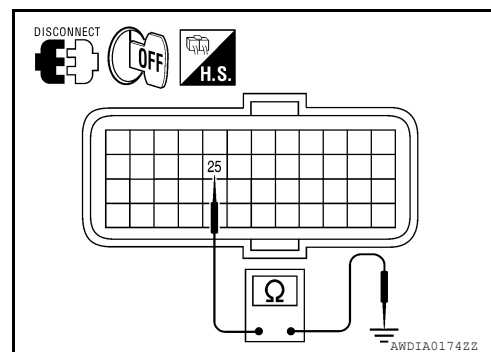
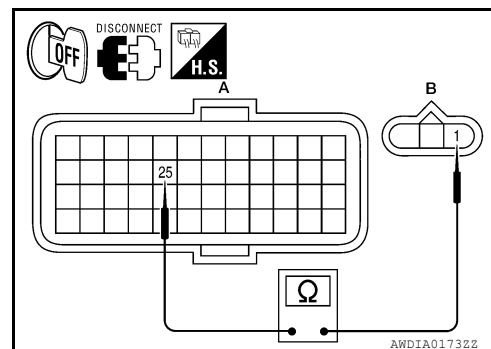
- YES >> Replace primary speed sensor.
NO >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

12. DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.



P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0720 OUTPUT SPEED SENSOR

Description

INFOID:000000006390697

The secondary speed sensor detects the revolution of the CVT output shaft and emits a pulse signal. The pulse signal is sent to the TCM, which converts it into vehicle speed.

DTC Logic

INFOID:000000006390698

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0720	Output Speed Sensor Circuit	<ul style="list-style-type: none">Signal from secondary speed sensor not input due to open or short circuit.An unexpected signal input during running.	<ul style="list-style-type: none">Harness or connectors (Sensor circuit is open or shorted.)Secondary speed sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

① With CONSULT-III

- Turn ignition switch ON.
- Select "DATA MONITOR".
- Start engine and maintain the following conditions for at least 12 consecutive seconds.

ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P0720" detected?

- YES >> Go to [TM-306, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

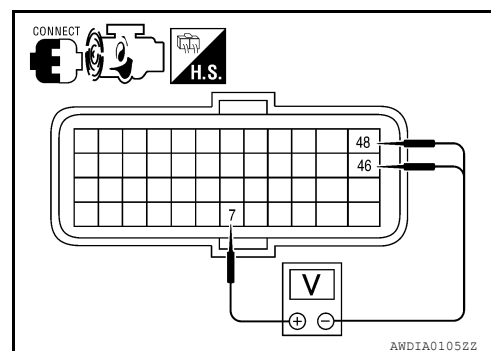
INFOID:000000006390699

1.CHECK SECONDARY SPEED SENSOR

① With CONSULT-III

- Start engine.
- Check voltage between TCM harness connector F16 terminal 7 and 46 and 7 and 48.

TCM harness connector			Voltage (Approx.)
Connector	Terminal		
F16	7	46	Battery voltage
		48	



P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

- If OK, check the pulse when vehicle cruises.

TCM harness connector		Condition	Data (Approx.)
Connector	Terminal		
F16	34	When running at 20 km/h (12 MPH) in "D" position, use the CONSULT-III pulse frequency measuring function.	390 Hz

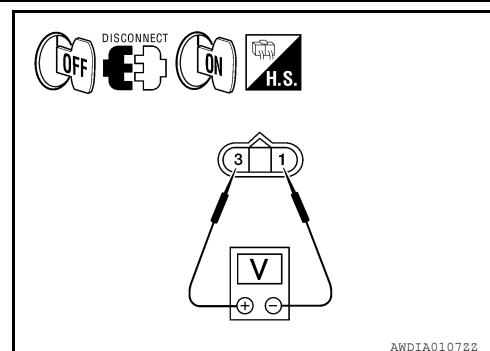
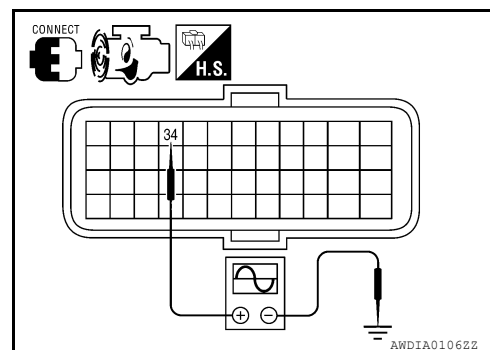
Is the inspection result normal?

- YES >> GO TO 11.
NO >> GO TO 2.

2.CHECK POWER AND SENSOR GROUND

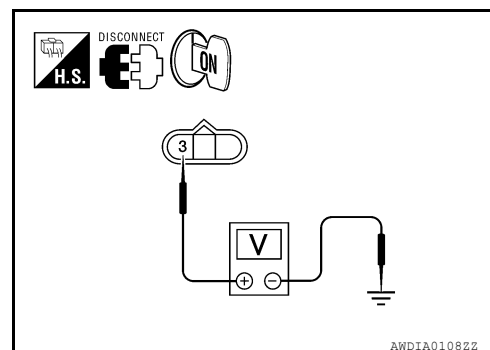
- Turn ignition switch OFF.
- Disconnect secondary speed sensor harness connector.
- Turn ignition switch ON.
- Check voltage between secondary speed sensor harness connector F23 terminal 1 and 3.

Secondary speed sensor harness connector			Voltage (Approx.)
Connector	Terminal		
F23	1	3	Battery voltage



- Check voltage between secondary speed sensor harness connector F23 terminal 3 and ground.

Secondary speed sensor harness connector		Ground	Voltage (Approx.)
Connector	Terminal		
F23	3		Battery voltage



Is the inspection result normal?

- YES >> GO TO 3.
NO-1 >> Battery voltage is not supplied between terminals 1 and 3, terminals 3 and ground: GO TO 6.
NO-2 >> Battery voltage is not supplied between terminals 1 and 3 only: GO TO 8.

3.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (SENSOR GROUND)

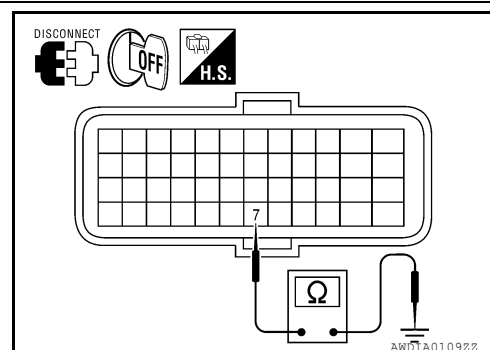
- Turn ignition switch OFF.
- Disconnect TCM harness connector.
- Check continuity between TCM harness connector F16 terminal 7 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	7		Not existed

Is the inspection result normal?

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

4.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (PART 1)



P0720 OUTPUT SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

Check continuity between TCM harness connector F16 (A) terminal 34 and secondary speed sensor harness connector F23 (B) terminal 2.

TCM harness connector		Secondary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	34	F23 (B)	2	Existed

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (PART 2)

Check continuity between TCM harness connector F16 terminal 34 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	34		Not existed

Is the inspection result normal?

YES >> GO TO 10.

NO >> Repair or replace damaged parts.

6.CHECK HARNESS BETWEEN IPDM E/R AND SECONDARY SPEED SENSOR (POWER) (PART 1)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector F10.
3. Check continuity between IPDM E/R harness connector F10 (A) terminal 58 and secondary speed sensor harness connector F23 (B) terminal 3.

IPDM E/R harness connector		Secondary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F10 (A)	58	F23 (B)	3	Existed

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.

7.CHECK HARNESS BETWEEN IPDM E/R AND SECONDARY SPEED SENSOR (POWER) (PART 2)

Check continuity between IPDM E/R harness connector F10 terminal 58 and ground.

IPDM E/R harness connector		Ground	Continuity
Connector	Terminal		
F10	58		Not existed

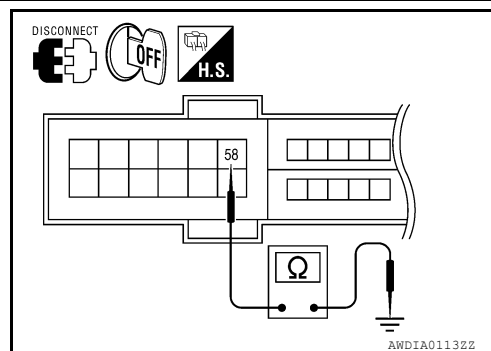
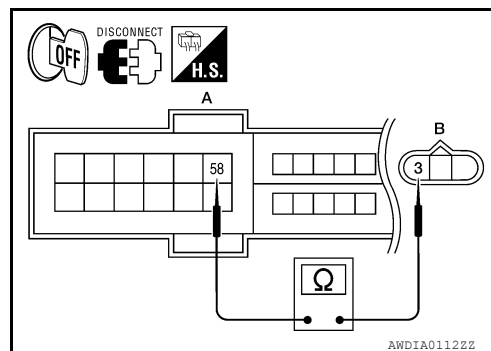
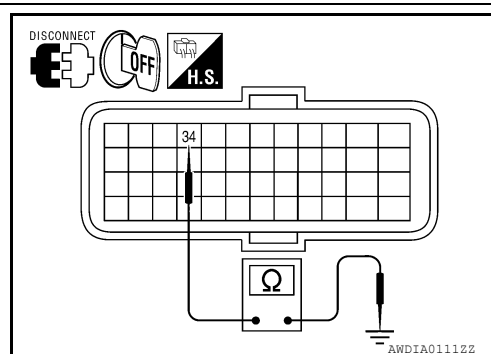
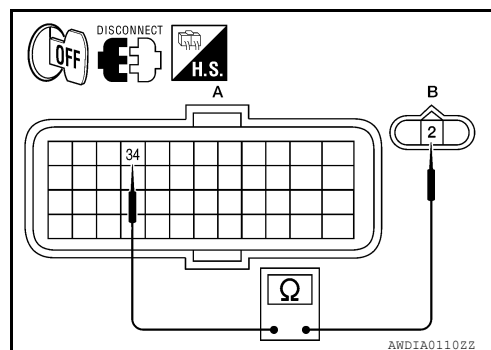
Is the inspection result normal?

YES >> Check the following.

- Harness for short or open between ignition switch and IPDM E/R
- 10A fuse (No. 34, located in IPDM E/R)
- Ignition switch

NO >> Repair or replace damaged parts.

8.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (SENSOR GROUND) (PART 1)



P0720 OUTPUT SPEED SENSOR

[CVT: RE0F10A]

< DTC/CIRCUIT DIAGNOSIS >

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check continuity between TCM harness connector F16 (A) terminal 7 and secondary speed sensor harness connector F23 (B) terminal 1.

TCM harness connector		Secondary speed sensor harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	7	F23 (B)	1	Existed

Is the inspection result normal?

- YES >> GO TO 9.
NO >> Repair or replace damaged parts.

9.CHECK HARNESS BETWEEN TCM AND SECONDARY SPEED SENSOR (SENSOR GROUND) (PART 2)

Check continuity between TCM harness connector F16 terminal 7 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	7		Not existed

Is the inspection result normal?

- YES >> GO TO 10.
NO >> Repair or replace damaged parts.

10.CHECK TCM

1. Replace same type TCM. Refer to [TM-403, "Removal and Installation"](#).
2. Connect each connector.
3. Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-306, "DTC Logic"](#).

Is "P0720" detected?

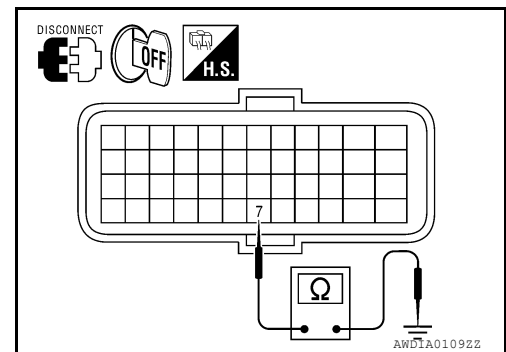
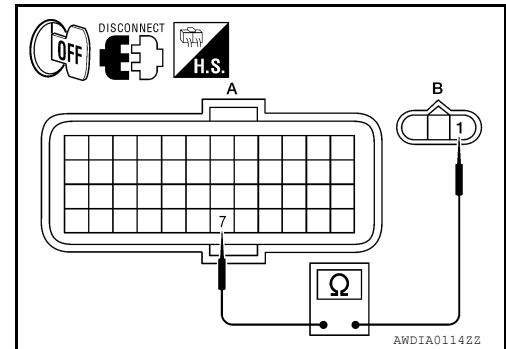
- YES >> Replace secondary speed sensor. Refer to [TM-412, "Removal and Installation"](#).
NO >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

11.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.



P0725 ENGINE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0725 ENGINE SPEED

Description

INFOID:000000006390700

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

DTC Logic

INFOID:000000006390701

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0725	Engine Speed Input Circuit	<ul style="list-style-type: none">TCM does not receive the CAN communication signal from the ECM.Engine speed is too low while driving.	Harness or connectors (The ECM to the TCM circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

⑧ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 10 consecutive seconds.

PRI SPEED SEN : More than 1000 rpm

Is "P0725" detected?

- YES >> Go to [TM-310, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390702

1.CHECK DTC WITH ECM

⑧ With CONSULT-III

1. Turn ignition switch ON.
2. Perform "SELF-DIAG RESULTS" mode for "ENGINE".

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Check DTC detected item. Refer to [EC-286, "DTC Index"](#).

2.CHECK DTC WITH TCM

⑧ With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0725" detected?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> GO TO 3.

3.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

P0730 INCORRECT GEAR RATIO

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0730 INCORRECT GEAR RATIO

Description

INFOID:000000006390703

TCM selects the gear ratio using the engine load (throttle position), the primary pulley revolution speed, and the secondary pulley revolution speed as input signal. Then it changes the operating pressure of the primary pulley and the secondary pulley and changes the groove width of the pulley.

DTC Logic

INFOID:000000006390704

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0730	Incorrect Gear Ratio	Unexpected gear ratio detected.	Transaxle assembly

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

Ⓜ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

4. Start engine and maintain the following conditions for at least 30 consecutive seconds.

TEST START FROM 0 km/h (0 MPH)

CONSTANT ACCELERATION : Keep 30 sec or more
VEHICLE SPEED : 10 km/h (6 MPH) or more
ACC PEDAL OPEN : More than 1.0/8
RANGE : "D" position
ENG SPEED : 450 rpm or more

Is "P0730" detected?

- YES >> Go to [TM-311, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390705

1.CHECK DTC

Ⓜ With CONSULT-III

1. Turn ignition switch ON.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Are any DTC displayed?

- YES-1 >> DTC for "P0730" is displayed: Go to replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).
YES-2 >> DTC except for "P0730" is displayed: Go to check DTC detected item. Refer to [TM-359, "DTC Index"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

P0740 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0740 TORQUE CONVERTER

Description

INFOID:000000006390706

- The torque converter clutch solenoid valve is activated by the TCM in response to signals sent from the vehicle speed and accelerator pedal position sensors. Lock-up piston operation will then be controlled.
- Lock-up operation, however, is prohibited when CVT fluid temperature is too low.
- When the accelerator pedal is depressed (less than 2.0/8) in lock-up condition, the engine speed should not change abruptly. If there is a big jump in engine speed, there is no lock-up.

DTC Logic

INFOID:000000006390707

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0740	Torque Converter Clutch Circuit/Open	Normal voltage not applied to solenoid due to open or short circuit.	<ul style="list-style-type: none">• Torque converter clutch solenoid valve• Harness or connectors (Solenoid circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

1. Turn ignition switch ON.
2. Wait at least 10 consecutive seconds.
3. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0740" detected?

YES >> Go to [TM-312, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390708

1.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check resistance between TCM harness connector F16 terminal 38 and ground.

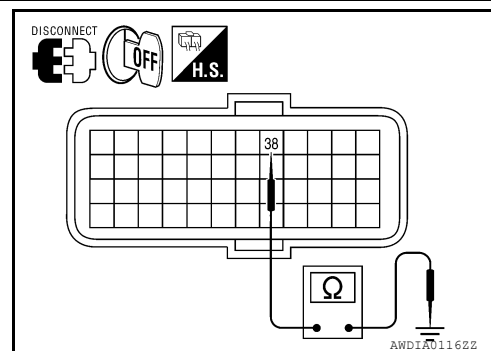
TCM harness connector		Ground	Resistance (Approx.)
Connector	Terminal		
F16	38		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND CVT UNIT (TORQUE CONVERTER CLUTCH SOLENOID VALVE) (PART 1)



P0740 TORQUE CONVERTER

[CVT: RE0F10A]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 38 and CVT unit harness connector F46 (B) terminal 12.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	38	F46 (B)	12	Existed

Is the inspection result normal?

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

3.CHECK HARNESS BETWEEN TCM AND CVT UNIT (TORQUE CONVERTER CLUTCH SOLENOID VALVE) (PART 2)

Check continuity between TCM harness connector F16 terminal 38 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	38		Not existed

Is the inspection result normal?

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

4.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

Check torque converter clutch solenoid valve. Refer to [TM-313, "Component Inspection \(Torque Converter Clutch Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

Component Inspection (Torque Converter Clutch Solenoid Valve)

INFOID:000000006390709

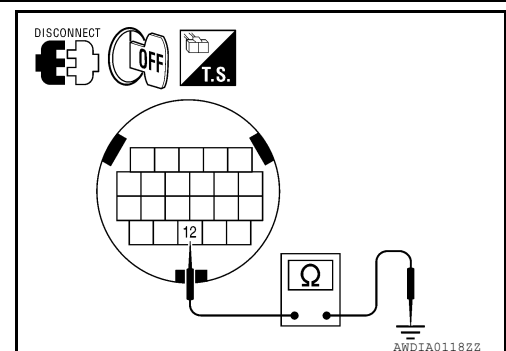
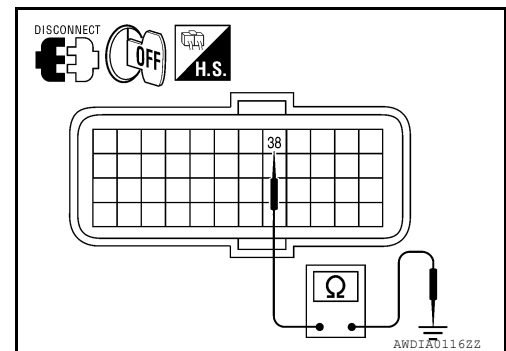
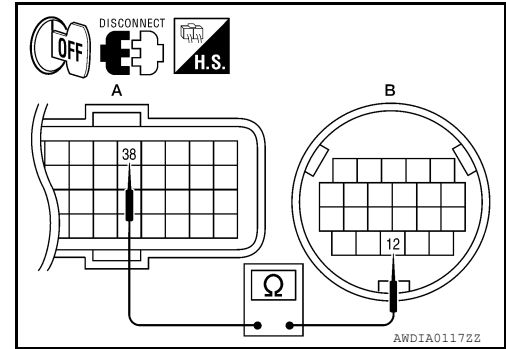
1.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

Check resistance between CVT unit terminal 12 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
12		3.0 – 9.0 Ω

Is the inspection result normal?

- YES >> INSPECTION END
NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



P0744 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0744 TORQUE CONVERTER

Description

INFOID:000000006390710

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

DTC Logic

INFOID:000000006390711

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0744	Torque Converter Clutch Circuit Intermittent	<ul style="list-style-type: none">CVT cannot perform lock-up even if electrical circuit is good.TCM detects as irregular by comparing difference value with slip rotation.There is big difference engine speed and primary speed when TCM lock-up signal is on.	<ul style="list-style-type: none">Torque converter clutch solenoid valveHydraulic control circuit

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

- Turn ignition switch ON.
- Select "DATA MONITOR".
- Start engine and maintain the following condition for at least 30 seconds.

ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
VEHICLE SPEED	: Constant speed of more than 40 km/h (25 MPH)

Is "P0744" detected?

- YES >> Go to [TM-314, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390712

1.CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-396, "Inspection and Judgment"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts. Refer to [TM-396, "Inspection and Judgment"](#).

2.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

- Turn ignition switch OFF.
- Disconnect CVT unit harness connector.
- Check torque converter clutch solenoid valve. Refer to [TM-315, "Component Inspection \(Torque Converter Clutch Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace transaxle assembly. Refer to [TM-247, "Removal and Installation"](#).

3.CHECK LOCK-UP SELECT SOLENOID VALVE

P0744 TORQUE CONVERTER

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

Check lock-up select solenoid valve. Refer to [TM-315, "Component Inspection \(Lock-up Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

4.CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-306, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-302, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Torque Converter Clutch Solenoid Valve)

INFOID:000000006390713

1.CHECK TORQUE CONVERTER CLUTCH SOLENOID VALVE

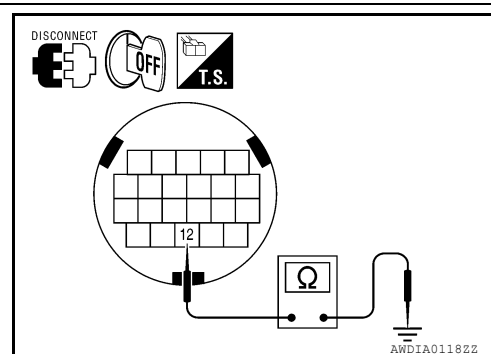
Check resistance between CVT unit terminal 12 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
12		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



Component Inspection (Lock-up Solenoid Valve)

INFOID:000000006390714

1.CHECK LOCK-UP SELECT SOLENOID VALVE

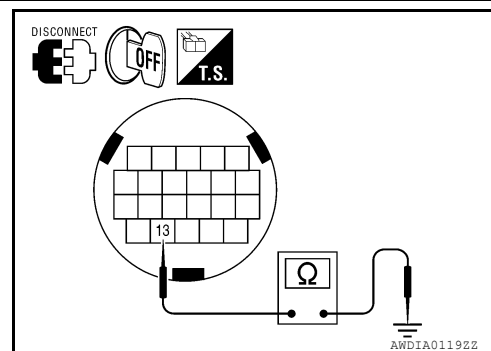
Check resistance between CVT unit connector terminal and ground.

CVT unit terminal	Ground	Resistance (Approx.)
13		17.0 – 38.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



P0745 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0745 PRESSURE CONTROL SOLENOID A

Description

INFOID:000000006390715

The line pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390716

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0745	Pressure Control Solenoid A	<ul style="list-style-type: none">Normal voltage not applied to solenoid due to open or short circuit.TCM detects as irregular by comparing target value with monitor value.	<ul style="list-style-type: none">Harness or connectors (Solenoid circuit is open or shorted.)Line pressure solenoid valve

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

① With CONSULT-III

- Turn ignition switch ON.
- Start engine and wait at least 5 seconds.
- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0745" detected?

YES >> Go to [TM-316, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390717

1.CHECK LINE PRESSURE SOLENOID VALVE CIRCUIT

- Turn ignition switch OFF.
- Disconnect TCM harness connector.
- Check resistance between TCM harness connector F16 terminal 40 and ground.

TCM harness connector		Ground	Resistance (Approx.)
Connector	Terminal		
F16	40		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND CVT UNIT (LINE PRESSURE SOLENOID VALVE) (PART 1)

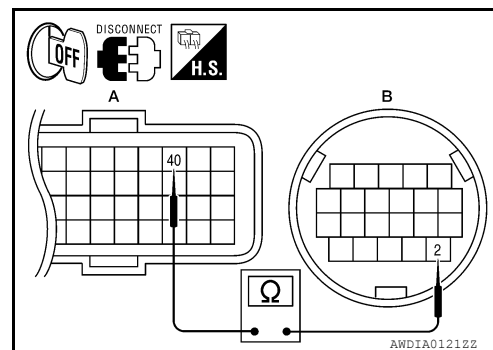
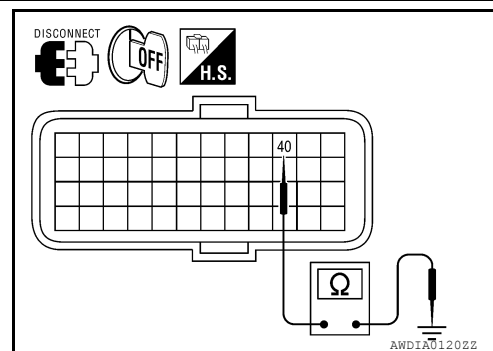
- Disconnect CVT unit connector.
- Check continuity between TCM harness connector F16 (A) terminal 40 and CVT unit harness connector F46 (B) terminal 2.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	40	F46 (B)	2	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.



P0745 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

3.CHECK HARNESS BETWEEN TCM AND CVT UNIT (LINE PRESSURE SOLENOID VALVE) (PART 2)

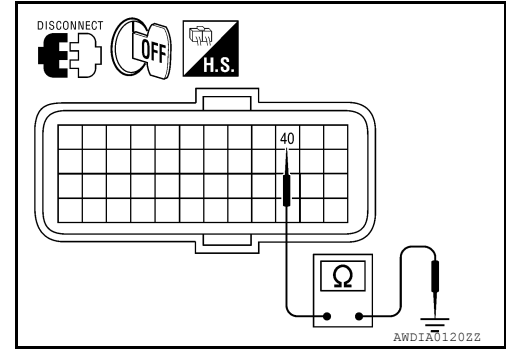
Check continuity between TCM harness connector F16 terminal 40 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	40		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.



4.CHECK LINE PRESSURE SOLENOID VALVE

Check line pressure solenoid valve. Refer to [TM-317, "Component Inspection \(Line Pressure Solenoid Valve\)"](#)

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000006390718

1.CHECK LINE PRESSURE SOLENOID VALVE

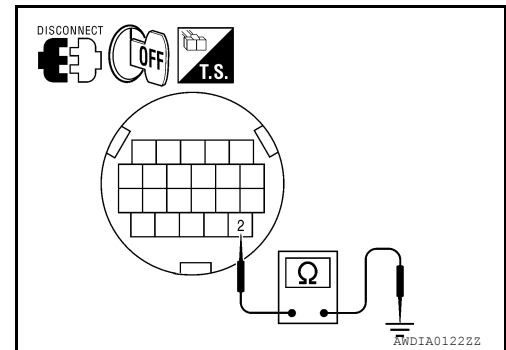
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0746 PRESSURE CONTROL SOLENOID A

Description

INFOID:000000006390719

The line pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390720

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0746	Pressure Control Solenoid A Performance/Stuck Off	Unexpected gear ratio was detected in the low side due to excessively low line pressure.	<ul style="list-style-type: none">• Line pressure control system• Secondary speed sensor• Primary speed sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 10 consecutive seconds. Test start from 0 km/h (0 MPH).

ATF TEMP SEN	: 1.0 – 2.0 V
ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
VEHICLE SPEED	: 10 km/h (6 MPH) or more
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P0746" detected?

YES >> Go to [TM-318, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390721

1.CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-396, "Inspection and Judgment"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts. Refer to [TM-396, "Inspection and Judgment"](#).

2.CHECK LINE PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check line pressure solenoid valve. Refer to [TM-319, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

3.CHECK SECONDARY SPEED SENSOR SYSTEM

P0746 PRESSURE CONTROL SOLENOID A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

Check secondary speed sensor system. Refer to [TM-306, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-302, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:0000000006390722

1.CHECK LINE PRESSURE SOLENOID VALVE

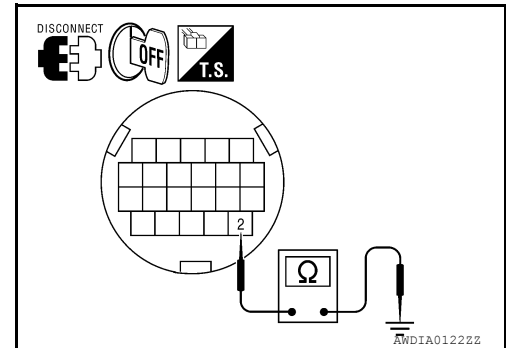
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0776 PRESSURE CONTROL SOLENOID B

Description

INFOID:000000006390723

The secondary pressure solenoid valve regulates the secondary pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390724

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0776	Pressure Control Solenoid B Performance/Stuck Off	Secondary pressure is too high or too low compared with the commanded value while driving.	<ul style="list-style-type: none">• Harness or connectors (Solenoid circuit is open or shorted.)• Secondary pressure solenoid valve system• Secondary pressure sensor• Line pressure control system

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1. CHECK DTC DETECTION

Ⓐ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 30 consecutive seconds.

ATF TEMP SEN	: 1.0 – 2.0 V
ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
VEHICLE SPEED	: 10 km/h (6 MPH) or more
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P0776" detected?

- YES >> Go to [TM-320, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390725

1. CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-396, "Inspection and Judgment"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts. Refer to [TM-396, "Inspection and Judgment"](#).

2. CHECK SECONDARY PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check secondary pressure solenoid valve. Refer to [TM-321, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

- YES >> GO TO 3.
NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

P0776 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

3.CHECK LINE PRESSURE SOLENOID VALVE

Check line pressure solenoid valve. Refer to [TM-321, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

4.CHECK SECONDARY PRESSURE SENSOR SYSTEM

Check secondary pressure sensor system. Refer to [TM-327, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000006390726

1.CHECK LINE PRESSURE SOLENOID VALVE

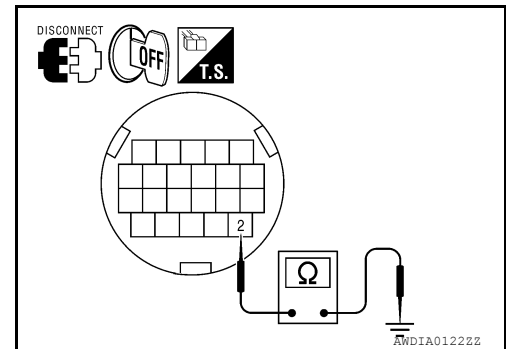
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000006390727

1.CHECK SECONDARY PRESSURE SOLENOID VALVE

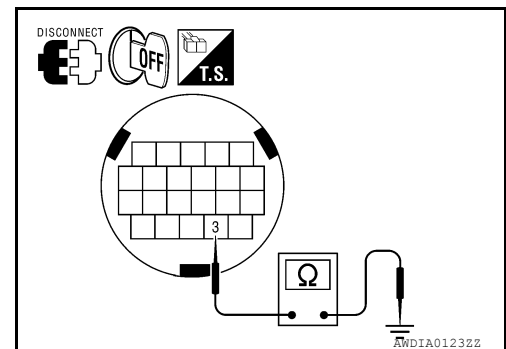
Check resistance between CVT unit terminal 3 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
3		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



P0778 PRESSURE CONTROL SOLENOID B

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0778 PRESSURE CONTROL SOLENOID B

Description

INFOID:000000006390728

The secondary pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390729

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0778	Pressure Control Solenoid B Electrical	<ul style="list-style-type: none">Normal voltage not applied to solenoid due to cut line, short, or the like.TCM detects as irregular by comparing target value with monitor value.	<ul style="list-style-type: none">Harness or connectors (Solenoid circuit is open or shorted.)Secondary pressure solenoid valve

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

- Start engine.
- Drive vehicle and maintain the following conditions for at least 5 consecutive seconds.
- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P0778" detected?

YES >> Go to [TM-322, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390730

1.CHECK SECONDARY PRESSURE SOLENOID VALVE CIRCUIT

- Turn ignition switch OFF.
- Disconnect TCM harness connector.
- Check resistance between TCM harness connector F16 terminal 39 and ground.

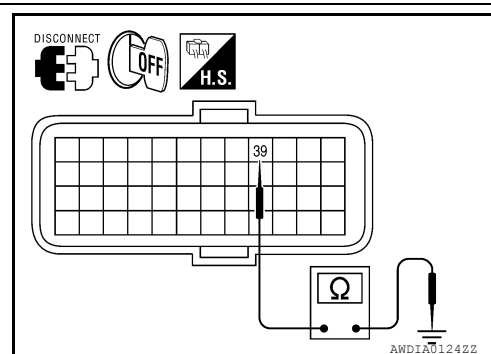
TCM harness connector		Ground	Resistance (Approx.)
Connector	Terminal		
F16	39		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> GO TO 5.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND SECONDARY PRESSURE SOLENOID VALVE (PART 1)



P0778 PRESSURE CONTROL SOLENOID B

[CVT: RE0F10A]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 39 and CVT unit harness connector F46 (B) terminal 3.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	39	F46 (B)	3	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK HARNESS BETWEEN TCM AND SECONDARY PRESSURE SOLENOID VALVE (PART 2)

Check continuity between TCM harness connector F16 terminal 39 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	39		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK SECONDARY PRESSURE SOLENOID VALVE

Check secondary pressure solenoid valve. Refer to [TM-323. "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace transaxle assembly. Refer to [TM-414. "Removal and Installation"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403. "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000006390731

1.CHECK SECONDARY PRESSURE SOLENOID VALVE

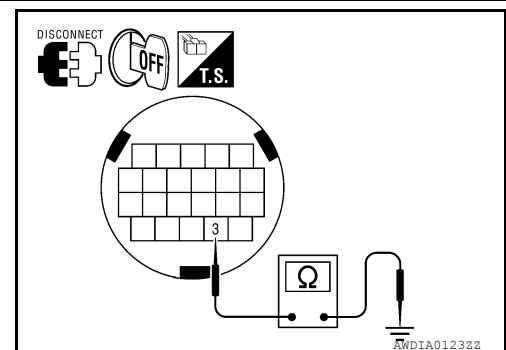
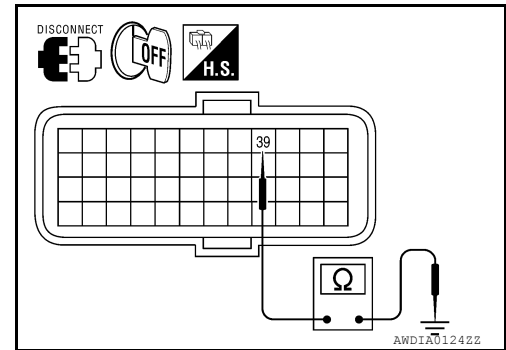
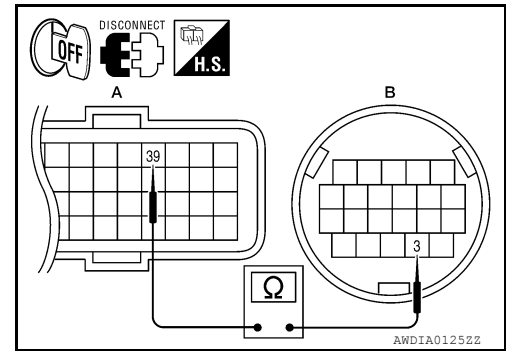
Check resistance between CVT unit terminal 3 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
3		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414. "Removal and Installation"](#).



P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0826 UP AND DOWN SHIFT SW

Description

INFOID:000000006390732

Manual mode switch is installed in CVT shift selector. The manual mode switch sends shift up and shift down switch signals to TCM with CAN communication.

TCM sends the switch signals to combination meter via CAN communication line. Then manual mode switch position is indicated on the shift position indicator.

DTC Logic

INFOID:000000006390733

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0826	Up and Down Shift Switch Circuit	When an impossible pattern of switch signals is detected, a malfunction is detected.	<ul style="list-style-type: none">• Harness or connectors- (These switches circuit is open or shorted.)- (TCM, and combination meter circuit are open or shorted.)- (CAN communication line is open or shorted.)• Manual mode select switch (Built into CVT shift selector)• Manual mode position select switch (Built into CVT shift selector)

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Drive vehicle and maintain the following conditions for at least 2 consecutive seconds.

MMODE : On

Is "P0826" detected?

YES >> Go to [TM-324, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390734

1.CHECK MANUAL MODE SWITCH SIGNALS

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Check the ON/OFF operations of each monitor item.

Item name	Condition	Display value
MMODE	Manual shift gate position	On
	Other than the above	Off
NONMMODE	Manual shift gate position	Off
	Other than the above	On

P0826 UP AND DOWN SHIFT SW

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

Item name	Condition	Display value
UPLVR	Selector lever: + side	On
	Other than the above	Off
DOWNLVR	Selector lever: – side	On
	Other than the above	Off

⊗ Without CONSULT-III

Drive vehicle in the manual mode, and confirm that the actual gear position and the meter's indication of the position mutually coincide when the selector lever is shifted to the “+ (up)” or “– (down)” side (1st ⇔ 6th gear).

Is the inspection result normal?

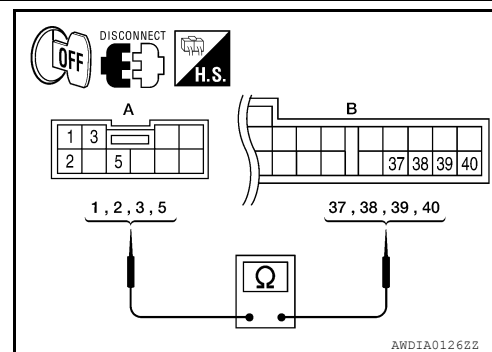
YES >> GO TO 7.

NO >> GO TO 2.

2.CHECK HARNESS BETWEEN CVT SHIFT SELECTOR AND COMBINATION METER (PART 1)

1. Turn ignition switch OFF.
2. Disconnect CVT shift selector harness connector and combination meter harness connector.
3. Check continuity between CVT shift selector harness connector M23 (A) terminal 1, 2, 3 and 5 and combination meter harness connector M24 (B) terminal 40, 38, 39 and 37.

CVT shift selector harness connector		Combination meter harness connector		Continuity
Connector	Terminal	Connector	Terminal	
M23 (A)	1	M24 (B)	40	Existed
	2		38	
	3		39	
	5		37	



Is the inspection result normal?

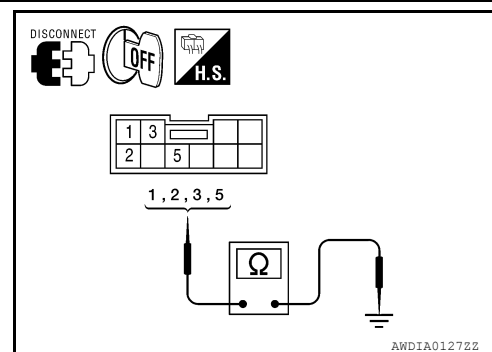
YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK HARNESS BETWEEN CVT SHIFT SELECTOR AND COMBINATION METER (PART 2)

Check continuity between CVT shift selector harness connector M23 terminal 1, 2, 3, and 5 and ground.

CVT shift selector harness connector		Ground	Continuity
Connector	Terminal		
M23	1	Ground	Not existed
	2		
	3		
	5		



Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK GROUND CIRCUIT (PART 1)

P0826 UP AND DOWN SHIFT SW

[CVT: RE0F10A]

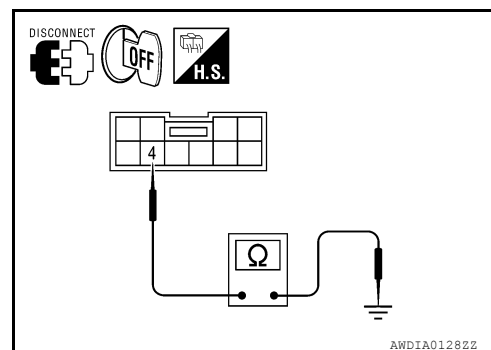
< DTC/CIRCUIT DIAGNOSIS >

Check continuity between CVT shift selector harness connector M23 terminal 4 and ground.

CVT shift selector harness connector		Ground	Continuity
Connector	Terminal		
M23	4		Existed

Is the inspection result normal?

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



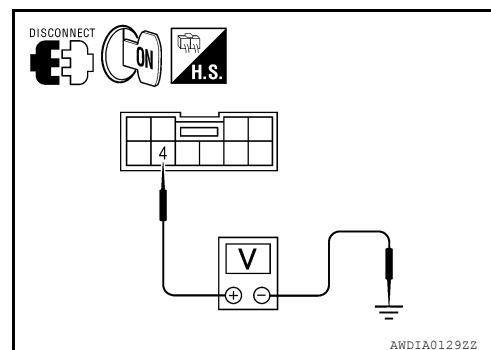
5.CHECK GROUND CIRCUIT (PART 2)

- Turn ignition switch ON.
- Check voltage between CVT shift selector harness connector M23 terminal 4 and ground.

CVT shift selector harness connector		Ground	Voltage (Approx.)
Connector	Terminal		
M23	4		0 V

Is the inspection result normal?

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



6.CHECK MANUAL MODE SWITCH

Check manual mode switch. Refer to [TM-326. "Component Inspection \(Manual Mode Switch\)"](#).

Is the inspection result normal?

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

7.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-403. "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

Component Inspection (Manual Mode Switch)

INFOID:000000006390735

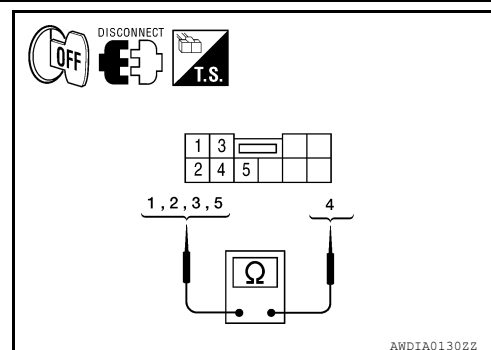
1.CHECK MANUAL MODE SWITCH

Check continuity between CVT shift selector terminals.

CVT shift selector terminals		Condition	Continuity
5	4	Manual shift gate position	Not existed
		Other than the above	Existed
1	4	Manual shift gate position	Existed
		Other than the above	Not existed
3	4	Selector lever: UP (+ side)	Existed
		Other than the above	Not existed
2	4	Selector lever: DOWN (- side)	Existed
		Other than the above	Not existed

Is the inspection result normal?

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



P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

Description

INFOID:000000006390736

The secondary pressure sensor detects secondary pressure of CVT and sends TCM the signal.

DTC Logic

INFOID:000000006390737

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0840	Transmission Fluid Pressure Sensor/Switch A Circuit	Signal voltage of the secondary pressure sensor is too high or too low while driving.	<ul style="list-style-type: none">• Harness or connectors (Sensor circuit is open or shorted.)• Secondary pressure sensor

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

4. Start engine and wait for at least 5 consecutive seconds.

Is "P0840" detected?

YES >> Go to [TM-327, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390738

1.CHECK INPUT SIGNAL

1. Start engine.
2. Check voltage between TCM harness connector F16 terminal 15 and ground.

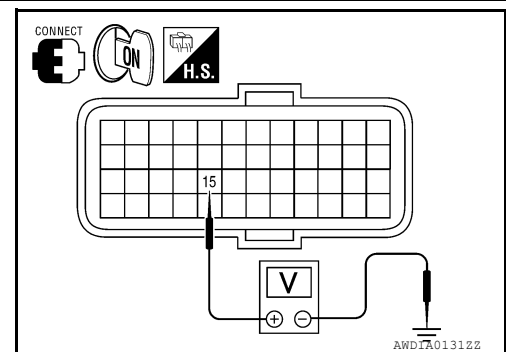
TCM harness connector		Ground	Condition	Voltage (Approx.)
Connector	Terminal			
F16	15		"N" position idle	1.0 V

Is the inspection result normal?

YES >> GO TO 8.

NO >> GO TO 2.

2.CHECK POWER AND SENSOR GROUND



P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

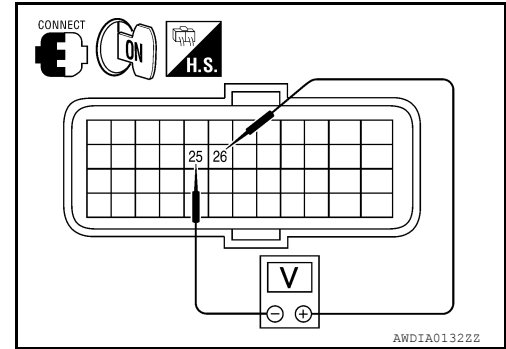
[CVT: RE0F10A]

Check voltage between TCM harness connector F16 terminal 25 and 26.

TCM harness connector			Voltage (Approx.)
Connector	Terminal		
F16	25	26	5.0 V

Is the inspection result normal?

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



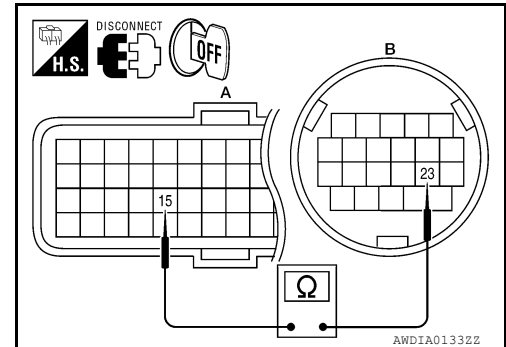
3. CHECK HARNESS BETWEEN TCM AND CVT UNIT (SECONDARY PRESSURE SENSOR) (PART 1)

- Turn ignition switch OFF.
- Disconnect TCM harness connector and CVT unit harness connector.
- Check continuity between TCM harness connector F16 (A) terminal 15 and CVT unit harness connector F46 (B) terminal 23.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	15	F46 (B)	23	Existed

Is the inspection result normal?

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



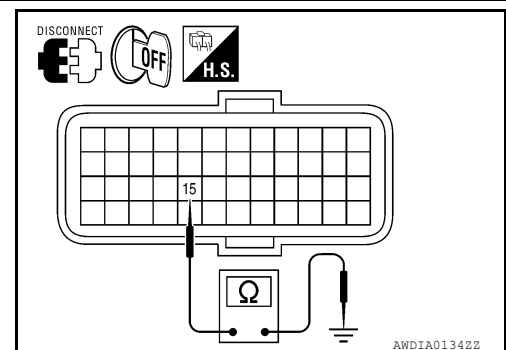
4. CHECK HARNESS BETWEEN TCM AND CVT UNIT (SECONDARY PRESSURE SENSOR) (PART 2)

Check continuity between TCM harness connector F16 terminal 15 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	15		Not existed

Is the inspection result normal?

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



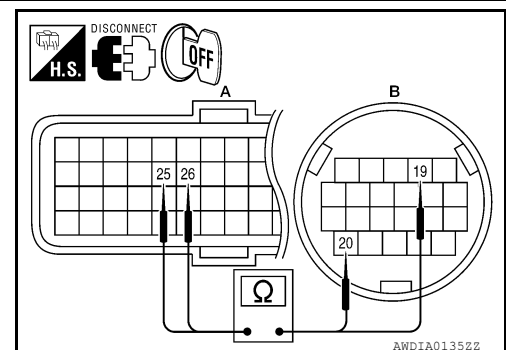
5. CHECK HARNESS BETWEEN TCM AND CVT UNIT (SENSOR POWER AND SENSOR GROUND) (PART 1)

- Turn ignition switch OFF.
- Disconnect TCM harness connector and CVT unit harness connector.
- Check continuity between TCM harness connector F16 (A) terminal 25, 26 and CVT unit harness connector F46 (B) terminal 19, 20.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	25	F46 (B)	19	Existed
	26		20	

Is the inspection result normal?

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



6. CHECK HARNESS BETWEEN TCM AND CVT UNIT (SENSOR POWER AND SENSOR GROUND) (PART 2)

P0840 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

2)

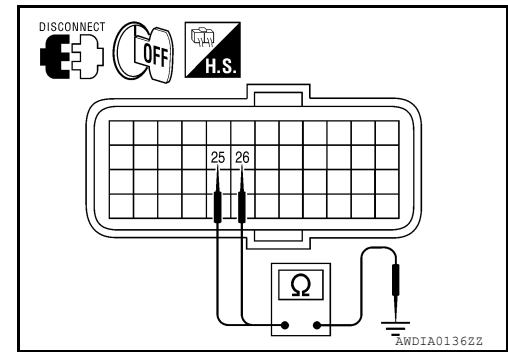
Check continuity between TCM harness connector F16 terminal 25, 26 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	25		Not existed
	26		

Is the inspection result normal?

YES >> GO TO 7.

NO >> Repair or replace damaged parts.



7. CHECK TCM

1. Replace same type TCM. Refer to [TM-403, "Removal and Installation"](#).
2. Connect each connector.
3. Perform "DTC CONFIRMATION PROCEDURE". Refer to [TM-327, "DTC Logic"](#).

Is "P0840" detected?

YES >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

NO >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

8. DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

Description

INFOID:000000006390739

Using the engine load (throttle position), the primary pulley revolution speed, and the secondary pulley revolution speed as input signal, TCM changes the operating pressure of the primary pulley and the secondary pulley and changes the groove width of the pulley to control the gear ratio.

DTC Logic

INFOID:000000006390740

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0841	Transmission Fluid Pressure Sensor/Switch A Circuit Range/Performance	Secondary pressure became higher than line pressure.	<ul style="list-style-type: none">• Harness or connectors (Sensor circuit is open or shorted.)• Secondary pressure sensor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 12 consecutive seconds.

VEHICLE SPEED : 40 km/h (25 MPH) or more

RANGE : "D" position

Is "P0841" detected?

YES >> Go to [TM-330, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390741

1.CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-396, "Inspection and Judgment"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts. Refer to [TM-396, "Inspection and Judgment"](#).

2.CHECK SECONDARY PRESSURE SENSOR SYSTEM

Check secondary pressure sensor system. Refer to [TM-327, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK LINE PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check line pressure solenoid valve. Refer to [TM-331, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

P0841 TRANSMISSION FLUID PRESSURE SEN/SW A

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

4.CHECK SECONDARY PRESSURE SOLENOID VALVE

Check secondary pressure solenoid valve. Refer to [TM-331. "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK STEP MOTOR SYSTEM

Check step motor system. Refer to [TM-346. "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 6.

NO >> Repair or replace damaged parts.

6.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403. "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000006390742

1.CHECK LINE PRESSURE SOLENOID VALVE

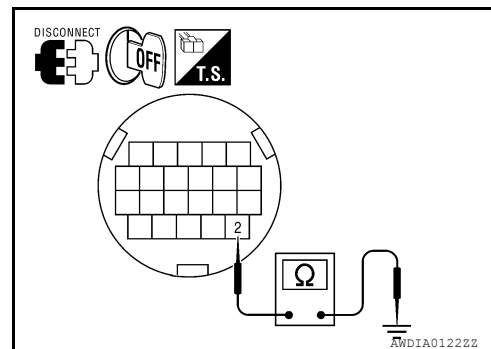
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414. "Removal and Installation"](#).



Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000006390743

1.CHECK SECONDARY PRESSURE SOLENOID VALVE

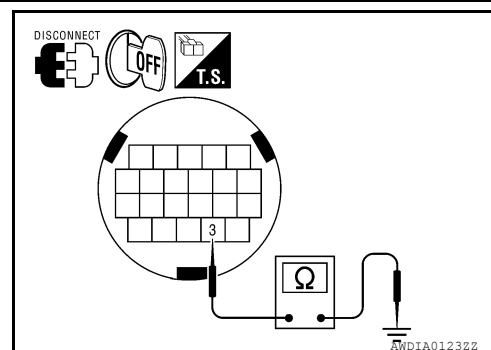
Check resistance between CVT unit terminal 3 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
3		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414. "Removal and Installation"](#).



P0868 TRANSMISSION FLUID PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P0868 TRANSMISSION FLUID PRESSURE

Description

INFOID:000000006390744

The secondary pressure solenoid valve regulates the secondary pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390745

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P0868	Transmission Fluid Pressure Low	Secondary fluid pressure is too low compared with the commanded value while driving.	<ul style="list-style-type: none">• Harness or connectors (Solenoid circuit is open or shorted.)• Secondary pressure solenoid valve system• Secondary pressure sensor• Line pressure control system

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1. CHECK DTC DETECTION

Ⓐ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

4. Start engine and maintain the following conditions for at least 10 consecutive seconds.

VEHICLE SPEED (accelerate slowly) : 0 → 50 km/h (31 MPH)

ACC PEDAL OPEN : 0.5/8 – 1.0/8

RANGE : "D" position

Is "P0868" detected?

- YES >> Go to [TM-332, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390746

1. CHECK LINE PRESSURE

Perform line pressure test. Refer to [TM-396, "Inspection and Judgment"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Repair or replace damaged parts. Refer to [TM-396, "Inspection and Judgment"](#).

2. CHECK SECONDARY PRESSURE SOLENOID VALVE

1. Turn ignition switch OFF.
2. Disconnect CVT unit harness connector.
3. Check secondary pressure solenoid valve. Refer to [TM-333, "Component Inspection \(Secondary Pressure Solenoid Valve\)"](#).

P0868 TRANSMISSION FLUID PRESSURE

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK LINE PRESSURE SOLENOID VALVE

Check line pressure solenoid valve. Refer to [TM-333, "Component Inspection \(Line Pressure Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK SECONDARY PRESSURE SENSOR SYSTEM

Check secondary pressure sensor system. Refer to [TM-327, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Line Pressure Solenoid Valve)

INFOID:000000006390747

1.CHECK LINE PRESSURE SOLENOID VALVE

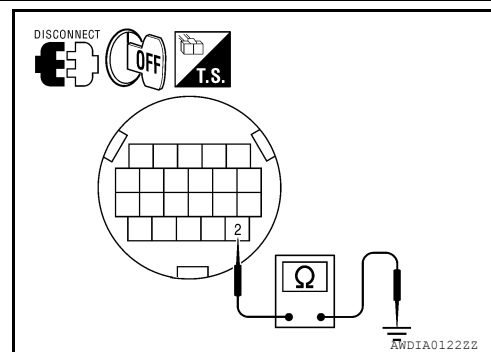
Check resistance between CVT unit terminal 2 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
2		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



Component Inspection (Secondary Pressure Solenoid Valve)

INFOID:000000006390748

1.CHECK SECONDARY PRESSURE SOLENOID VALVE

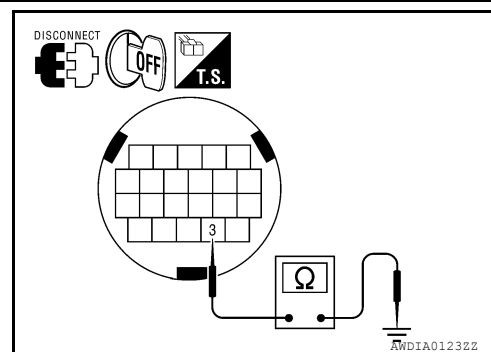
Check resistance between CVT unit terminal 3 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
3		3.0 – 9.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



P1701 TCM

Description

INFOID:000000006390749

When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops, malfunction is detected.

NOTE:

Since "P1701" will be indicated when replacing TCM, perform diagnosis after erasing "SELF-DIAG RESULTS"

DTC Logic

INFOID:000000006390750

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1701	Power Supply Circuit	<ul style="list-style-type: none"> When the power supply to the TCM is cut OFF, for example because the battery is removed, and the self-diagnosis memory function stops. This is not a malfunction message (When-ever shutting OFF a power supply to the TCM, this message appears on the screen). 	Harness or connectors (Battery or ignition switch and TCM circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

① With CONSULT-III

- Turn ignition switch ON.
- Wait for at least 2 consecutive seconds.
- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1701" detected?

YES >> Go to [TM-334, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390751

1.CHECK TCM POWER SOURCE

- Turn ignition switch OFF.
- Disconnect TCM harness connector.
- Check voltage between TCM harness connector F16 terminal 46, 48, 47 and 5, 42.

TCM harness connector			Condition	Voltage (Approx.)
Connec- tor	Terminal			
F16	46	5, 42	Ignition switch ON	Battery voltage
			Ignition switch OFF	0 V
	48		Ignition switch ON	Battery voltage
			Ignition switch OFF	0 V
	47		Always	Battery voltage

Is the inspection result normal?

YES >> GO TO 6.

< DTC/CIRCUIT DIAGNOSIS >

NO >> GO TO 2.

2.CHECK TCM GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Check continuity between TCM harness connector F16 terminal 5, 42 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	5		Existed
	42		

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK TCM POWER CIRCUIT

Check voltage between TCM harness connector F16 terminal 46, 48, 47 and ground.

TCM harness connector		Condition	Voltage (Approx.)
Connector	Terminal		
F16	46	Ignition switch ON	Battery voltage
		Ignition switch OFF	0 V
	48	Ignition switch ON	Battery voltage
		Ignition switch OFF	0 V
	47	Always	Battery voltage

Is the inspection result normal?

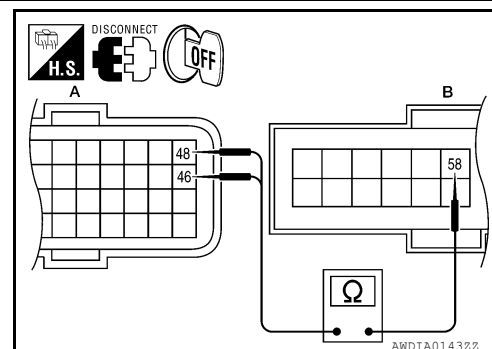
YES >> GO TO 6.

NO >> GO TO 4.

4.CHECK HARNESS BETWEEN TCM AND IPDM E/R AND BETWEEN TCM AND BATTERY (PART 1)

1. Turn ignition switch OFF.
2. Disconnect IPDM E/R harness connector F10.
3. Check continuity between TCM harness connector F16 (A) terminal 46, 48 and IPDM E/R harness connector F10 (B) terminal 58.

TCM harness connector		IPDM E/R harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	46	F10 (B)	58	Existed
	48			



4. Disconnect fuse block J/B harness connector E6.
5. Check continuity between TCM harness connector F16 terminal 47 and fuse block J/B harness connector E6 terminal 12P.

TCM harness connector		Fuse block J/B harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	47	E6 (B)	12P	Existed

< DTC/CIRCUIT DIAGNOSIS >

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts.

5.CHECK HARNESS BETWEEN TCM AND IPDM E/R AND BETWEEN TCM AND BATTERY (PART 2)

Check continuity between TCM harness connector F16 terminal 46, 47, 48 and ground.

TCM harness connector			Continuity
Connector	Terminal		
F16	46	Ground	Not existed
	47		
	48		

Is the inspection result normal?

YES >> Check the following. If NG, repair or replace damaged parts.

- 10A fuse (No. 34, located in IPDM E/R)
- 10A fuse (No. 11, located in fuse block)
- Ignition switch. Refer to [PG-85, "Wiring Diagram — Ignition Power Supply —"](#).

NO >> Repair or replace damaged parts.

6.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

P1705 TP SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P1705 TP SENSOR

Description

INFOID:000000006390752

Electric throttle control actuator consists of throttle control motor, accelerator pedal position sensor, throttle position sensor etc. The actuator sends a signal to the ECM, and ECM sends the signal to TCM with CAN communication.

DTC Logic

INFOID:000000006390753

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1705	Accelerator Pedal Position Sensor Signal Circuit	TCM does not receive the proper accelerator pedal position signals (input by CAN communication) from ECM.	<ul style="list-style-type: none">ECMHarness or connectors (CAN communication line is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

④With CONSULT-III

- Turn ignition switch ON.
- Depress accelerator pedal fully and release it, then wait for 5 seconds.
- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1705" detected?

- YES >> Go to [TM-337, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390754

1.CHECK DTC WITH ECM

④With CONSULT-III

- Turn ignition switch ON.
- Perform "SELF-DIAG RESULTS" mode for "ENGINE".

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Check DTC Detected Item. Refer to [EC-286, "DTC Index"](#).

2.CHECK DTC WITH TCM

④With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1705" detected?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> GO TO 3.

3.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

P1722 VEHICLE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P1722 VEHICLE SPEED

Description

INFOID:000000006390755

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

DTC Logic

INFOID:000000006390756

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1722	Vehicle Speed Signal Circuit	<ul style="list-style-type: none">CAN communication with the ABS actuator and the electric unit (control unit) is malfunctioning.There is a great difference between the vehicle speed signal from the ABS actuator and the electric unit (control unit), and the vehicle speed sensor signal.	<ul style="list-style-type: none">Harness or connectors (Sensor circuit is open or shorted.)ABS actuator and electric unit (control unit)

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④With CONSULT-III

- Turn ignition switch ON.
- Select "DATA MONITOR".
- Start engine and maintain the following conditions for at least 5 consecutive seconds.

ACC PEDAL OPEN	: 1.0/8 or less
VEHICLE SPEED	: 30 km/h (19 MPH) or more

Is "P1722" detected?

- YES >> Go to [TM-338, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390757

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

④With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "ABS".

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Check DTC detected item. Refer to [BRC-45, "DTC No. Index"](#).

2.CHECK DTC WITH TCM

④With CONSULT-III

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1722" detected?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> GO TO 3.

3.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

P1722 VEHICLE SPEED

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

YES >> Replace TCM. Refer to [TM-403. "Removal and Installation"](#).
NO >> Repair or replace damaged parts.

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P1723 SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P1723 SPEED SENSOR

Description

INFOID:000000006390758

The secondary speed sensor detects the revolution of parking gear and generates a pulse signal. The pulse signal is sent to the TCM, which converts it into vehicle speed.

The primary speed sensor detects the primary pulley revolution speed and sends a signal to the TCM.

DTC Logic

INFOID:000000006390759

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1723	Speed Sensor Circuit	A rotation sensor error is detected because the gear does not change in accordance with the position of the stepping motor. CAUTION: One of the "P0720", the "P0715" or the "P0725" is displayed with the DTC at the same time.	<ul style="list-style-type: none">• Harness or connectors (Sensor circuit is open or shorted.)• Secondary speed sensor• Primary speed sensor• Engine speed signal system

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 5 consecutive seconds.

VEHICLE SPEED	: 10 km/h (6 MPH) or more
ACC PEDAL OPEN	: More than 1.0/8
RANGE	: "D" position
ENG SPEED	: 450 rpm or more
Driving location	: Driving the vehicle uphill (increased engine load) will help maintain the driving conditions required for this test.

Is "P1723" detected?

YES >> Go to [TM-340, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390760

1.CHECK STEP MOTOR FUNCTION

Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1778" detected?

YES >> Repair or replace damaged parts. Refer to [TM-349, "DTC Logic"](#).

NO >> GO TO 2.

2.CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-306, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

P1723 SPEED SENSOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

3.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-302, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK ENGINE SPEED SIGNAL SYSTEM

Check engine speed signal system. Refer to [TM-310, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Repair or replace damaged parts. Refer to [EC-264, "Description"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

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P1726 THROTTLE CONTROL SIGNAL

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P1726 THROTTLE CONTROL SIGNAL

Description

INFOID:000000006390761

Electric throttle control actuator consists of throttle control motor, accelerator pedal position sensor, throttle position sensor etc. The actuator sends a signal to the ECM, and ECM sends the signal to TCM with CAN communication.

DTC Logic

INFOID:000000006390762

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1726	Throttle Control Signal Circuit	The electronically controlled throttle for ECM is malfunctioning.	Harness or connectors (Sensor circuit is open or shorted.)

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

ⒺWith CONSULT-III

1. Start engine and let it idle for 5 seconds.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1726" detected?

- YES >> Go to [TM-342, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390763

1.CHECK DTC WITH ECM

ⒺWith CONSULT-III

1. Turn ignition switch ON.
2. Select "SELF-DIAG RESULTS" mode for "ENGINE" with CONSULT-III. Refer to [EC-99, "CONSULT-III Function"](#).

Is the inspection result normal?

- YES >> GO TO 2.
NO >> Check the DTC Detected Item. Go to [EC-99, "CONSULT-III Function"](#).

2.CHECK TCM

Check TCM input/output signals. Refer to [TM-354, "Reference Value"](#).

Is the inspection result normal?

- YES >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).
NO >> Replace TCM. Refer to [TM-403, "Exploded View"](#).

P1740 SELECT SOLENOID

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P1740 SELECT SOLENOID

Description

INFOID:000000006390764

- Lock-up select solenoid valve controls lock-up clutch pressure or forward clutch pressure (reverse brake pressure).
- When controlling lock-up clutch, the valve is turned OFF. When controlling forward clutch, it is turned ON.

DTC Logic

INFOID:000000006390765

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1740	Lock-up Select Solenoid Valve Circuit	<ul style="list-style-type: none">• Normal voltage not applied to solenoid due to cut line, short, or the like.• TCM detects as irregular by comparing target value with monitor value.	<ul style="list-style-type: none">• Harness or connectors (Solenoid circuit is open or shorted.)• Lock-up select solenoid valve

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

Ⓜ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Start engine and maintain the following conditions for at least 5 consecutive seconds.

RANGE : "D" or "N" position
(At each time, wait for 5 seconds.)

Is "P1740" detected?

- YES >> Go to [TM-343, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390766

1.CHECK LOCK-UP SELECT SOLENOID VALVE CIRCUIT

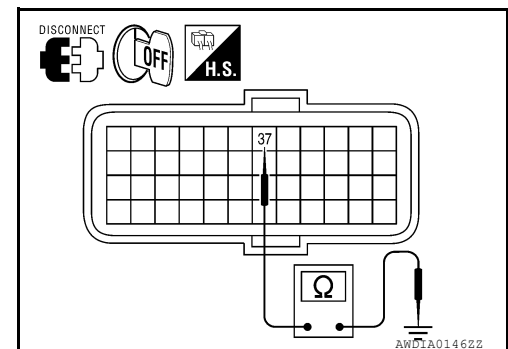
1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check resistance between TCM harness connector F16 terminal 37 and ground.

TCM harness connector		Ground	Resistance (Approx.)
Connector	Terminal		
F16	37		17.0 – 38.0 Ω

Is the inspection result normal?

- YES >> GO TO 5.
NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND CVT UNIT (LOCK-UP SELECT SOLENOID VALVE) (PART 1)



P1740 SELECT SOLENOID

[CVT: RE0F10A]

< DTC/CIRCUIT DIAGNOSIS >

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 37 and CVT unit harness connector F46 (B) terminal 13.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	37	F46 (B)	13	Existed

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK HARNESS BETWEEN TCM AND CVT UNIT (LOCK-UP SELECT SOLENOID VALVE) (PART 2)

Check continuity between TCM harness connector F16 terminal 37 and ground.

TCM harness connector		Ground	Continuity
Connector	Terminal		
F16	37		Not existed

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.CHECK LOCK-UP SELECT SOLENOID VALVE

Check lock-up select solenoid valve. Refer to [TM-344, "Component Inspection \(Lock-up Solenoid Valve\)"](#).

Is the inspection result normal?

YES >> GO TO 5.

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

Component Inspection (Lock-up Solenoid Valve)

INFOID:000000006390767

1.CHECK LOCK-UP SELECT SOLENOID VALVE

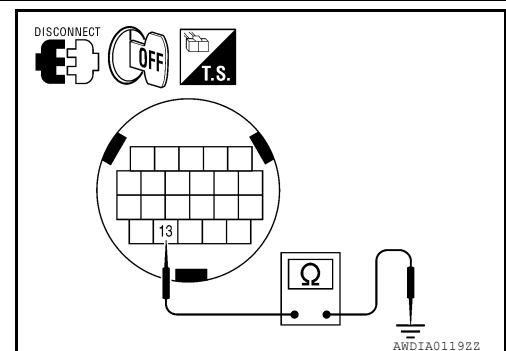
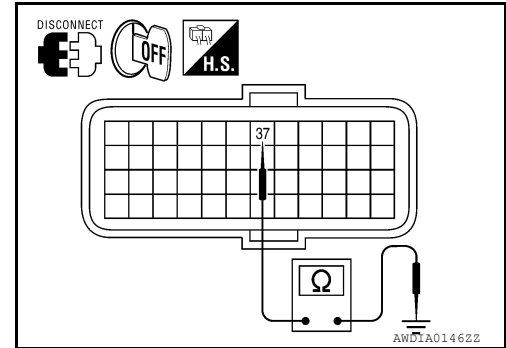
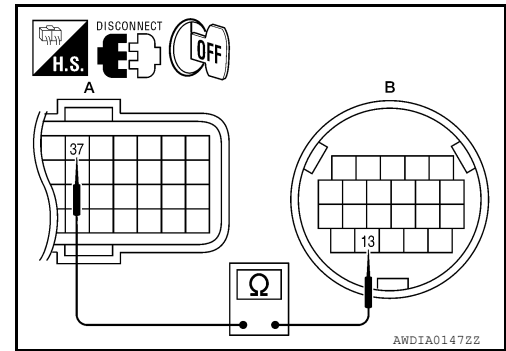
Check resistance between CVT unit connector terminal and ground.

CVT unit terminal	Ground	Resistance (Approx.)
13		17.0 – 38.0 Ω

Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414, "Removal and Installation"](#).



P1745 LINE PRESSURE CONTROL

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P1745 LINE PRESSURE CONTROL

Description

INFOID:000000006390768

The line pressure solenoid valve regulates the oil pump discharge pressure to suit the driving condition in response to a signal sent from the TCM.

DTC Logic

INFOID:000000006390769

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1745	Line Pressure Control Circuit	TCM detects the unexpected line pressure.	TCM

DTC CONFIRMATION PROCEDURE

NOTE:

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

1.CHECK DTC DETECTION

With CONSULT-III

1. Turn ignition switch ON
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

Is "P1745" detected?

- YES >> Go to [TM-345, "Diagnosis Procedure"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390770

1.CHECK DTC

With CONSULT-III

1. Start engine.
2. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1745" displayed?

- YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).
NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

P1777 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P1777 STEP MOTOR

Description

INFOID:000000006390771

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

DTC Logic

INFOID:000000006390772

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1777	Step Motor Circuit	Each coil of the step motor is not energized properly due to an open or a short.	<ul style="list-style-type: none">• Harness or connectors (Step motor circuit is open or shorted.)• Step motor

DTC CONFIRMATION PROCEDURE

CAUTION:

Always drive vehicle at a safe speed.

NOTE:

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

1.CHECK DTC DETECTION

④ With CONSULT-III

1. Start engine.
2. Drive vehicle for at least 5 consecutive seconds.
3. Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

Is "P1777" detected?

YES >> Go to [TM-346. "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42. "Intermittent Incident"](#).

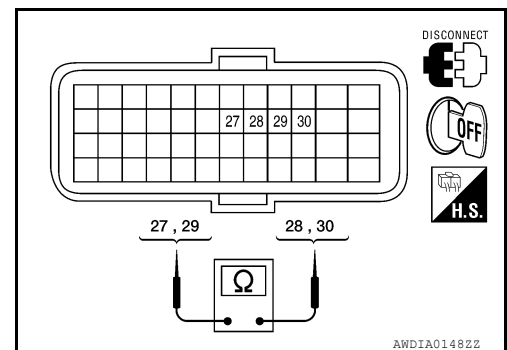
Diagnosis Procedure

INFOID:000000006390773

1.CHECK STEP MOTOR CIRCUIT

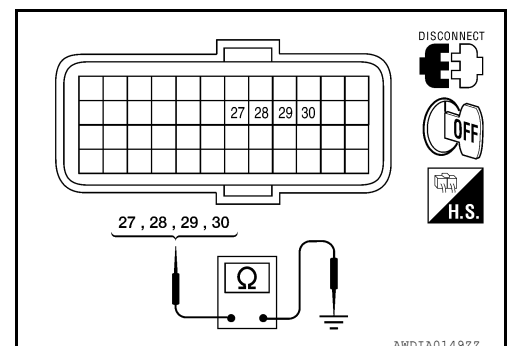
1. Turn ignition switch OFF.
2. Disconnect TCM harness connector.
3. Check resistance between TCM harness connector F16 terminal 27, 29 and 28, 30.

TCM harness connector			Resistance (Approx.)
Connector	Terminal		
F16	27	28	30.0 Ω
	29	30	



4. Check resistance between TCM harness connector F16 terminal 27, 28, 29, 30 and ground.

TCM harness connector		Resistance (Approx.)
Connector	Terminal	
F16	27	15.0 Ω
	28	
	29	
	30	



Is the inspection result normal?

P1777 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

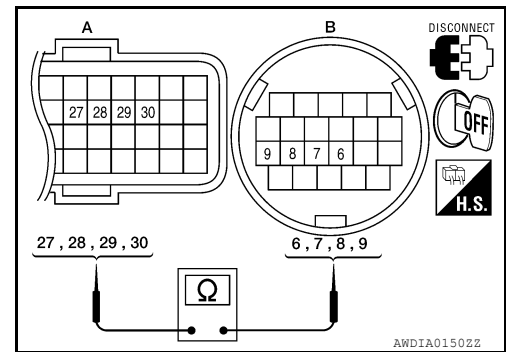
[CVT: RE0F10A]

- YES >> GO TO 5.
NO >> GO TO 2.

2.CHECK HARNESS BETWEEN TCM AND CVT UNIT (STEP MOTOR) (PART 1)

1. Disconnect CVT unit harness connector.
2. Check continuity between TCM harness connector F16 (A) terminal 27, 28, 29, 30 and CVT unit harness connector F46 (B) terminal 9, 8, 7, 6.

TCM harness connector		CVT unit harness connector		Continuity
Connector	Terminal	Connector	Terminal	
F16 (A)	27	F46 (B)	9	Existed
	28		8	
	29		7	
	30		6	



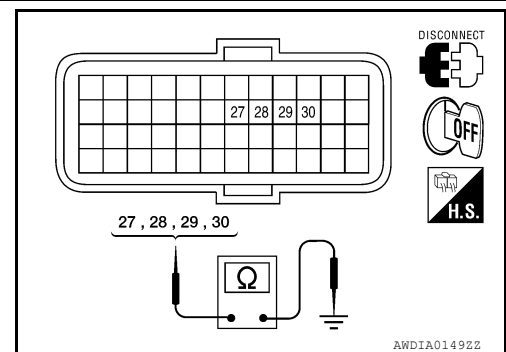
Is the inspection result normal?

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

3.CHECK HARNESS BETWEEN TCM AND CVT UNIT (STEP MOTOR) (PART 2)

Check continuity between TCM harness connector F16 terminal 27, 28, 29, 30 and ground.

TCM harness connector			Continuity
Connector	Terminal		
F16	27	Ground	Not existed
	28		
	29		
	30		



Is the inspection result normal?

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

4.CHECK STEP MOTOR

Check step motor. Refer to [TM-347. "Component Inspection \(Step Motor\)".](#)

Is the inspection result normal?

- YES >> GO TO 5.
NO >> Replace transaxle assembly. Refer to [TM-414. "Removal and Installation".](#)

5.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

- YES >> Replace TCM. Refer to [TM-403. "Removal and Installation".](#)
NO >> Repair or replace damaged parts.

Component Inspection (Step Motor)

INFOID:000000006390774

1.CHECK STEP MOTOR

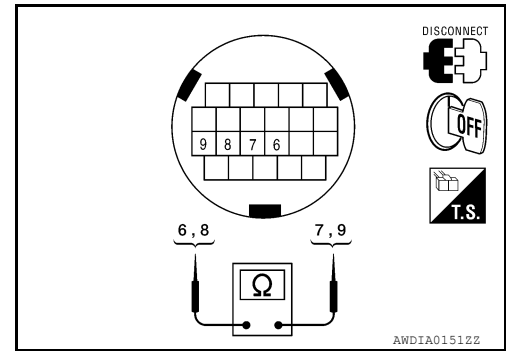
P1777 STEP MOTOR

[CVT: RE0F10A]

< DTC/CIRCUIT DIAGNOSIS >

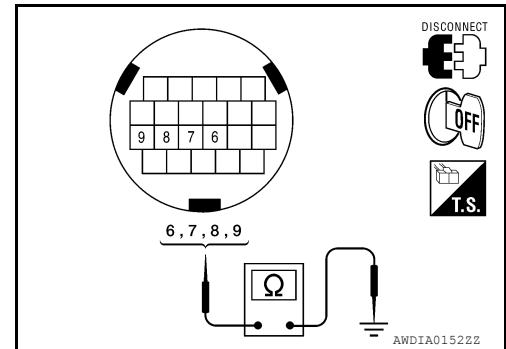
1. Check resistance between CVT unit terminal 6, 8 and 7, 9.

CVT unit terminals		Resistance (Approx.)
6	7	30.0 Ω
8	9	



2. Check resistance between CVT unit terminal 6, 7, 8, 9 and ground.

CVT unit terminal	Ground	Resistance (Approx.)
6		15.0 Ω
7		
8		
9		



Is the inspection result normal?

YES >> INSPECTION END

NO >> Replace transaxle assembly. Refer to [TM-414. "Removal and Installation"](#).

P1778 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

P1778 STEP MOTOR

Description

INFOID:000000006390775

- The step motor's 4 aspects of ON/OFF change according to the signal from TCM. As a result, the flow of line pressure to primary pulley is changed and pulley ratio is controlled.
- This diagnosis item is detected when electrical system is OK, but mechanical system is NG.
- This diagnosis item is detected when the state of the changing the speed mechanism in unit does not operate normally.

DTC Logic

INFOID:000000006390776

DTC DETECTION LOGIC

DTC	Trouble diagnosis name	DTC is detected if...	Possible cause
P1778	Step Motor Circuit Intermittent	There is a great difference between the number of steps for the stepping motor and for the actual gear ratio.	Step motor

DTC CONFIRMATION PROCEDURE

CAUTION:

- Always drive vehicle at a safe speed.
- Before starting "DTC CONFIRMATION PROCEDURE", confirm "Hi" or "Mid" or "Low" fixation by "PRI SPEED" and "VEHICLE SPEED" on "DATA MONITOR MODE".
- If hi-gear fixation occurred, go to [TM-349, "Diagnosis Procedure"](#).

NOTE:

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

1. CHECK DTC DETECTION

Ⓐ With CONSULT-III

1. Turn ignition switch ON.
2. Select "DATA MONITOR".
3. Make sure that output voltage of CVT fluid temperature sensor is within the range below.

ATF TEMP SEN : 1.0 – 2.0 V

If out of range, drive the vehicle to decrease the voltage (warm up the fluid) or stop engine to increase the voltage (cool down the fluid)

4. Start engine and maintain the following conditions for at least 30 consecutive seconds.

TEST START FROM 0 km/h (0 MPH)

CONSTANT ACCELERATION : Keep 30 sec or more

VEHICLE SPEED : 10 km/h (6 MPH) or more

ACC PEDAL OPEN : More than 1.0/8

RANGE : "D" position

ENG SPEED : 450 rpm or more

Is "P1778" detected?

YES >> Go to [TM-349, "Diagnosis Procedure"](#).

NO >> Check intermittent incident. Refer to [GI-42, "Intermittent Incident"](#).

Diagnosis Procedure

INFOID:000000006390777

1. CHECK STEP MOTOR SYSTEM

Check step motor system. Refer to [TM-346, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 2.

NO >> Repair or replace damaged parts.

P1778 STEP MOTOR

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

2.CHECK PRIMARY SPEED SENSOR SYSTEM

Check primary speed sensor system. Refer to [TM-302, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 3.

NO >> Repair or replace damaged parts.

3.CHECK SECONDARY SPEED SENSOR SYSTEM

Check secondary speed sensor system. Refer to [TM-306, "DTC Logic"](#).

Is the inspection result normal?

YES >> GO TO 4.

NO >> Repair or replace damaged parts.

4.DETECT MALFUNCTIONING ITEMS

Check TCM connector pin terminals for damage or loose connection with harness connector.

Is the inspection result normal?

YES >> Replace TCM. Refer to [TM-403, "Removal and Installation"](#).

NO >> Repair or replace damaged parts.

SHIFT POSITION INDICATOR CIRCUIT

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

SHIFT POSITION INDICATOR CIRCUIT

Description

INFOID:000000006390778

- TCM sends position indicator signals to combination meter by CAN communication line.
- Manual mode switch position is indicated on shift position indicator.

Component Function Check

INFOID:000000006390779

1.CHECK SHIFT POSITION INDICATOR

CAUTION:

Always drive vehicle at a safe speed.

1. Start engine.
2. Check if correct selector lever position ("P", "N", "R" or "D") is displayed as selector lever is moved into each position.
3. Drive vehicle in the manual mode, and confirm that the actual gear position and the meter's indication of the position mutually coincide when selector lever is shifted to the "UP (+ side)" or "DOWN (– side)" side (1st ⇔ 6th gear).

Is the inspection result normal?

YES >> INSPECTION END

NO >> Go to [TM-351, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000006390780

1.CHECK INPUT SIGNALS

 With CONSULT-III

1. Start engine.
2. Check if correct selector lever position ("P", "N", "R" or "D") is displayed as selector lever is moved into each position.
3. Select "RANGE" on "DATA MONITOR" and read out the value.
4. Drive vehicle in the manual mode, and confirm that the actual gear position and the meter's indication of the position mutually coincide when selector lever is shifted to the "UP (+ side)" or "DOWN (– side)" side (1st ⇔ 6th gear).

Is the inspection result normal?

YES >> INSPECTION END

NO-1 >> The actual gear position does not change, or shifting into the manual mode is not possible (no gear shifting in the manual mode possible). Or the shift position indicator is not indicated.

- Check manual mode switch. Refer to [TM-326, "Component Inspection \(Manual Mode Switch\)"](#).

- Check CVT main system (Fail-safe function actuated).

- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

NO-2 >> The actual gear position changes, but the shift position indicator is not indicated.

- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

NO-3 >> The actual gear position and the indication on the shift position indicator do not coincide.

- Perform "SELF-DIAG RESULTS" mode for "TRANSMISSION".

NO-4 >> Only a specific position or positions is/are not indicated on the shift position indicator.

- Check combination meter. Refer to [MWI-28, "CONSULT Function \(METER/M&A\)"](#).

SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

SHIFT LOCK SYSTEM

Description

INFOID:000000006390781

The selector lever cannot be shifted from "P" position to any other position unless the ignition switch is in the ON position and the brake pedal is depressed.

Diagnosis Procedure

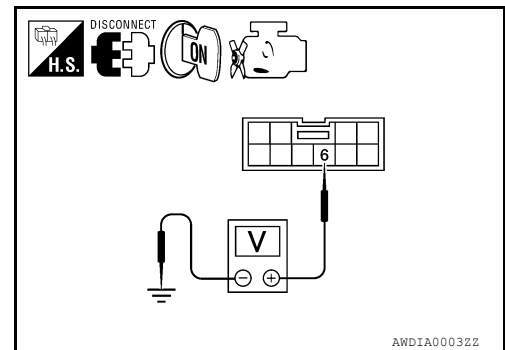
INFOID:000000006390782

Regarding Wiring Diagram information, refer to [TM-360, "Wiring Diagram"](#).

1. CHECK POWER SOURCE

1. Disconnect CVT shift selector connector.
2. Turn ignition switch ON.
3. Check voltage between CVT shift selector connector M23 terminal 6 and ground.

CVT shift selector		Condition	Voltage (Approx.)
Connector	Terminal		
M23	6	Brake pedal depressed	Battery voltage
		Brake pedal released	0V



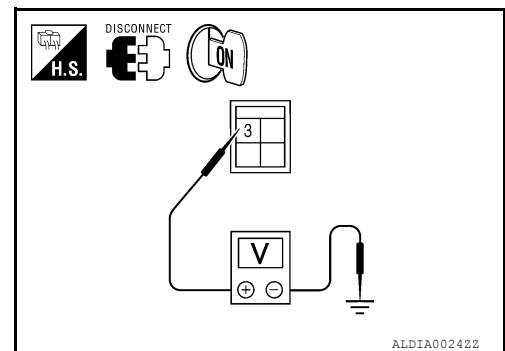
Is the inspection result normal?

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

2. CHECK POWER SOURCE AT STOP LAMP SWITCH

1. Turn ignition switch OFF.
2. Disconnect stop lamp switch connector.
3. Turn ignition switch ON.
4. Check voltage between stop lamp switch connector E38 terminal 3 and ground.

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



Is the inspection result normal?

- YES >> GO TO 3.
NO >> Check the following:
- Harness for short or open between fuse block (J/B) and stop lamp switch
 - 10A fuse [No. 3, located in fuse block (J/B)]

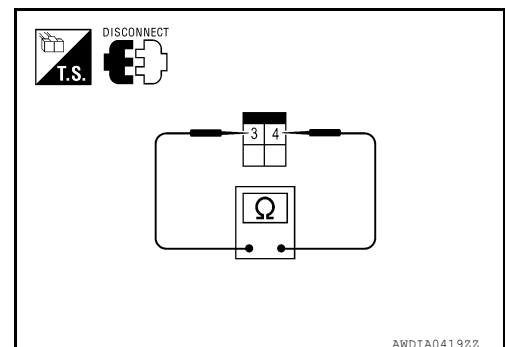
3. CHECK STOP LAMP SWITCH

1. Turn ignition switch OFF.
2. Check continuity between stop lamp switch terminals 3 and 4.

Stop lamp switch terminals	Condition	Continuity
3 and 4	Brake pedal depressed	Yes
	Brake pedal released	No

Is the inspection result normal?

- YES >> Repair harness between stop lamp switch and CVT shift selector.



SHIFT LOCK SYSTEM

< DTC/CIRCUIT DIAGNOSIS >

[CVT: RE0F10A]

NO >> Replace stop lamp switch. Refer to [BR-17, "Exploded View"](#).

4. CHECK GROUND CIRCUIT

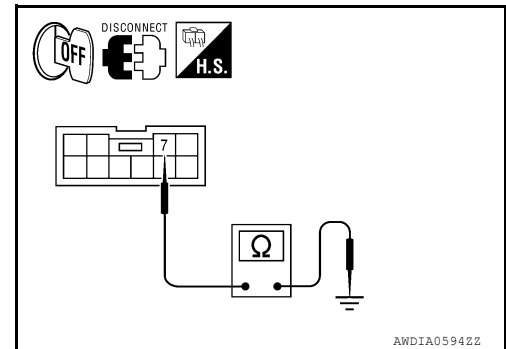
1. Turn ignition switch OFF.
2. Check continuity between CVT shift selector connector M23 terminal 7 and ground.

CVT shift selector		Ground	Continuity
Connector	Terminal		
M23	7	—	Yes

Is the inspection result normal?

YES >> Replace CVT shift selector. Refer to [TM-404, "Removal and Installation"](#).

NO >> Repair harness or connectors.



ECU DIAGNOSIS INFORMATION

TCM

Reference Value

INFOID:000000006390783

VALUES ON THE DIAGNOSIS TOOL

Item name	Condition	Display value (Approx.)
VSP SENSOR	During driving	Approximately matches the speedometer reading.
ESTM VSP SIG*	During driving	Approximately matches the speedometer reading.
PRI SPEED SEN	During driving (lock-up ON)	Approximately matches the engine speed.
ENG SPEED SIG	Engine running	Closely matches the tachometer reading.
SEC HYDR SEN	"N" position idle	1.0 V
ATF TEMP SEN	When CVT fluid temperature is 20°C (68°F)	2.0 V
	When CVT fluid temperature is 80°C (176°F)	1.0 V
VIGN SEN	Ignition switch: ON	Battery voltage
VEHICLE SPEED	During driving	Approximately matches the speedometer reading.
PRI SPEED	During driving (lock-up ON)	Approximately matches the engine speed.
SEC SPEED	During driving	45 X Approximately matches the speedometer reading.
ENG SPEED	Engine running	Closely matches the tachometer reading.
GEAR RATIO	During driving	2.34 - 0.39
ACC PEDAL OPEN	Released accelerator pedal - Fully depressed accelerator pedal	0.0/8 - 8.0/8
SEC PRESS	"N" position idle	1.3 MPa
STM STEP	During driving	0 step – 177 step
ISOLT1	Lock-up "OFF"	0.0 A
	Lock-up "ON"	0.7 A
ISOLT2	Release your foot from the accelerator pedal.	0.8 A
	Press the accelerator pedal all the way down.	0.0 A
ISOLT3	Secondary pressure low - Secondary pressure high	0.8 - 0.0 A
SOLMON1	Lock-up "OFF"	0.0 A
	Lock-up "ON"	0.7 A
SOLMON2	"N" position idle	0.8 A
	When stalled	0.3 - 0.6 A
SOLMON3	"N" position idle	0.6 - 0.7 A
	When stalled	0.4 - 0.6 A
P POSITION SW	Selector lever in "P" position	ON
	When setting selector lever to other positions.	OFF
R POSITION SW	Selector lever in "R" position	ON
	When setting selector lever to other positions.	OFF
N POSITION SW	Selector lever in "N" position	ON
	When setting selector lever to other positions.	OFF
D POSITION SW	Selector lever in "D" position	ON
	When setting selector lever to other positions.	OFF

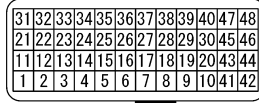
TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10A]

Item name	Condition	Display value (Approx.)
BRAKE SW	Depressed brake pedal	ON
	Released brake pedal	OFF
IDLE SW	Released accelerator pedal	ON
	Fully depressed accelerator pedal	OFF
INDDRNG	Selector lever in "D" position	ON
	When setting selector lever to other positions.	OFF
INDNRNG	Selector lever in "N" position	ON
	When setting selector lever to other positions.	OFF
INDRRNG	Selector lever in "R" position	ON
	When setting selector lever to other positions.	OFF
INDPRNG	Selector lever in "P" position	ON
	When setting selector lever to other positions.	OFF
SMCOIL D	During driving	Changes ON ⇔ OFF.
SMCOIL C	During driving	Changes ON ⇔ OFF.
SMCOIL B	During driving	Changes ON ⇔ OFF.
SMCOIL A	During driving	Changes ON ⇔ OFF.
LUSEL SOL OUT	Selector lever in "P", "N" positions	ON
	Wait at least for 5 seconds with the selector lever in "R", "D" position	OFF
LUSEL SOL MON	Selector lever in "P", "N" positions	ON
	Wait at least for 5 seconds with the selector lever in "R", "D" or position	OFF
ABS ON	ABS operate	ON
	Other conditions	OFF
RANGE	Selector lever in "N" or "P" position	N·P
	Selector lever in "R" position	R
	Selector lever in "D" position	D
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)	ON
	Other than the above	OFF
M GEAR POS	During driving	1, 2, 3, 4, 5, 6

TERMINAL LAYOUT



SCIA6679J

PHYSICAL VALUES

Terminal No.		Description		Condition		Value (Approx.)
+	-	Signal name	Input/Output			
1 (R)	Ground	R RANGE SW	Output	Ignition switch ON	Selector lever in “R” position	Battery voltage
					When setting selector lever to other positions	0 V
2 (P)	Ground	N RANGE SW	Output		Selector lever in “N” position	Battery voltage
					When setting selector lever to other positions	0 V
3 (Y)	Ground	D RANGE SW	Output		Selector lever in “D” positions	Battery voltage
					When setting selector lever to other positions	0 V
4 (SB)	Ground	L RANGE SW	Output		Selector lever in “L” position	Battery voltage
					When setting selector lever to other positions	0 V
5 (B)	Ground	Ground	Output	Always		0 V
7 (W)	Ground	Sensor ground	Input	Always		0 V
8 (G)	—	CLOCK	—	—		—
9 (V)	—	CHIP SELECT	—	—		—
10 (O)	—	DATA I/O	—	—		—
11 (V)	Ground	P RANGE SW	Output	Ignition switch ON	Selector lever in “P” position	Battery voltage
					When setting selector lever to other positions	0 V
13 (BR)	Ground	CVT fluid temperature sensor	Output	Ignition switch ON	When CVT fluid temperature is 20°C (68°F)	2.0 V
					When CVT fluid temperature is 80°C (176°F)	1.0 V
15 (L)	Ground	Secondary pressure sensor	Input	“N” position idle		1.0 V
25 (LG)	Ground	Sensor ground	Input	Always		0 V

TCM

< ECU DIAGNOSIS INFORMATION >

[CVT: RE0F10A]

Terminal No.		Description		Condition		Value (Approx.)
+	-	Signal name	Input/Output			
26 (O)	Ground	Sensor power	Input	Ignition switch ON	—	5.0 V
				Ignition switch OFF	—	0 V
27 (G)	Ground	Step motor D	Input	<div>Within 2 seconds after ignition switch ON, the time measurement by using the pulse width measurement function (Hi level) of CONSULT-III.*</div> <div>CAUTION: Connect the diagnosis data link cable to the vehicle diagnosis connector.</div>		10.0 msec
28 (W)	Ground	Step motor C	Input			30.0 msec
29 (BR)	Ground	Step motor B	Input			10.0 msec
30 (P)	Ground	Step motor A	Input			30.0 msec
31 (P)	—	CAN-L	Input/Output	—		—
32 (L)	—	CAN-H	Input/Output	—		—
33 (O)	Ground	Primary speed sensor	Input	When driving ["M1" position, 20 km/h (12 MPH)]		730 Hz
34 (V)	Ground	Secondary speed sensor	Input	When driving ["D" position, 20 km/h (12 MPH)]		480 Hz
37 (R)	Ground	Lock-up select solenoid valve	Output	Ignition switch ON	Selector lever in "P" or "N" positions	Battery voltage
					Wait at least for 5 seconds with the selector lever in "R" or "D" positions.	0 V
38 (SB)	Ground	Torque converter clutch solenoid valve	Output	When vehicle cruises in "D" position	When CVT performs lock-up	6.0 V
					When CVT does not perform lock-up	1.0 V
39 (Y)	Ground	Secondary pressure solenoid valve	Output	"P" or "N" position idle	Release your foot from the accelerator pedal.	5.0 – 7.0 V
					Press the accelerator pedal all the way down.	3.0 – 4.0 V
40 (GR)	Ground	Line pressure solenoid valve	Output		Release your foot from the accelerator pedal.	5.0 – 7.0 V
					Press the accelerator pedal all the way down.	1.0 – 3.0 V
42 (B)	Ground	Ground	Output	Always		0 V
46 (BR)	Ground	Power supply	Input	Ignition switch ON	—	Battery voltage
				Ignition switch OFF	—	0 V
47 (W)	Ground	Power supply (memory back-up)	Input	Always		Battery voltage
48 (BR)	Ground	Power supply	Input	Ignition switch ON	—	Battery voltage
				Ignition switch OFF	—	0 V

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

Fail-safe

INFOID:000000006390784

The TCM has an electrical fail-safe mode. This mode makes it possible to operate even if there is an error in a main electronic control input/output signal circuit.

FAIL-SAFE FUNCTION

If any malfunction occurs in a sensor or solenoid, this function controls the CVT to make driving possible.

Secondary Speed Sensor

The shift pattern is changed in accordance with throttle position when an unexpected signal is sent from the secondary speed sensor to the TCM. The manual mode position is inhibited, and the transaxle is put in "D".

Primary Speed Sensor

The shift pattern is changed in accordance with throttle position and secondary speed (vehicle speed) when an unexpected signal is sent from the primary speed sensor to the TCM. The manual mode position is inhibited, and the transaxle is put in "D".

Transmission Range Switch

If an unexpected signal is sent from the transmission range switch to the TCM, the transaxle is put in "D".

Manual Mode Switch

If an unexpected signal is sent from the manual mode switch to the TCM, the transaxle is put in "D".

CVT Fluid Temperature Sensor

If an unexpected signal is sent from the CVT fluid temperature sensor to the TCM, the gear ratio in use before receiving the unexpected signal is maintained or the gear ratio is controlled to keep engine speed under 3,400 rpm.

Secondary Pressure Sensor

- If an unexpected signal is sent from the secondary pressure sensor to the TCM, the secondary pressure feedback control is stopped and the offset value obtained before the non-standard condition occurs is used to control line pressure.
- If secondary pressure sensor error signal is input to TCM, secondary pressure feedback control stops, but line pressure is controlled normally.

Line Pressure Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the line pressure solenoid is turned OFF to achieve the maximum fluid pressure.

Secondary Pressure Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the secondary pressure solenoid is turned OFF to achieve the maximum fluid pressure.

Torque Converter Clutch Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the torque converter clutch solenoid is turned OFF to cancel the lock-up.

Step Motor

If an unexpected signal is sent from the step motor to the TCM, the step motor coil phases "A" through "D" are all turned OFF to hold the gear ratio used right before the non-standard condition occurred.

Lock-up Select Solenoid

If an unexpected signal is sent from the solenoid to the TCM, the lock-up select solenoid is turned OFF to cancel the lock-up.

TCM Power Supply (Memory Back-up)

Transaxle assembly is protected by limiting the engine torque when the memory back-up power supply (for controlling) from the battery is not supplied to TCM. Normal status is restored when turning the ignition switch OFF to ON after the normal power supply.

DTC Inspection Priority Chart

INFOID:000000006390785

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

NOTE:

If DTC "U1000" is displayed with other DTCs, first perform the trouble diagnosis for DTC "U1000". Refer to [TM-291](#).

Priority	Detected items (DTC)
1	U1000
2	Except above

DTC Index

NOTE:

If DTC “U1000” is displayed with other DTCs, first perform the trouble diagnosis for DTC “U1000”. Refer to [TM-291](#).

DTC	Items (CONSULT-III screen terms)	Reference page
Except OBD-II		
CONSULT-III only “TRANSMISSION”		
P0703	BRAKE SWITCH B	TM-293
P0705	T/M RANGE SENSOR A	TM-296
P0710	FLUID TEMP SENSOR A	TM-299
P0715	INPUT SPEED SENSOR A	TM-302
P0720	OUTPUT SPEED SENSOR	TM-306
P0725	ENGINE SPEED	TM-310
P0730	INCORRECT GR RATIO	TM-311
P0740	TORQUE CONVERTER	TM-312
P0744	TORQUE CONVERTER	TM-314
P0745	PC SOLENOID A	TM-316
P0746	PC SOLENOID A	TM-318
P0776	PC SOLENOID B	TM-320
P0778	PC SOLENOID B	TM-322
P0826	UP/DOWN SHIFT SWITCH	TM-324
P0840	FLUID PRESS SEN/SW A	TM-327
P0841	FLUID PRESS SEN/SW A	TM-330
P0868	FLUID PRESS LOW	TM-332
P1701	TCM	TM-334
P1705	TP SENSOR	TM-337
P1722* ¹	VEHICLE SPEED	TM-338
P1723	SPEED SENSOR	TM-340
P1726	THROTTLE CONTROL SIG	TM-342
P1740	SLCT SOLENOID	TM-343
P1745	LINE PRESS CONTROL	TM-345
P1777	STEP MOTOR	TM-346
P1778	STEP MOTOR	TM-349
U1000	CAN COMM CIRCUIT	TM-291
U1010	CONTROL UNIT (CAN)	TM-292

*¹: Models without ABS does not indicate.

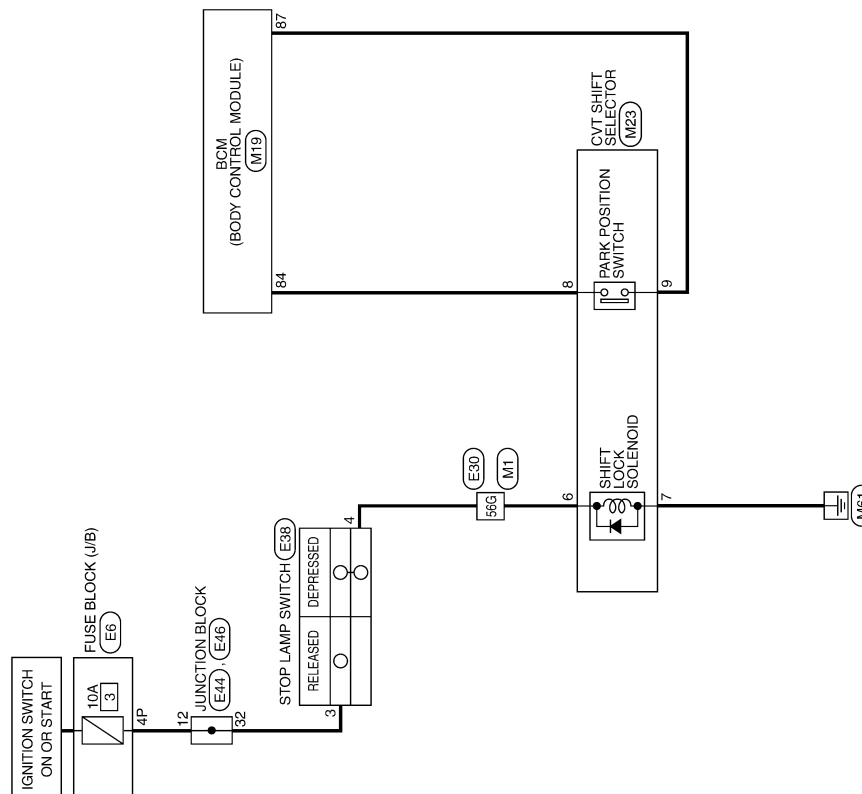
WIRING DIAGRAM

CVT SHIFT LOCK SYSTEM – QR25DE

Wiring Diagram

INFOID:000000006390787

CVT SHIFT LOCK SYSTEM - QR25DE



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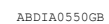
[CVT: RE0F10A]

Terminal No.	Color of Wire	Signal Name
6	R/W	S/LOCK_SOL_INPUT
7	B	S/LOCK_SOL_GND
8	Y/R	DETENT_KEY_SW
9	G/B	DETENT_KEY_SW

2011 Altima GCC

A	
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[CVT: RE0F10A]



CVT CONTROL SYSTEM – QR25DE

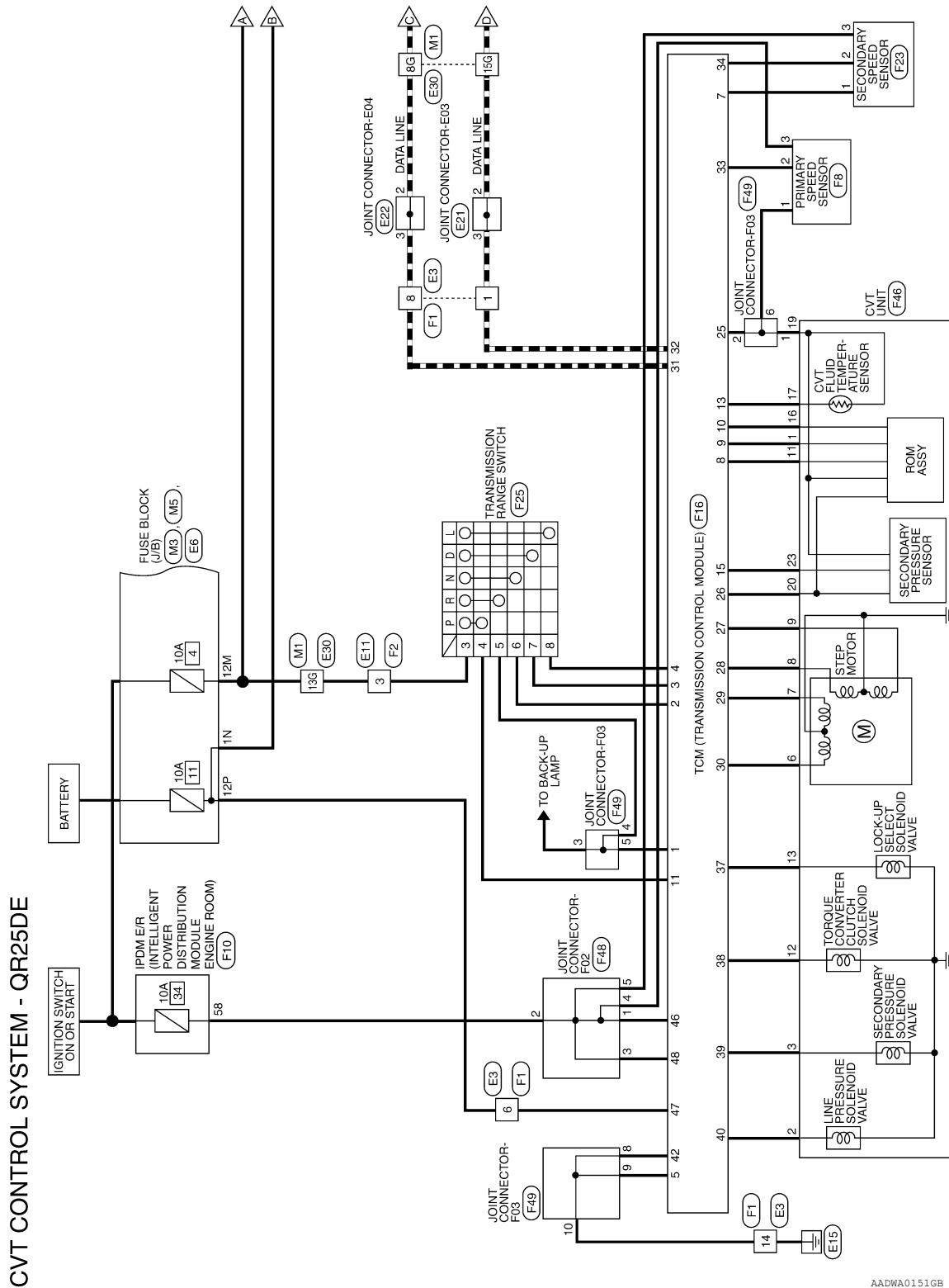
< WIRING DIAGRAM >

[CVT: RE0F10A]

CVT CONTROL SYSTEM – QR25DE

Wiring Diagram

INFOID:000000006390788

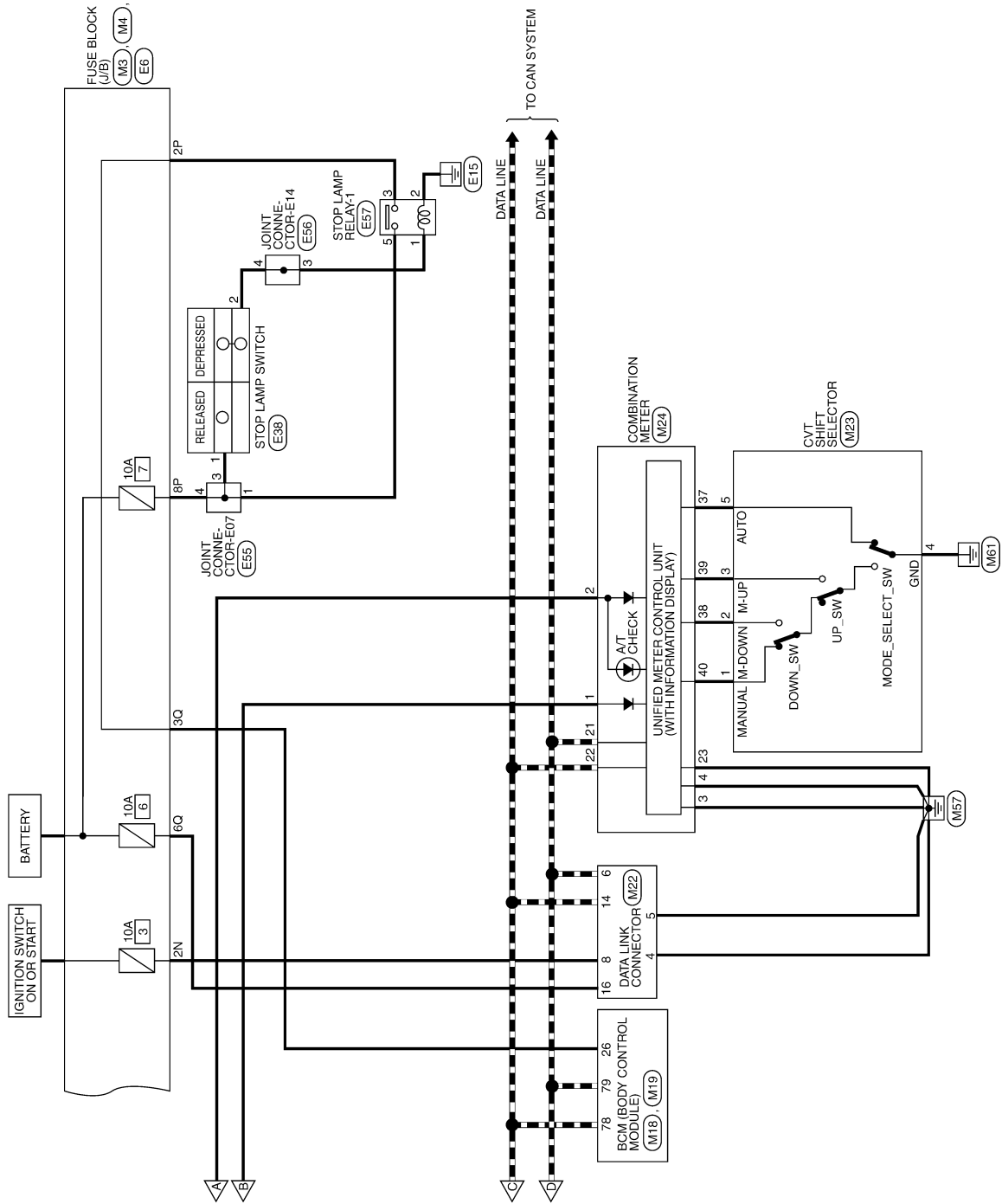


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CVT CONTROL SYSTEM – QR25DE

< WIRING DIAGRAM >

[CVT: RE0F10A]



ABDWA0597GB

[CVT: RE0F10A]

2011 Altima GCC

A
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H
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CVT CONTROL SYSTEM – QR25DE

< WIRING DIAGRAM >

[CVT: RE0F10A]

Connector No.	M23
Connector Name	CVT SHIFT SELECTOR
Connector Color	WHITE

1	3	□		7	9
2	4	5	6	8	10



Terminal No.	Color of Wire	Signal Name
1	LG/R	MT_MODE
2	BR	M_DOWN
3	W	M_UP
4	B	GND
5	G	AT_MODE

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

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



Terminal No.	Color of Wire	Signal Name
4	B	GND
5	B	GND
6	L	CAN-H
8	G	IGN_SW
14	P	CAN-L
16	Y/R	BATT

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



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

Terminal No.	Color of Wire	Signal Name
78	P	CAN-L
79	L	CAN-H

Connector No.	E3
Connector Name	WIRE TO WIRE
Connector Color	WHITE

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



Terminal No.	Color of Wire	Signal Name
1	L	–
6	V	–
8	P	–
14	B	–

Terminal No.	Color of Wire	Signal Name
1	W/L	BAT
2	O	IGN
3	B	GND
4	B	GND
21	L	CAN-H
22	P	CAN-L
23	B	GND
37	G	NOT M RANGE
38	BR	AT SHIFT DOWN
39	W	AT SHIFT UP
40	LG/R	M RANGE

Connector No.	M24
Connector Name	COMBINATION METER
Connector Color	WHITE



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

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CVT CONTROL SYSTEM – QR25DE

< WIRING DIAGRAM >

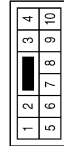
[CVT: RE0F10A]

Connector No.	E21
Connector Name	JOINT CONNECTOR-E03
Connector Color	WHITE



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

Connector No.	E11
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
3	BR	-

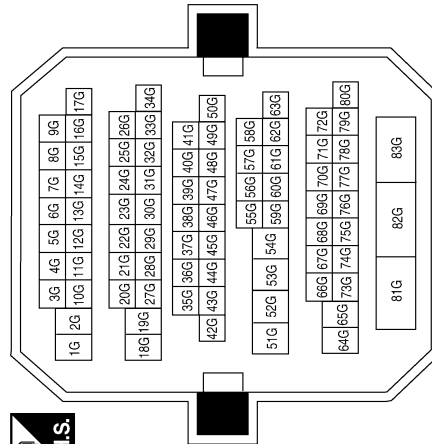
Connector No.	E6
Connector Name	FUSE BLOCK (J/B)
Connector Color	WHITE



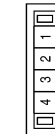
Terminal No.	Color of Wire	Signal Name
2P	Y	-
8P	R	-
12P	V	-

Terminal No.	Color of Wire	Signal Name
8G	P	-
13G	BR	-
15G	L	-

Connector No.	E30
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	E22
Connector Name	JOINT CONNECTOR-E04
Connector Color	WHITE



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

AADIA0229GB

CVT CONTROL SYSTEM – QR25DE

< WIRING DIAGRAM >

[CVT: RE0F10A]

Connector No.	E56
Connector Name	JOINT CONNECTOR-E14
Connector Color	WHITE



4	3	2	1
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Terminal No.	Color of Wire	Signal Name
3	LG	–
4	LG	–

Connector No.	E55
Connector Name	JOINT CONNECTOR-E07
Connector Color	WHITE



4	3	2	1
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Terminal No.	Color of Wire	Signal Name
1	W	–
3	R	–
4	R	–

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



3	4
1	2

Terminal No.	Color of Wire	Signal Name
1	R	–
2	LG	–

Connector No.	F2
Connector Name	WIRE TO WIRE
Connector Color	WHITE



4	3	2	1
10	9	8	7
6	5		

Connector No.	F1
Connector Name	WIRE TO WIRE
Connector Color	WHITE



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

Connector No.	E57
Connector Name	STOP LAMP RELAY-1
Connector Color	BLUE



3	5
2	1

Terminal No.	Color of Wire	Signal Name
3	O	–

Terminal No.	Color of Wire	Signal Name
1	L	–
6	W	–
8	P	–
14	B	–

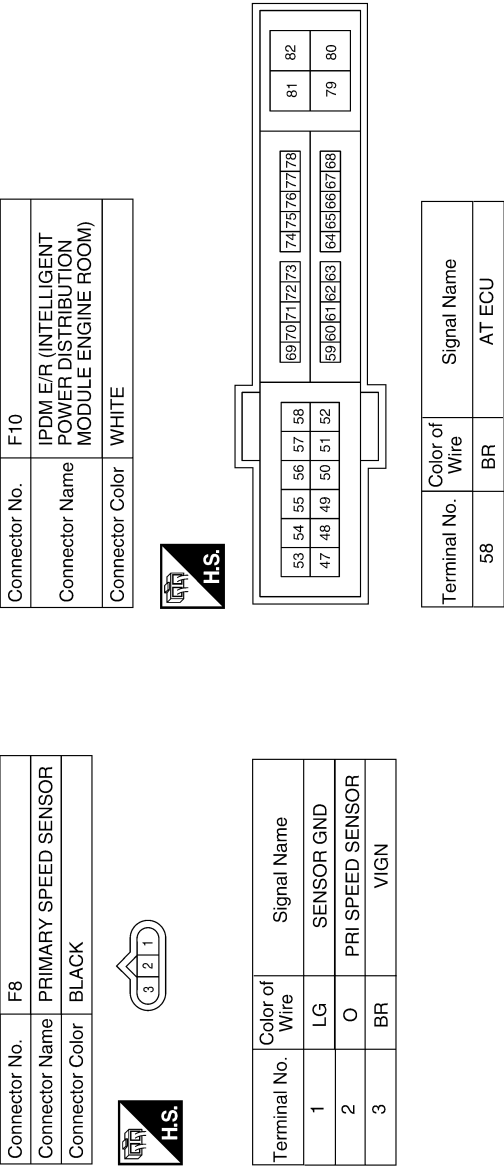
Terminal No.	Color of Wire	Signal Name
1	LG	–
2	B	–
3	Y	–
5	W	–

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CVT CONTROL SYSTEM – QR25DE

< WIRING DIAGRAM >

[CVT: RE0F10A]



AADIA0231GB

A
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O
P

CVT CONTROL SYSTEM – QR25DE

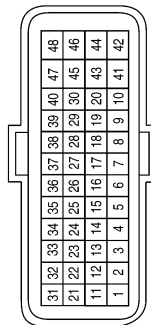
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[CVT: RE0F10A]

Terminal No.	Color of Wire	Signal Name
25	LG	SENSOR GND
26	O	SENS POWER SOURCE
27	G	S/M-D
28	W	S/M-C
29	BR	S/M-B
30	P	S/M-A
31	P	CAN-L
32	L	CAN-H
33	O	PRI SPEED SENSOR
34	V	SEC SPEED SENSOR
35	–	–
36	–	–
37	R	L/U&SELECT-ON/OFF SOL
38	SB	L/U&SELECT-LINEAR SOL
39	Y	SEC LINEAR SOL
40	GR	PL LINEAR SOL
41	–	–
42	B	GND
43	–	–
44	–	–
45	–	–
46	BR	VIGN
47	W	BATT
48	BR	VIGN

Terminal No.	Color of Wire	Signal Name
1	R	R RANGE SW
2	P	N RANGE SW
3	Y	D RANGE SW
4	SB	L RANGE SW
5	B	GND
6	–	–
7	W	SENSOR GND
8	G	CLOCK (SEL2)
9	V	CHIP SELECT (SEL1)
10	O	DATA I/O (SEL3)
11	V	P RANGE SW
12	–	–
13	BR	ATF TEMP SENS
14	–	–
15	L	SEC OIL PRESS SENS
16	–	–
17	–	–
18	–	–
19	–	–
20	–	–
21	–	–
22	–	–
23	–	–
24	–	–

Connector No.	F16
Connector Name	TCM (TRANSMISSION CONTROL MODULE)
Connector Color	BLACK



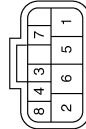
AADIA0232GB

CVT CONTROL SYSTEM – QR25DE

< WIRING DIAGRAM >

[CVT: RE0F10A]

Connector No.	F25
Connector Name	TRANSMISSION RANGE SWITCH
Connector Color	BLACK



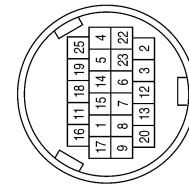
Terminal No.	Color of Wire	Signal Name
3	O	IGN
4	V	P OUTPUT
5	R	R OUTPUT
6	P	N OUTPUT
7	Y	D OUTPUT
8	SB	L OUTPUT

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



Terminal No.	Color of Wire	Signal Name
1	W	SENSOR GND
2	V	SEC SPEED SENSOR
3	BR	VIGN

Connector No.	F46
Connector Name	CVT UNIT
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	V	CHIP SELECT
2	GR	PL LINEAR SOL
3	Y	SEC LINEAR SOL

Terminal No.	Color of Wire	Signal Name
4	-	-
5	-	-
6	P	S/M-COIL A
7	BR	S/M-COIL B
8	W	S/M-COIL C
9	G	S/M-COIL D
11	G	CLOCK
12	SB	L&U SELECT-LINEAR SOL
13	R	L&U SELECT-ON/OFF SOL
14	-	-
15	-	-
16	O	DATA I/O
17	BR	ATF TEMP SENSOR
18	-	-
19	LG	SENSOR_GND

Terminal No.	Color of Wire	Signal Name
20	O	SENSOR POWER SOURCE
22	-	-
23	L	SEC OIL PRESSURE SENSOR
25	-	-

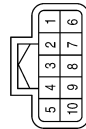
AADIA0233GB

CVT CONTROL SYSTEM – QR25DE

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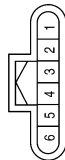
[CVT: RE0F10A]

Connector No.	F49
Connector Name	JOINT CONNECTOR-F03
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
1	LG	-
2	LG	-
3	R	-
4	R	-
5	R	-
6	LG	-
8	B	-
9	B	-
10	B	-

Connector No.	F48
Connector Name	JOINT CONNECTOR-F02
Connector Color	BLACK



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

AADIA0234GB

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

SYMPTOM DIAGNOSIS

SYSTEM SYMPTOM

Symptom Table

INFOID:000000006390789

The diagnostics item numbers show the sequence for inspection. Inspect in order from item 1.

No.	Item	Symptom	Condition	Diagnostic Item	Reference
1	Shift Shock	Large shock. ("N"→ "D" position)	ON vehicle	1. Engine idle speed	EC-18
				2. Engine speed signal	TM-310
				3. Accelerator pedal position sensor	TM-337
				4. CVT position	TM-402
				5. CVT fluid temperature sensor	TM-299
				6. CAN communication line	TM-291
				7. CVT fluid level and state	TM-389
				8. Line pressure test	TM-396
				9. Torque converter clutch solenoid valve	TM-312
				10. Lock-up select solenoid valve	TM-343
				11. Transmission range switch	TM-296
			OFF vehicle	12. Forward clutch	TM-414
				13. Control valve	
2	Shift Shock	Large shock. ("N"→ "R" position)	ON vehicle	1. Engine idle speed	EC-18
				2. Engine speed signal	TM-310
				3. Accelerator pedal position sensor	TM-337
				4. CVT position	TM-402
				5. CVT fluid temperature sensor	TM-299
				6. CAN communication line	TM-291
				7. CVT fluid level and state	TM-389
				8. Line pressure test	TM-396
				9. Torque converter clutch solenoid valve	TM-312
				10. Lock-up select solenoid valve	TM-343
				11. Transmission range switch	TM-296
			OFF vehicle	12. Reverse brake	TM-414
				13. Control valve	
3	Shift Shock	Shock is too large for lock-up.	ON vehicle	1. CVT position	TM-402
				2. Engine speed signal	TM-310
				3. CAN communication line	TM-291
				4. CVT fluid level and state	TM-389
			OFF vehicle	5. Torque converter	TM-414
				6. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
4	Slips/Will Not Engage	Vehicle cannot be started from "D" position.	ON vehicle	1. CVT fluid level and state	TM-389
				2. CVT position	TM-402
				3. CAN communication line	TM-291
				4. Line pressure test	TM-396
				5. Stall test	TM-394
				6. Step motor	TM-346
				7. Primary speed sensor	TM-302
				8. Secondary speed sensor	TM-306
				9. Accelerator pedal position sensor	TM-337
				10. CVT fluid temperature sensor	TM-299
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Oil pump assembly	TM-414
				14. Forward clutch	
				15. Control valve	
				16. Parking components	
5	Slips/Will Not Engage	Vehicle cannot be started from "R" position.	ON vehicle	1. CVT fluid level and state	TM-389
				2. CVT position	TM-402
				3. CAN communication line	TM-291
				4. Line pressure test	TM-396
				5. Stall test	TM-394
				6. Step motor	TM-346
				7. Primary speed sensor	TM-302
				8. Secondary speed sensor	TM-306
				9. Accelerator pedal position sensor	TM-337
				10. CVT fluid temperature sensor	TM-299
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Oil pump assembly	TM-414
				14. Reverse brake	
				15. Control valve	
				16. Parking components	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
6	Does not lock-up.		ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Engine speed signal	TM-310
				4. Primary speed sensor	TM-302
				5. Torque converter clutch solenoid valve	TM-312
				6. CAN communication line	TM-291
				7. Stall test	TM-394
				8. Step motor	TM-346
				9. Transmission range switch	TM-296
				10. Lock-up select solenoid valve	TM-343
				11. CVT fluid temperature sensor	TM-299
				12. Secondary speed sensor	TM-306
				13. Secondary pressure sensor	TM-165
	Slips/Will Not Engage		OFF vehicle	14. Torque converter	TM-414
				15. Oil pump assembly	
				16. Control valve	
7	Does not hold lock-up condition.		ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Engine speed signal	TM-310
				4. Primary speed sensor	TM-302
				5. Torque converter clutch solenoid valve	TM-312
				6. CAN communication line	TM-291
				7. Stall test	TM-394
				8. Step motor	TM-346
				9. Transmission range switch	TM-296
				10. Lock-up select solenoid valve	TM-343
				11. CVT fluid temperature sensor	TM-299
				12. Secondary speed sensor	TM-306
				13. Secondary pressure sensor	TM-165
			OFF vehicle	14. Torque converter	TM-414
				15. Oil pump assembly	
				16. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
8		Lock-up is not released.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Engine speed signal	TM-310
				4. Primary speed sensor	TM-302
				5. Torque converter clutch solenoid valve	TM-312
				6. CAN communication line	TM-291
				7. Stall test	TM-394
			OFF vehicle	8. Torque converter	TM-414
				9. Oil pump assembly	
				10. Control valve	
9	Slips/Will Not Engage	With selector lever in "D" position, acceleration is extremely poor.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Stall test	TM-394
				4. Accelerator pedal position sensor	TM-337
				5. CAN communication line	TM-291
				6. Transmission range switch	TM-296
				7. CVT position	TM-402
				8. Step motor	TM-346
				9. Primary speed sensor	TM-302
				10. Secondary speed sensor	TM-306
				11. Accelerator pedal position sensor	TM-337
				12. Secondary pressure sensor	TM-165
				13. CVT fluid temperature sensor	TM-299
				14. Power supply	TM-172
			OFF vehicle	15. Torque converter	TM-414
				16. Oil pump assembly	
				17. Forward clutch	
				18. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
10	Slips/Will Not Engage	With selector lever in "R" position, acceleration is extremely poor.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Stall test	TM-394
				4. Accelerator pedal position sensor	TM-337
				5. CAN communication line	TM-291
				6. Transmission range switch	TM-296
				7. CVT position	TM-402
				8. Step motor	TM-346
				9. Primary speed sensor	TM-302
				10. Secondary speed sensor	TM-306
				11. Accelerator pedal position sensor	TM-337
				12. Secondary pressure sensor	TM-165
				13. CVT fluid temperature sensor	TM-299
				14. Power supply	TM-172
			OFF vehicle	15. Torque converter	TM-414
				16. Oil pump assembly	
				17. Reverse brake	
				18. Control valve	
11		Slips at lock-up.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Engine speed signal	TM-310
				4. Primary speed sensor	TM-302
				5. Torque converter clutch solenoid valve	TM-312
				6. CAN communication line	TM-291
				7. Stall test	TM-394
				8. Step motor	TM-346
				9. Transmission range switch	TM-296
				10. Lock-up select solenoid valve	TM-343
				11. CVT fluid temperature sensor	TM-299
				12. Secondary speed sensor	TM-306
				13. Secondary pressure sensor	TM-165
			OFF vehicle	14. Torque converter	TM-414
				15. Oil pump assembly	
				16. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
12	Other	No creep at all.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Accelerator pedal position sensor	TM-337
				4. Transmission range switch	TM-296
				5. CAN communication line	TM-291
				6. Stall test	TM-394
				7. CVT position	TM-402
				8. Step motor	TM-346
				9. Primary speed sensor	TM-302
				10. Secondary speed sensor	TM-306
				11. Accelerator pedal position sensor	TM-337
				12. CVT fluid temperature sensor	TM-299
				13. Secondary pressure sensor	TM-165
				14. Power supply	TM-172
			OFF vehicle	15. Torque converter	TM-414
				16. Oil pump assembly	
				17. Gear system	
				18. Forward clutch	
				19. Reverse brake	
				20. Control valve	
13		Vehicle cannot run in all positions.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Transmission range switch	TM-296
				4. Stall test	TM-394
				5. CVT position	TM-402
				6. Step motor	TM-346
				7. Primary speed sensor	TM-302
				8. Secondary speed sensor	TM-306
				9. Accelerator pedal position sensor	TM-337
				10. CVT fluid temperature sensor	TM-299
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Torque converter	TM-414
				14. Oil pump assembly	
				15. Gear system	
				16. Forward clutch	
				17. Reverse brake	
				18. Control valve	
				19. Parking components	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
14	Other	With selector lever in "D" position, driving is not possible.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Transmission range switch	TM-296
				4. Stall test	TM-394
				5. CVT position	TM-402
				6. Step motor	TM-346
				7. Primary speed sensor	TM-302
				8. Secondary speed sensor	TM-306
				9. Accelerator pedal position sensor	TM-337
				10. CVT fluid temperature sensor	TM-299
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Torque converter	TM-414
				14. Oil pump assembly	
				15. Gear system	
				16. Forward clutch	
				17. Control valve	
				18. Parking components	
15	Other	With selector lever in "R" position, driving is not possible.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Transmission range switch	TM-296
				4. Stall test	TM-394
				5. CVT position	TM-402
				6. Step motor	TM-346
				7. Primary speed sensor	TM-302
				8. Secondary speed sensor	TM-306
				9. Accelerator pedal position sensor	TM-337
				10. CVT fluid temperature sensor	TM-299
				11. Secondary pressure sensor	TM-165
				12. Power supply	TM-172
			OFF vehicle	13. Torque converter	TM-414
				14. Oil pump assembly	
				15. Gear system	
				16. Reverse brake	
				17. Control valve	
				18. Parking components	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
16	Other	Judder occurs during lock-up.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Engine speed signal	TM-310
				3. Primary speed sensor	TM-302
				4. Secondary speed sensor	TM-306
				5. Accelerator pedal position sensor	TM-337
				6. CAN communication line	TM-291
				7. Torque converter clutch solenoid valve	TM-312
			OFF vehicle	8. Torque converter	TM-414
				9. Control valve	
17	Other	Strange noise in "D" position.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Engine speed signal	TM-310
				3. CAN communication line	TM-291
			OFF vehicle	4. Torque converter	TM-414
				5. Oil pump assembly	
				6. Gear system	
				7. Forward clutch	
				8. Control valve	
				9. Bearing	
18	Other	Strange noise in "R" position.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Engine speed signal	TM-310
				3. CAN communication line	TM-291
			OFF vehicle	4. Torque converter	TM-414
				5. Oil pump assembly	
				6. Gear system	
				7. Reverse brake	
				8. Control valve	
19	Other	Strange noise in "N" position.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Engine speed signal	TM-310
				3. CAN communication line	TM-291
			OFF vehicle	4. Torque converter	TM-414
				5. Oil pump assembly	
				6. Gear system	
				7. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
20		Vehicle does not decelerate by engine brake.	ON vehicle	1. CVT fluid level and state	TM-389
				2. CVT position	TM-402
				3. CAN communication line	TM-291
				4. Step motor	TM-346
				5. Primary speed sensor	TM-302
				6. Secondary speed sensor	TM-306
				7. Line pressure test	TM-396
				8. Engine speed signal	TM-310
				9. Accelerator pedal position sensor	TM-337
			OFF vehicle	10. Control valve	TM-414
21	Other	Maximum speed low.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Line pressure test	TM-396
				3. Accelerator pedal position sensor	TM-337
				4. CAN communication line	TM-291
				5. Stall test	TM-394
				6. Step motor	TM-346
				7. Primary speed sensor	TM-302
				8. Secondary speed sensor	TM-306
				9. Secondary pressure sensor	TM-165
				10. CVT fluid temperature sensor	TM-299
			OFF vehicle	11. Torque converter	TM-414
				12. Oil pump assembly	
				13. Gear system	
				14. Forward clutch	
				15. Control valve	
22		With selector lever in "P" position, vehicle does not enter parking condition or, with selector lever in another position, parking condition is not cancelled.	ON vehicle	1. Transmission range switch	TM-296
				2. CVT position	TM-402
			OFF vehicle	3. Parking components	TM-414
23		Vehicle runs with CVT in "P" position.	ON vehicle	1. Transmission range switch	TM-296
				2. CVT fluid level and state	TM-389
				3. CVT position	TM-402
			OFF vehicle	4. Parking components	TM-414
				5. Gear system	
				6. Control valve	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
24		Vehicle runs with CVT in "N" position.	ON vehicle	1. Transmission range switch	TM-296
				2. CVT fluid level and state	TM-389
				3. CVT position	TM-402
			OFF vehicle	4. Gear system	TM-414
				5. Forward clutch	
				6. Reverse brake	
				7. Control valve	
25		Engine stall.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Engine speed signal	TM-310
				3. Primary speed sensor	TM-302
				4. Torque converter clutch solenoid valve	TM-312
				5. CAN communication line	TM-291
				6. Stall test	TM-394
				7. Secondary pressure sensor	TM-165
			OFF vehicle	8. Torque converter	TM-414
				9. Control valve	
26	Other	Engine stalls when selector lever shifted "N" → "D" or "R".	ON vehicle	1. CVT fluid level and state	TM-389
				2. Engine speed signal	TM-310
				3. Primary speed sensor	TM-302
				4. Torque converter clutch solenoid valve	TM-312
				5. CAN communication line	TM-291
				6. Stall test	TM-394
			OFF vehicle	7. Torque converter	TM-414
				8. Control valve	
27		Engine speed does not return to idle.	ON vehicle	1. CVT fluid level and state	TM-389
				2. Accelerator pedal position sensor	TM-337
				3. Secondary speed sensor	TM-306
				4. CAN communication line	TM-291
			OFF vehicle	5. Control valve	TM-414
28		CVT does not shift	ON vehicle	1. CVT fluid level and state	TM-389
				2. CVT position	TM-402
				3. Line pressure test	TM-396
				4. Engine speed signal	TM-310
				5. Accelerator pedal position sensor	TM-337
				6. CAN communication line	TM-291
				7. Primary speed sensor	TM-302
				8. Secondary speed sensor	TM-306
				9. Step motor	TM-346
			OFF vehicle	10. Control valve	TM-414
				11. Oil pump assembly	

SYSTEM SYMPTOM

< SYMPTOM DIAGNOSIS >

[CVT: RE0F10A]

No.	Item	Symptom	Condition	Diagnostic Item	Reference
29	Other	Engine does not start in “N” or “P” position.	ON vehicle	1. Ignition switch and starter	PG-85, STR-9
				2. CVT position	TM-402
				3. Transmisson range switch	TM-296
30		Engine starts in posi- tions other than “N” or “P”.	ON vehicle	1. Ignition switch and starter	PG-85, STR-9
				2. CVT position	TM-402
				3. Transmisson range switch	TM-296

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PRECAUTION

PRECAUTIONS

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

INFOID:000000006390790

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

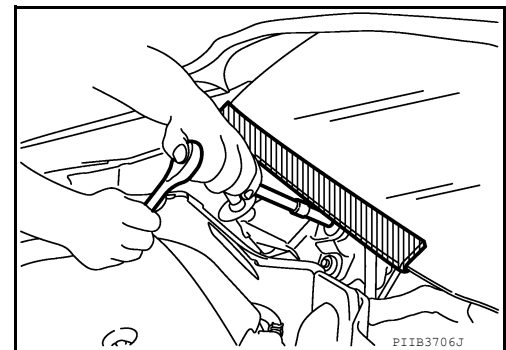
WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery and wait at least 3 minutes before performing any service.

Precaution for Procedure without Cowl Top Cover

INFOID:000000006390791

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



Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000006390792

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NVIS/IVIS (NISSAN/INFINITI VEHICLE IMMOBILIZER SYSTEM - NATS).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NVIS/IVIS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

PRECAUTIONS

< PRECAUTION >

[CVT: RE0F10A]

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.
5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

Precaution for TCM and Transaxle Assembly Replacement

INFOID:000000006390793

CAUTION:

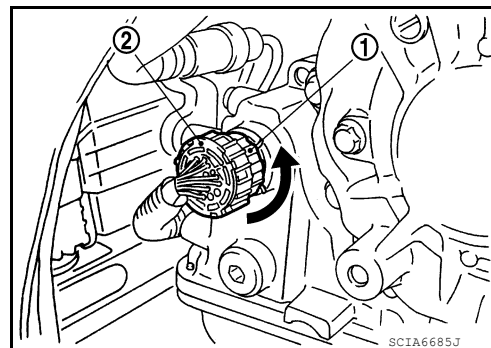
To replace TCM and transaxle assembly, refer to **TM-255, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly"**.

Removal and Installation Procedure for CVT Unit Connector

INFOID:000000006390794

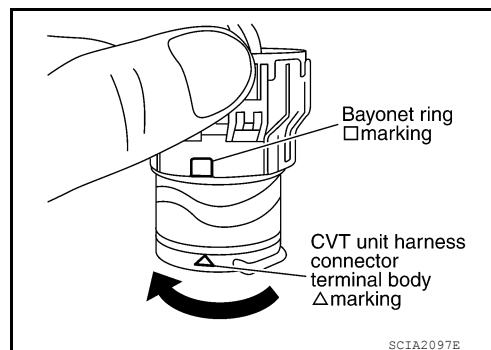
REMOVAL

Rotate bayonet ring (1) counterclockwise, pull out CVT unit harness connector (2) and remove it.



INSTALLATION

1. Align Δ marking on CVT unit harness connector terminal body with \square marking on bayonet ring, insert CVT unit harness connector, and then rotate bayonet ring clockwise.

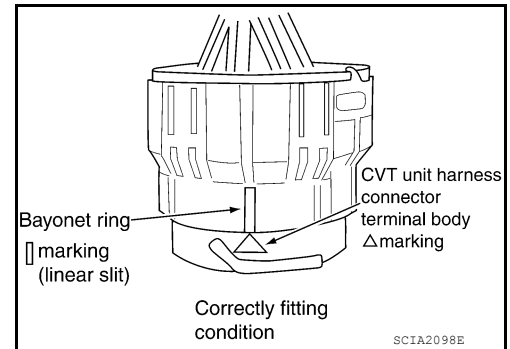


PRECAUTIONS

< PRECAUTION >

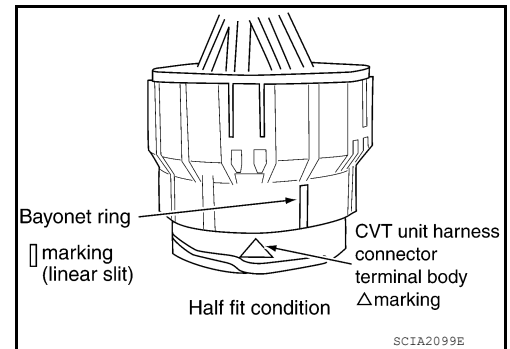
[CVT: RE0F10A]

2. Rotate bayonet ring clockwise until Δ marking on CVT unit harness connector terminal body is aligned with the slit on bayonet ring as shown in the figure (correctly fitting condition), install CVT unit harness connector to CVT unit harness connector terminal body.



CAUTION:

- Securely align Δ marking on CVT unit harness connector terminal body with bayonet ring slit. Then, be careful not to make a half fit condition as shown in the figure.
- Do not mistake the slit of bayonet ring for other dent portion.



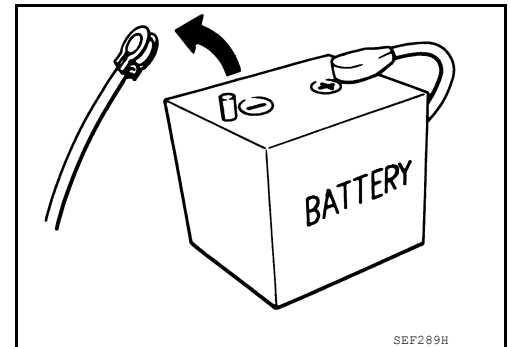
Precaution

INFOID:000000006390795

NOTE:

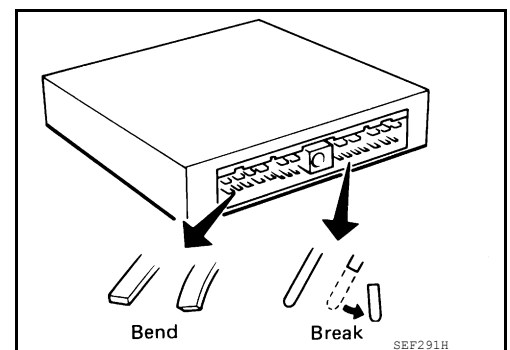
If any malfunction occurs in the RE0F10A model transaxle, replace the entire transaxle assembly.

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



- When connecting or disconnecting pin connectors into or from TCM, take care not to damage pin terminals (bend or break).

When connecting pin connectors make sure that there are not any bends or breaks on TCM pin terminal.

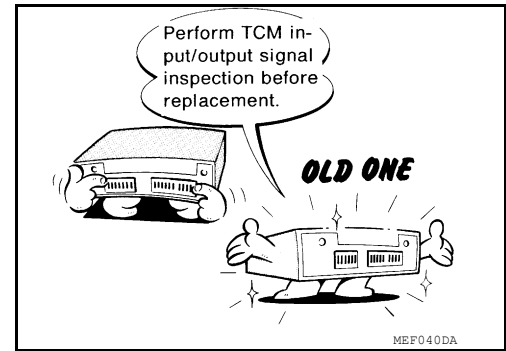


PRECAUTIONS

< PRECAUTION >

[CVT: RE0F10A]

- Before replacing TCM, perform TCM input/output signal inspection and make sure whether TCM functions properly or not. [TM-354, "Reference Value"](#).



- After performing each TROUBLE DIAGNOSIS, perform "DTC Confirmation Procedure".
- If the repair is completed the DTC should not be displayed in the "DTC Confirmation Procedure".
- Always use the specified brand of CVT fluid. Refer to [MA-12, "Fluids and Lubricants"](#).
- Use lint-free paper, not cloth rags, during work.
- After replacing the CVT fluid, dispose of the waste oil using the methods prescribed by law, ordinance, etc.

Service Notice or Precaution

INFOID:000000006390796

CVT FLUID COOLER SERVICE

If CVT fluid contains friction material (clutches, brakes, etc.), or if a CVT is replaced, inspect and clean the CVT fluid cooler mounted in the radiator or replace the radiator. Flush cooler lines using cleaning solvent and compressed air after repair. For CVT fluid cooler cleaning procedure, refer to [TM-391, "Cleaning"](#). For radiator replacement, refer to [CO-15, "Removal and Installation"](#).

ATFTEMP COUNT Conversion Table

INFOID:000000006390797

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

PREPARATION

< PREPARATION >

[CVT: RE0F10A]

PREPARATION

PREPARATION

Special Service Tool


INFOID:000000006390798

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

Tool number (Kent-Moore No.) Tool name	Description
<p>— (OTC3492) Oil pressure gauge set</p>  <p>SCIA7531E</p>	Measuring line pressure

Commercial Service Tool

INFOID:000000006390799

Tool number Tool name	Description
<p>Power tool</p>  <p>PIIB1407E</p>	Loosening nuts, screws and bolts

PERIODIC MAINTENANCE

CVT FLUID

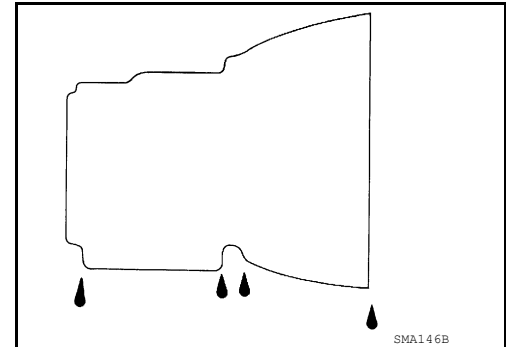
Inspection

INFOID:000000006390800

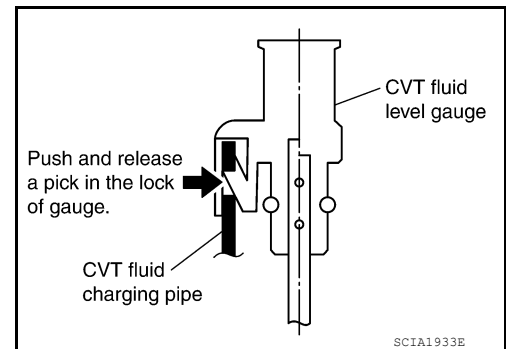
CHECKING CVT FLUID

Fluid level should be checked with the fluid warmed up to 50° to 80°C (122° to 176°F). The fluid level check procedure is as follows:

1. Check for fluid leakage.
2. With the engine warmed up, drive the vehicle in an urban area. When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50° to 80°C (122° to 176°F).
3. Park the vehicle on a level surface.
4. Apply parking brake firmly.
5. With engine at idle, while depressing brake pedal, move shift selector throughout the entire shift range.



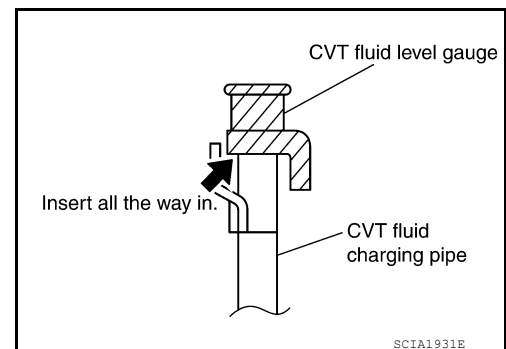
6. Pull out the CVT fluid level gauge from the CVT fluid charging pipe after pressing the tab on the CVT fluid level gauge to release the lock.



7. Wipe fluid off the CVT fluid level gauge. Insert the CVT fluid level gauge rotating 180° from the originally installed position, then securely push the CVT fluid level gauge until it meets the top end of the CVT fluid charging pipe.

CAUTION:

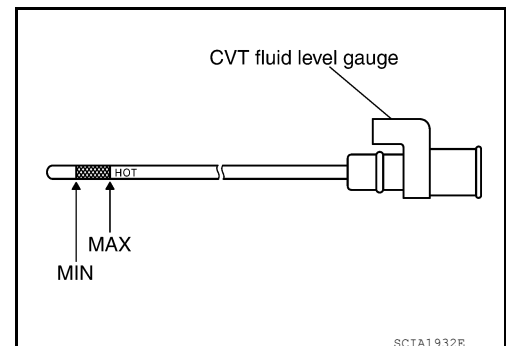
When wiping away the CVT fluid level gauge, always use lint-free paper, not a cloth rag.



8. Place the selector lever in "P" or "N" and make sure the fluid level is within the specified range.

CAUTION:

When reinstalling CVT fluid level gauge, insert it into the CVT fluid charging pipe and rotate it to the original installation position until it is securely locked.



CVT FLUID CONDITION

CVT FLUID

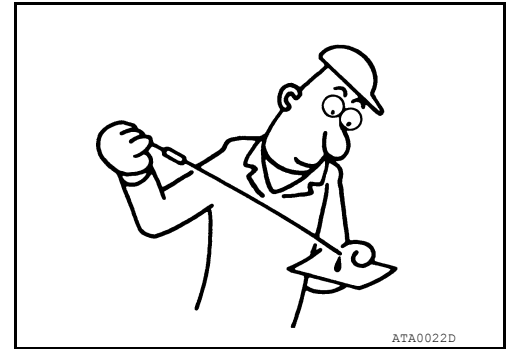
< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

Check CVT fluid condition.

- If CVT fluid is very dark or smells burned, check operation of CVT. Flush cooling system after repair of CVT.
- If CVT fluid contains frictional material (clutches, brakes, etc.), replace radiator and flush cooler line using cleaning solvent and compressed air after repair of CVT. Refer to [CO-15. "Removal and Installation"](#) and [TM-391. "Cleaning"](#).

Fluid status	Conceivable cause	Required operation
Varnished (viscous varnish state)	CVT fluid become degraded due to high temperatures.	Replace the CVT fluid and check the CVT main unit and the vehicle for malfunctions (wire harnesses, cooler pipes, etc.)
Milky white or cloudy	Water in the fluid	Replace the CVT fluid and check for places where water is getting in.
Large amount of metal powder mixed in	Unusual wear of sliding parts within CVT	Replace the CVT fluid and check for improper operation of the CVT.



ATA0022D

Changing

INFOID:000000006390801

1. Remove drain plug, and then drain CVT fluid from oil pan.
2. Install drain plug to oil pan.

CAUTION:

Do not reuse drain plug gasket.

Drain plug torque 34.3 N·m (3.5 kg-m, 25 ft-lb)

3. Fill CVT fluid from CVT fluid charging pipe to the specified level.
4. With the engine warmed up, drive the vehicle in an urban area. When ambient temperature is 20°C (68°F), it takes about 10 minutes for the CVT fluid to warm up to 50° to 80°C (122° to 176°F).
5. Check CVT fluid level and condition.
6. Repeat steps 1 to 5 if CVT fluid has been contaminated.

CVT fluid:

Genuine NISSAN CVT Fluid NS-2

Fluid capacity:

Approx. 7.3 ℓ (7-3/4 US qt, 6-3/4 Imp qt)

CAUTION:

- Use only Genuine NISSAN CVT Fluid NS-2. Do not mix with other fluid.
- Using CVT fluid other than Genuine NISSAN CVT Fluid NS-2 will deteriorate in driveability and CVT durability, and may damage the CVT, which is not covered by the warranty.
- When filling CVT fluid, take care not to scatter heat generating parts such as exhaust.
- Sufficiently shake the container of CVT fluid before using.
- Delete CVT fluid deterioration date with CONSULT-III after changing CVT fluid.

CVT FLUID COOLER SYSTEM

Cleaning

INFOID:000000006390802

Whenever an automatic transaxle is repaired, overhauled, or replaced, the CVT fluid cooler mounted in the radiator must be inspected and cleaned.

Metal debris and friction material, if present, can be trapped or become deposit in the CVT fluid cooler. This debris can contaminate the newly serviced CVT or, in severe cases, can block or restrict the flow of CVT fluid. In either case, malfunction of the newly serviced CVT may occur.

Debris, if present, may deposit as CVT fluid enters the cooler inlet. It will be necessary to back flush the cooler through the cooler outlet in order to flush out any built up debris.

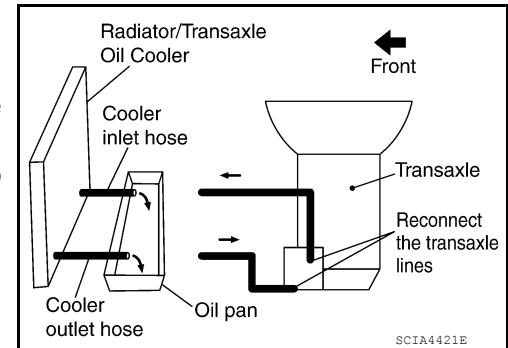
CVT FLUID COOLER CLEANING PROCEDURE

1. Position an oil pan under the transaxle's inlet and outlet cooler hoses.
2. Identify the inlet and outlet fluid cooler hoses.
3. Disconnect the fluid cooler inlet and outlet rubber hoses from the steel cooler tubes or bypass valve.

NOTE:

Replace the cooler hoses if rubber material from the hose remains on the tube fitting.

4. Allow any CVT fluid that remains in the cooler hoses to drain into the oil pan.

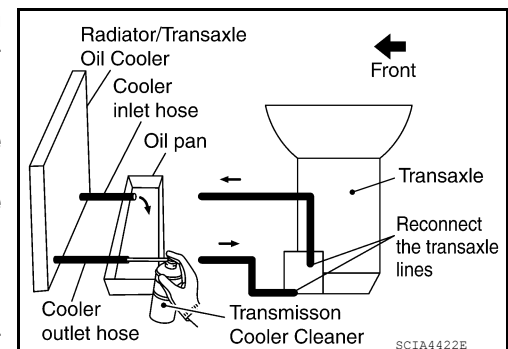


5. Insert the extension adapter hose of a can of Transmission Cooler Cleaner (Nissan P/N 999MP-AM006) into the cooler outlet hose.

CAUTION:

- **Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.**
- **Spray Transmission Cooler Cleaner only with adequate ventilation.**
- **Avoid contact with eyes and skin.**
- **Do not breath vapors or spray mist.**

6. Hold the hose and can as high as possible and spray Transmission Cooler Cleaner in a continuous stream into the cooler outlet hose until CVT fluid flows out of the cooler inlet hose for 5 seconds.



7. Insert the tip of an air gun into the end of the cooler outlet hose.
8. Wrap a shop rag around the air gun tip and end of the cooler outlet hose.

9. Blow compressed air regulated to 5 to 9 kg/cm² (71 to 128 psi) through the cooler outlet hose for 10 seconds to force out any remaining CVT fluid.

10. Repeat steps 5 through 9 three additional times.

11. Position an oil pan under the banjo bolts that connect the CVT fluid cooler steel lines to the transaxle.

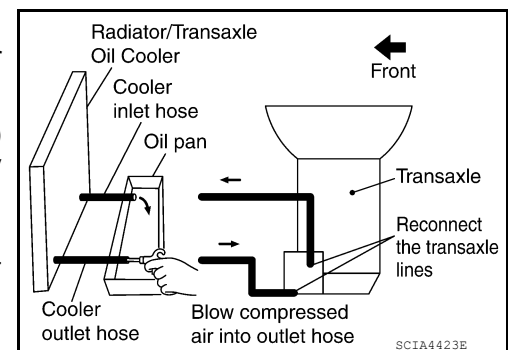
12. Remove the banjo bolts.

13. Flush each steel line from the cooler side back toward the transaxle by spraying Transmission Cooler Cleaner in a continuous stream for 5 seconds.

14. Blow compressed air regulated to 5 to 9 kg/cm² (71 to 128 psi) through each steel line from the cooler side back toward the transaxle for 10 seconds to force out any remaining CVT fluid.

15. Ensure all debris is removed from the steel cooler lines.

16. Ensure all debris is removed from the banjo bolts and fittings.



CVT FLUID COOLER SYSTEM

< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

17. Perform "CVT FLUID COOLER DIAGNOSIS PROCEDURE".

CVT FLUID COOLER DIAGNOSIS PROCEDURE

NOTE:

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

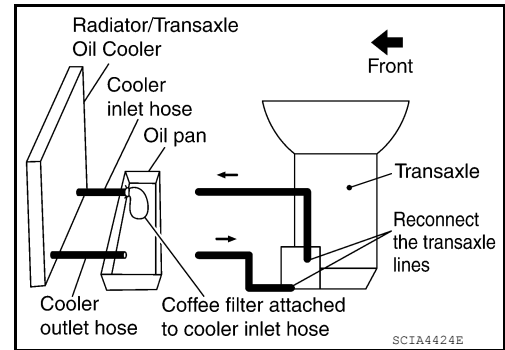
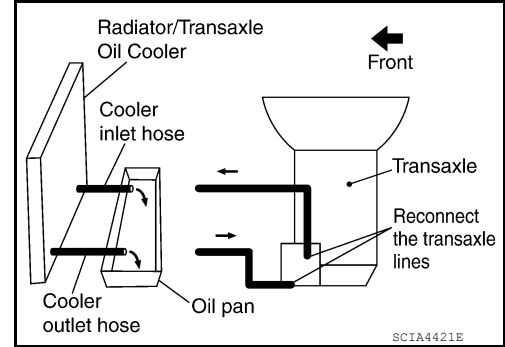
1. Position an oil pan under the transaxle's inlet and outlet cooler hoses.
2. Clean the exterior and tip of the cooler inlet hose.

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

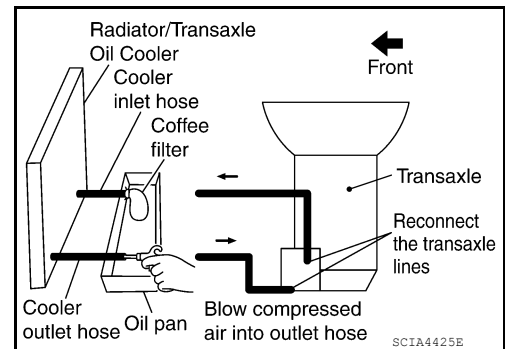
CAUTION:

- Wear safety glasses and rubber gloves when spraying the Transmission Cooler Cleaner.
- Spray Transmission Cooler Cleaner only with adequate ventilation.
- Avoid contact with eyes and skin.
- Do not breath vapors or spray mist.

4. Hold the hose and can as high as possible and spray Transmission Cooler Cleaner in a continuous stream into the cooler outlet hose until CVT fluid flows out of the cooler inlet hose for 5 seconds.
5. Tie a common white, basket-type coffee filter to the end of the cooler inlet hose.

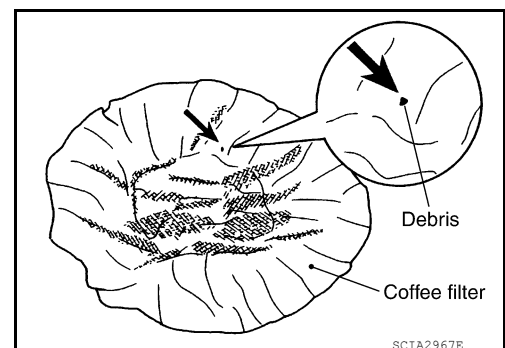


6. Insert the tip of an air gun into the end of the cooler outlet hose.
7. Wrap a shop rag around the air gun tip and end of cooler outlet hose.
8. Blow compressed air regulated to 5 to 9 kg/cm² (71 to 128 psi) through the cooler outlet hose to force any remaining CVT fluid into the coffee filter.
9. Remove the coffee filter from the end of the cooler inlet hose.
10. Perform "CVT FLUID COOLER INSPECTION PROCEDURE".



CVT FLUID COOLER INSPECTION PROCEDURE

1. Inspect the coffee filter for debris.
 - a. If small metal debris less than 1 mm (0.040 in) in size or metal powder is found in the coffee filter, this is normal. If normal debris is found, the CVT fluid cooler/radiator can be re-used and the procedure is ended.

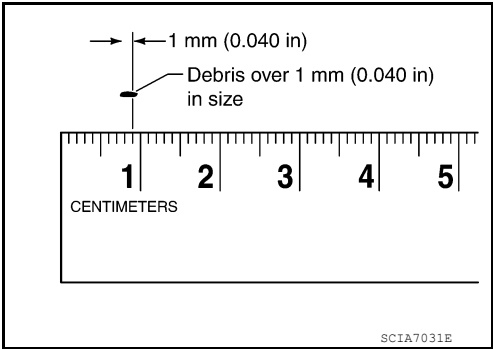


CVT FLUID COOLER SYSTEM

< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

- b. If one or more pieces of debris are found that are over 1 mm (0.040 in) in size and/or peeled clutch facing material is found in the coffee filter, the fluid cooler is not serviceable. The radiator/ fluid cooler must be replaced and the inspection procedure is ended.



CVT FLUID COOLER FINAL INSPECTION

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

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STALL TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

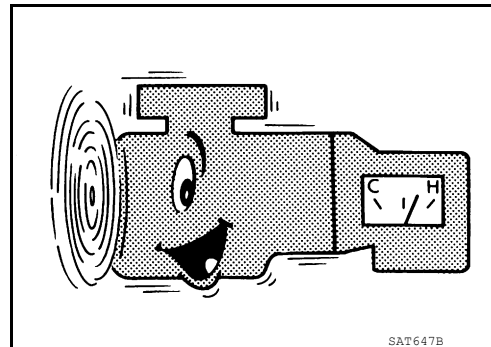
STALL TEST

Inspection and Judgment

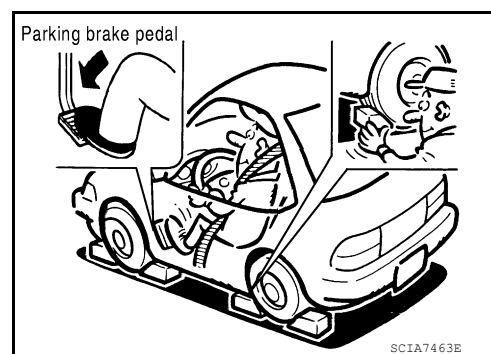
INFOID:000000006390803

INSPECTION

1. Inspect the amount of engine oil. Replenish the engine oil if necessary.
2. Drive for about 10 minutes to warm up the vehicle so that the CVT fluid temperature is 50 to 80°C (122 to 176°F). Inspect the amount of CVT fluid. Replenish if necessary.



3. Securely engage the parking brake so that the tires do not turn.
4. Install a tachometer where it can be seen by driver during test.
 - It is good practice to mark the point of specified engine rpm on indicator.
5. Start engine, apply foot brake, and place selector lever in "D" position.



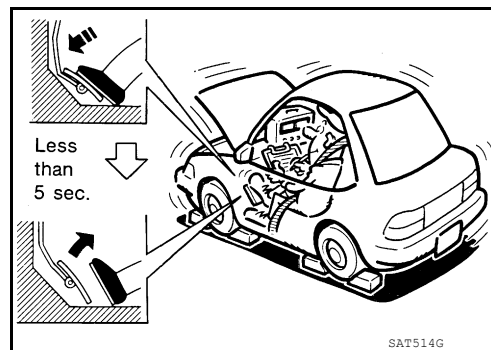
6. While holding down the foot brake, gradually press down the accelerator pedal.
7. Quickly read off the stall speed, and then quickly remove your foot from the accelerator pedal.

CAUTION:

Do not hold down the accelerator pedal for more than 5 seconds during this test.

Stall speed: 2,500 – 3,000 rpm

8. Move the selector lever to the "N" position.
9. Cool down the CVT fluid.
 - CAUTION:
 - Run the engine at idle for at least 1 minute.
10. Repeat steps 6 through 9 with selector lever in "R" position.



JUDGMENT

STALL TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

	Selector lever position		Expected problem location
	"D"	"R"	
Stall rotation	H	O	• Forward clutch
	O	H	• Reverse brake
	L	L	• Engine and torque converter one-way clutch
	H	H	• Line pressure low • Primary pulley • Secondary pulley • Steel belt

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

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LINE PRESSURE TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

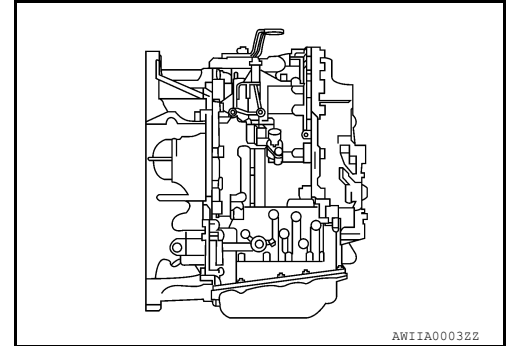
LINE PRESSURE TEST

Inspection and Judgment

INFOID:000000006390804

INSPECTION

Line Pressure Test Port (A)



Line Pressure Test Procedure

1. Inspect the amount of engine oil and replenish if necessary.
2. Drive the car for about 10 minutes to warm it up so that the CVT fluid reaches in the range of 50 to 80°C (122 to 176°F), then inspect the amount of CVT fluid and replenish if necessary.

NOTE:

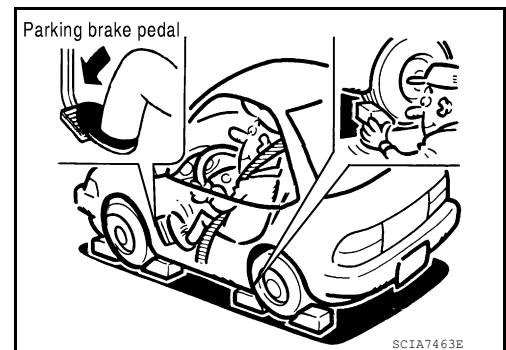
The CVT fluid temperature rises in the range of 50 to 80°C (122 to 176°F) during 10 minutes of driving.

3. After warming up CVT, remove the oil pressure detection plug and install the oil pressure gauge [special service tool: — (OTC3492)].

CAUTION:

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

4. Securely engage the parking brake so that the tires do not turn.



5. Start the engine, and then measure the line pressure at both idle and the stall speed.

CAUTION:

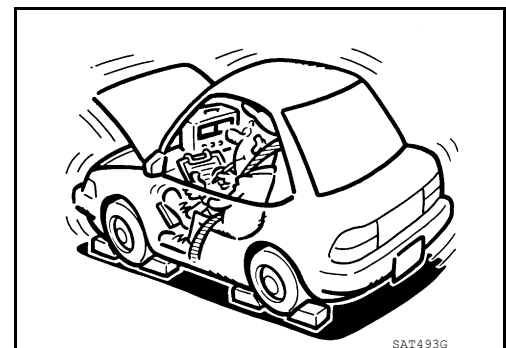
- Keep the brake pedal pressed all the way down during measurement.
- When measuring the line pressure at the stall speed, refer to "STALL TEST".

6. After the measurements are complete, install the oil pressure detection plug and tighten to the specified torque below.

 : 7.5 N·m (0.77 kg-m, 66 in-lb)

CAUTION:

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



Line Pressure

LINE PRESSURE TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

Engine speed	Line pressure kPa (kg/cm ² , psi)
	"R", "D" positions
At idle	750 (7.65, 108.8)
At stall	5,700 (58.14, 826.5)* ²

*1: Without manual mode

*2: Reference values

JUDGMENT

Judgment		Possible cause
Idle speed	Low for all positions ("P", "R", "N", "D")	Possible causes include malfunctions in the pressure supply system and low oil pump output. For example <ul style="list-style-type: none"> Oil pump wear Pressure regulator valve or plug sticking or spring fatigue Oil strainer ⇒ oil pump ⇒ pressure regulator valve passage oil leak Engine idle speed too low
	Only low for a specific position	Possible causes include an oil pressure leak in a passage or device related to the position after the pressure is distributed by the manual valve.
	High	Possible causes include a sensor malfunction or malfunction in the line pressure adjustment function. For example <ul style="list-style-type: none"> Accelerator pedal position signal malfunction CVT fluid temperature sensor malfunction Pressure control solenoid A (line pressure solenoid) malfunction (sticking in OFF state, filter clog, cut line) Pressure regulator valve or plug sticking
Stall speed	Line pressure does not rise higher than the line pressure for idle.	Possible causes include a sensor malfunction or malfunction in the pressure adjustment function. For example <ul style="list-style-type: none"> Accelerator pedal position signal malfunction TCM malfunction Pressure control solenoid A (line pressure solenoid) malfunction (shorting, sticking in ON state) Pressure regulator valve or plug sticking
	The pressure rises, but does not enter the standard position.	Possible causes include malfunctions in the pressure supply system and malfunction in the pressure adjustment function. For example <ul style="list-style-type: none"> Accelerator pedal position signal malfunction Pressure control solenoid A (line pressure solenoid) malfunction (sticking, filter clog) Pressure regulator valve or plug sticking
	Only low for a specific position	Possible causes include an oil pressure leak in a passage or device related to the position after the pressure is distributed by the manual valve.

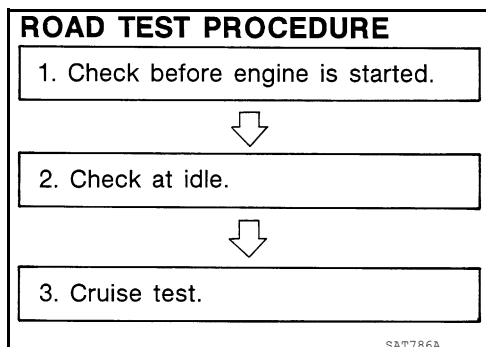
ROAD TEST

Description

INFOID:000000006390805

DESCRIPTION

- The purpose of the test is to determine overall performance of CVT and analyze causes of problems.
- The road test consists of the following three parts:
 1. "Check Before Engine Is Started" [TM-398](#).
 2. "Check at Idle" [TM-399](#).
 3. "Cruise Test" [TM-400](#).



- Before road test, familiarize yourself with all test procedures and items to check.
- Perform tests on all items until specified symptom is found. Troubleshoot items which check out No Good after road test.



CONSULT-III SETTING PROCEDURE

- Using CONSULT-III, perform a cruise test and record the result.
 - Print the result and ensure that shifts and lock-ups take place as per Shift Schedule.
1. Touch "DATA MONITOR" on "SELECT DIAG MODE" screen.
 2. Touch "MAIN SIGNALS" to set recording condition.
 3. See "Numerical Display", "Bar chart Display" or "Line Graph Display".
 4. Touch "START".
 5. When performing cruise test. Refer to [TM-400. "Cruise Test"](#).
 6. After finishing cruise test part, touch "RECORD".
 7. Touch "STORE".
 8. Touch "BACK".
 9. Touch "DISPLAY".
 10. Touch "PRINT".
 11. Check the monitor data printed out.

Check before Engine Is Started

INFOID:000000006390806

1. CHECK CVT INDICATOR LAMP

1. Park vehicle on flat surface.
2. Move selector lever to "P" position.
3. Turn ignition switch OFF. Wait at least 5 seconds.
4. Turn ignition switch ON. (Do not start engine.)

Does shift position indicator come on for about 2 seconds?

- YES >>
1. Turn ignition switch OFF.
 2. Perform self-diagnosis and note NG items.
Refer to [TM-286. "CONSULT-III Function \(TRANSMISSION\)"](#).
 3. Go to [TM-399. "Check at Idle"](#).

ROAD TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

NO >> Stop "Road Test". Refer to [TM-373. "Symptom Table"](#).

Check at Idle

INFOID:000000006390807

1.CHECK STARTING THE ENGINE

1. Park vehicle on flat surface.
2. Move selector lever to "P" or "N" position.
3. Turn ignition switch OFF.
4. Turn ignition switch to "START" position.

Is engine started?

YES >> GO TO 2.

NO >> Stop "Road Test". Refer to [TM-373. "Symptom Table"](#).

2.CHECK STARTING THE ENGINE

1. Turn ignition switch ON.
2. Move selector lever to "D", "M" or "R" position.
3. Turn ignition switch to "START" position.

Is engine started?

YES >> Stop "Road Test". Refer to [TM-373. "Symptom Table"](#).

NO >> GO TO 3.

3.CHECK "P" POSITION FUNCTION

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

Does vehicle move when it is pushed forward or backward?

YES >> Refer to [TM-373. "Symptom Table"](#). Continue "Road Test".

NO >> GO TO 4.

4.CHECK "N" POSITION FUNCTION

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

Does vehicle move forward or backward?

YES >> Refer to [TM-373. "Symptom Table"](#). Continue "Road Test".

NO >> GO TO 5.

5.CHECK SHIFT SHOCK

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

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

YES >> Refer to [TM-373. "Symptom Table"](#). Continue "Road Test".

NO >> GO TO 6.

6.CHECK "R" POSITION FUNCTION

Release foot brake for several seconds.

Does vehicle creep backward when foot brake is released?

YES >> GO TO 7.

NO >> Refer to [TM-373. "Symptom Table"](#). Continue "Road Test".

7.CHECK "D" POSITION FUNCTION

Move selector lever to "D" position and check if vehicle creeps forward.

Does vehicle creep forward in all positions?

YES >> Go to [TM-400. "Cruise Test"](#).

NO >> Stop "Road Test". Refer to [TM-373. "Symptom Table"](#).

ROAD TEST

< PERIODIC MAINTENANCE >

[CVT: RE0F10A]

INFOID:000000006390808

Cruise Test

1.CHECK VEHICLE SPEED WHEN SHIFTING GEARS — PART 1

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

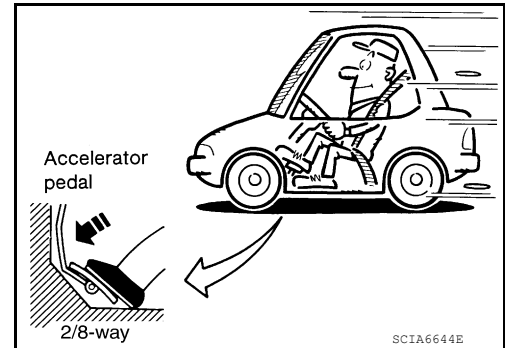
CVT fluid operating temperature: 50 – 80°C (122 – 176°F)

2. Park vehicle on flat surface.
3. Move selector lever to “P” position.
4. Start engine.
5. Move selector lever to “D” position.
6. Accelerate vehicle to 2/8-way throttle depressing accelerator pedal constantly.

 **Read vehicle speed and engine speed. Refer to [TM-418, "Vehicle Speed When Shifting Gears"](#).**

OK or NG

- OK >> GO TO 2.
NG >> Refer to [TM-373, "Symptom Table"](#). Continue “Road Test”.



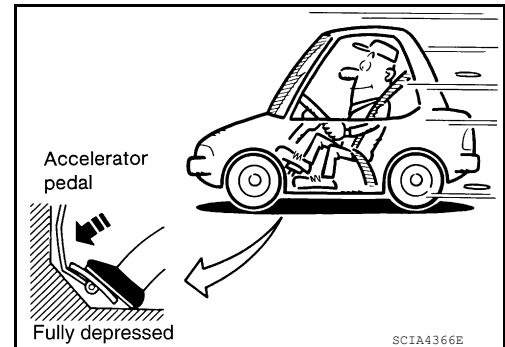
2.CHECK VEHICLE SPEED WHEN SHIFTING GEARS — PART 2

1. Park vehicle on flat surface.
2. Move selector lever to “D” position.
3. Accelerate vehicle to full depression depressing accelerator pedal constantly.

 **Read vehicle speed and engine speed. Refer to [TM-418, "Vehicle Speed When Shifting Gears"](#).**

OK or NG

- OK >> GO TO 3.
NG >> Refer to [TM-373, "Symptom Table"](#). Continue “Road Test”.



3.CHECK MANUAL MODE FUNCTION

Move to manual mode from “D” position.

Does it switch to manual mode?

- YES >> GO TO 4.
NO >> Refer to [TM-373, "Symptom Table"](#). Continue “Road Test”.

4.CHECK SHIFT-UP FUNCTION

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

 **Read the gear position. Refer to [TM-286, "CONSULT-III Function \(TRANSMISSION\)"](#).**

Is upshifting correctly performed?

- YES >> GO TO 5.
NO >> Refer to [TM-373, "Symptom Table"](#). Continue “Road Test”.

5.CHECK SHIFT-DOWN FUNCTION

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

 **Read the gear position. Refer to [TM-286, "CONSULT-III Function \(TRANSMISSION\)"](#).**

Is downshifting correctly performed?

- YES >> GO TO 6.
NO >> Refer to [TM-373, "Symptom Table"](#). Continue “Road Test”.

6.CHECK ENGINE BRAKE FUNCTION

Check engine brake.

Does engine braking effectively reduce speed in M1 position?

YES >> 1. Stop the vehicle.

2. Perform self-diagnosis. Refer to [TM-286, "CONSULT-III Function \(TRANSMISSION\)"](#).

NO >> Refer to [TM-373, "Symptom Table"](#). then continue trouble diagnosis.

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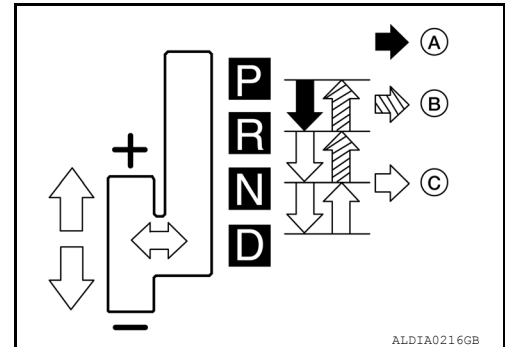
CVT POSITION

Inspection and Adjustment

INFOID:000000006390809

INSPECTION

1. Place shift selector in "P" position, and turn ignition switch ON (engine stop).
2. Make sure that shift selector can be shifted to other than "P" position when brake pedal is depressed. Also make sure that shift selector can be shifted from "P" position only when brake pedal is depressed.
3. Move the shift selector and check for excessive effort, sticking, noise or rattle.
4. Confirm the 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 the shift selector matches the position shown by the shift position indicator and the manual lever on the transaxle.
5. The method of operating the 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", or "N" position without applying forward/backward force to shift selector, check shift selector handle button operation for sticking.
7. Confirm the back-up lamps illuminate only when shift selector is placed in the "R" position. Confirm the back-up lamps do not illuminate when the shift selector is pushed toward the "R" position when in the "P" or "N" position.
8. Confirm the engine can only be started with the shift selector in the "P" and "N" positions.
9. Make sure transaxle is locked completely in "P" position.
10. When shift selector is set to manual shift gate, make sure that manual mode is displayed on combination meter.
Place shift selector to "+" and "-" sides, and check that set shift position changes.



ADJUSTMENT

CAUTION:**Apply parking brake before adjustment.**

1. Loosen the shift selector control cable nut.
2. Place the manual lever and the shift selector in "P" position.
3. Tighten shift selector control cable nut to specified torque.

Shift selector control cable nut: Refer to [TM-406, "Exploded View"](#).

CAUTION:

Secure the manual lever when tightening shift selector control cable nut. Make sure the manual lever stays in the "P" position.

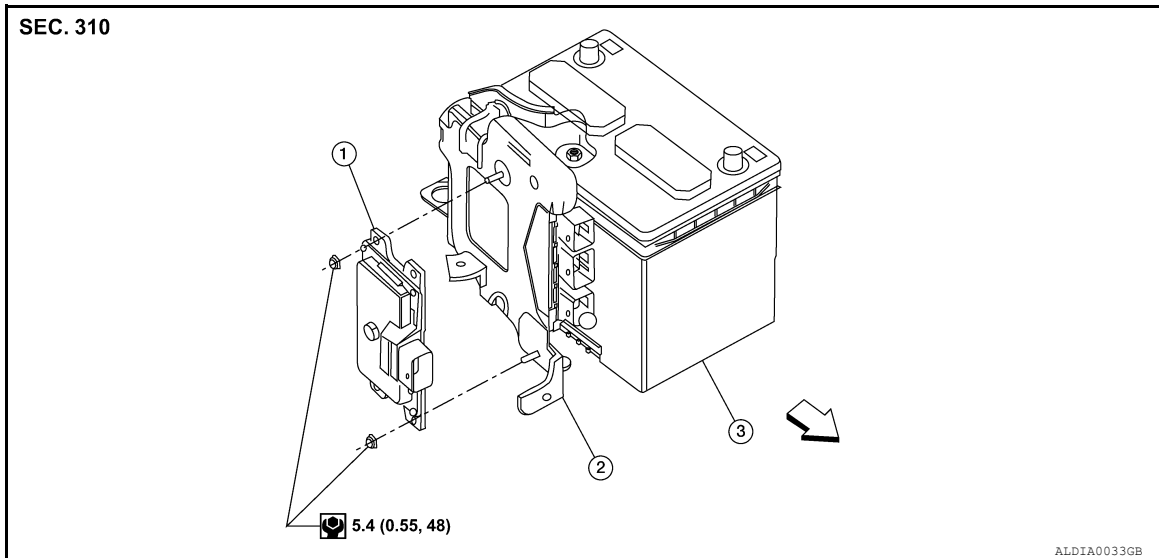
4. Check the operation of the CVT.

REMOVAL AND INSTALLATION

TCM

Exploded View

INFOID:000000006390810



1. TCM

2. Bracket

3. Battery

Front

Removal and Installation

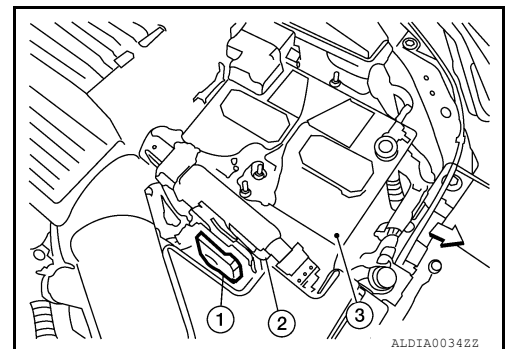
INFOID:000000006390811

REMOVAL

CAUTION:

When replacing TCM and transaxle assembly as a set, replace transaxle assembly first and then replace TCM. Refer to [TM-255, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly"](#).

1. Disconnect the battery negative terminal.
2. Remove the fresh air intake tube (upper).
3. Disconnect the TCM harness connector.
4. Remove the TCM (1) from the bracket (2).
 - Front
 - Battery (3)



INSTALLATION

Installation is in the reverse order of removal.

CVT SHIFT SELECTOR

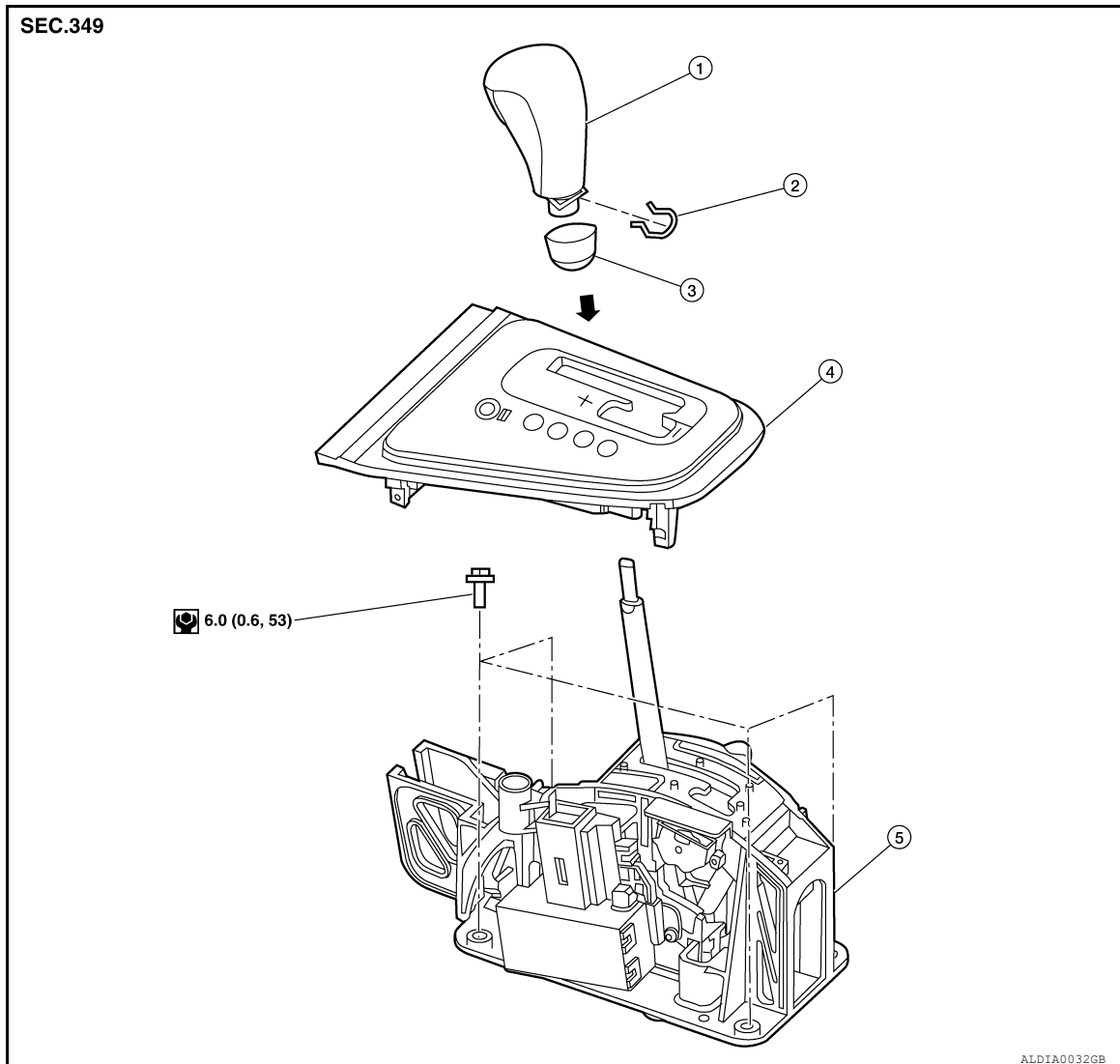
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

CVT SHIFT SELECTOR

Exploded View

INFOID:000000006390812



- | | | |
|--------------------------|-------------------------------|--------------------------------|
| 1. Shift selector handle | 2. Shift selector handle clip | 3. Shift selector handle cover |
| 4. Shift selector plate | 5. Shift selector assembly | |

Removal and Installation

INFOID:000000006390813

REMOVAL

1. Remove the center console. Refer to [IP-22, "Exploded View"](#).
2. Disconnect the shift selector control cable from the shift selector assembly.
3. Disconnect the shift selector harness connector from the shift selector assembly.
4. Remove the shift selector assembly bolts and the shift selector assembly.

INSTALLATION

Installation is in the reverse order of removal.

- When installing the shift selector control cable to the shift selector assembly, make sure that the shift selector control cable is fully pressed in with the ribbed surface facing upward.
- After installation is completed, adjust and check CVT position. Refer to [TM-402, "Inspection and Adjustment"](#).

CVT SHIFT SELECTOR

< REMOVAL AND INSTALLATION >

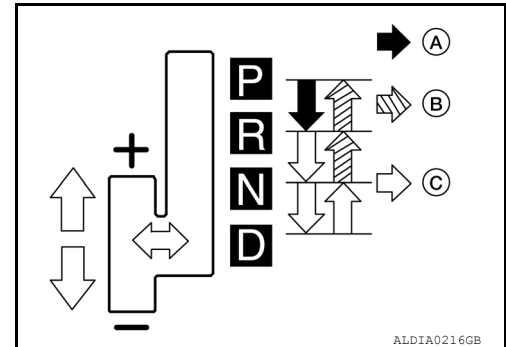
[CVT: RE0F10A]

Inspection and Adjustment

INFOID:000000006390814

INSPECTION

1. Place shift selector in "P" position, and turn ignition switch ON (engine stop).
2. Make sure that shift selector can be shifted to other than "P" position when brake pedal is depressed. Also make sure that shift selector can be shifted from "P" position only when brake pedal is depressed.
3. Move the shift selector and check for excessive effort, sticking, noise or rattle.
4. Confirm the 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 the shift selector matches the position shown by the shift position indicator and the manual lever on the transaxle.
5. The method of operating the 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", or "N" position without applying forward/backward force to shift selector, check shift selector handle button operation for sticking.
7. Confirm the back-up lamps illuminate only when shift selector is placed in the "R" position. Confirm the back-up lamps do not illuminate when the shift selector is pushed toward the "R" position when in the "P" or "N" position.
8. Confirm the engine can only be started with the shift selector in the "P" and "N" positions.
9. Make sure transaxle is locked completely in "P" position.
10. When shift selector is set to manual shift gate, make sure that manual mode is displayed on combination meter.
Place shift selector to "+" and "-" sides, and check that set shift position changes.



ADJUSTMENT

CAUTION:

Apply parking brake before adjustment.

1. Loosen the shift selector control cable nut.
2. Place the manual lever and the shift selector in "P" position.
3. Tighten shift selector control cable nut to specified torque.

Shift selector control cable nut: Refer to [TM-406, "Exploded View"](#).

CAUTION:

Secure the manual lever when tightening shift selector control cable nut. Make sure the manual lever stays in the "P" position.

4. Check the operation of the CVT.

CONTROL CABLE

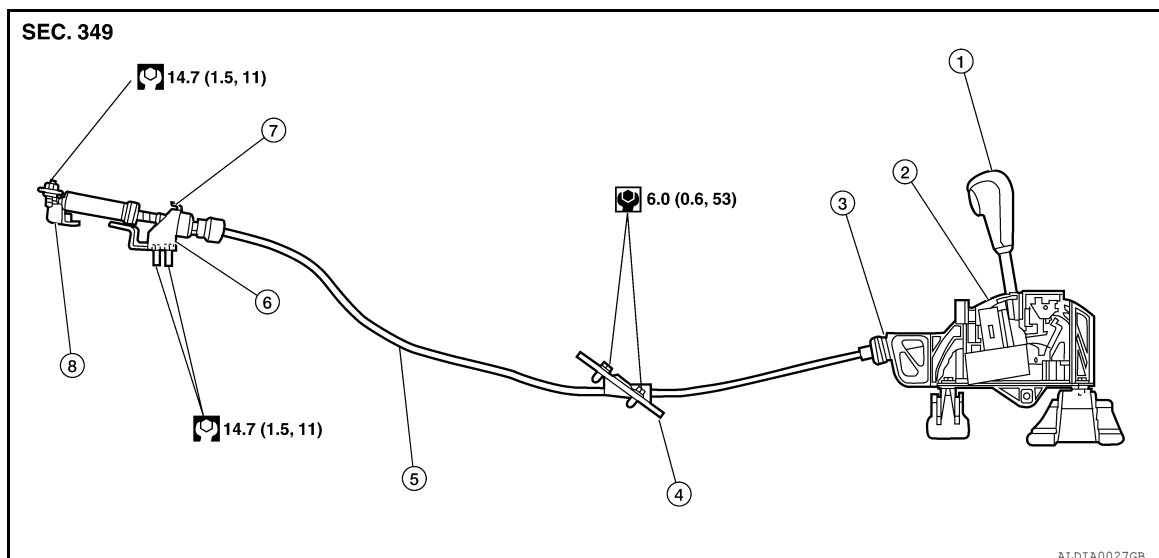
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

CONTROL CABLE

Exploded View

INFOID:000000006390815



- | | | |
|---------------------|----------------------------|-------------------------|
| 1. Shift selector | 2. Shift selector assembly | 3. Control cable socket |
| 4. Retainer grommet | 5. Control cable | 6. Bracket |
| 7. Lock plate | 8. Manual lever | |

Removal and Installation

INFOID:000000006390816

REMOVAL

1. Move shift selector to "P".
2. Remove the air cleaner and duct assembly. Refer to [EM-131, "Removal and Installation"](#).
3. Remove the control cable nut and control cable from the manual lever.
4. Remove the lock plate and the control cable from the bracket.
5. Remove the center console. Refer to [IP-22, "Disassembly and Assembly"](#).
6. Remove the bracket covering the retainer grommet.
7. Remove the retainer grommet bolts and the retainer grommet.
8. Remove the control cable from the shift selector assembly.
9. Remove the control cable from the vehicle.

INSTALLATION

Installation is in the reverse order of removal.

- When installing the control cable to the shift selector assembly, make sure that the control cable socket is fully pressed into the shift selector assembly, and the control cable end is fully pressed in with the ribbed surface facing upward.
- After installation is complete, adjust and check the CVT position. Refer to [TM-238, "Inspection and Adjustment"](#).

DIFFERENTIAL SIDE OIL SEAL

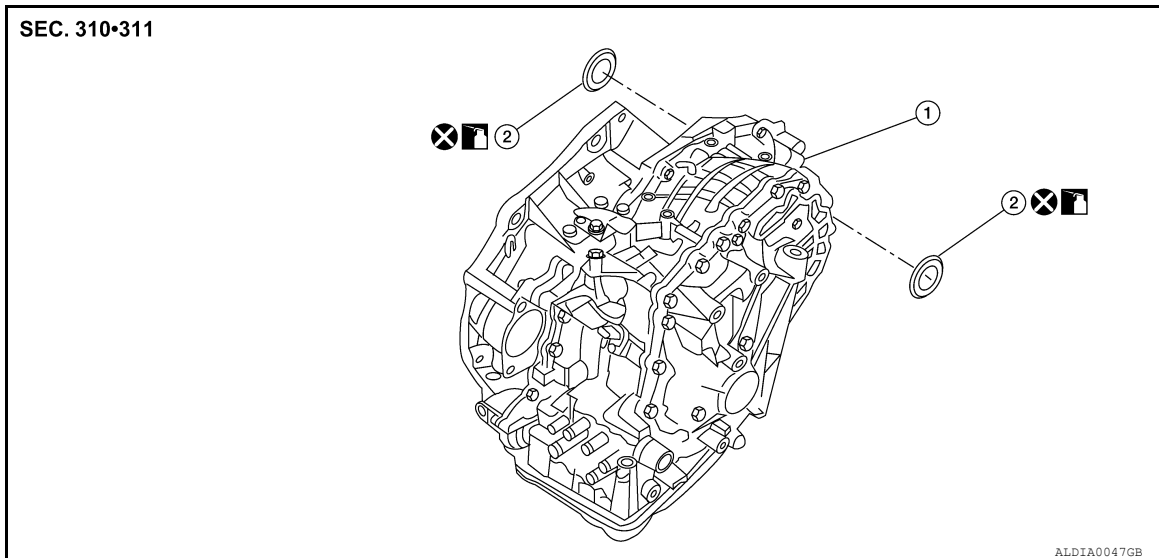
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

DIFFERENTIAL SIDE OIL SEAL

Exploded View

INFOID:000000006390817



1. CVT assembly

2. Differential side oil seal



:NISSAN CVT Fluid NS-2

Removal and Installation

INFOID:000000006390818

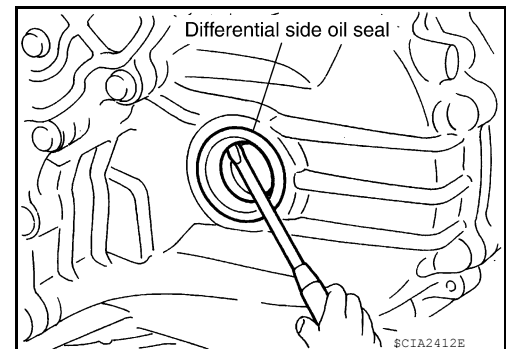
REMOVAL

1. Remove drive shaft assembly. Refer to [FAX-16, "Disassembly and Assembly \(Left Side\)"](#) and [FAX-21, "Disassembly and Assembly \(Right Side\)"](#).

2. Remove the differential side oil seal using suitable tool

CAUTION:

Do not scratch transaxle case or converter housing.



INSTALLATION

1. Drive the new differential side oil seal into the transaxle case side (B) and converter housing side (C) until it is flush using suitable tool.

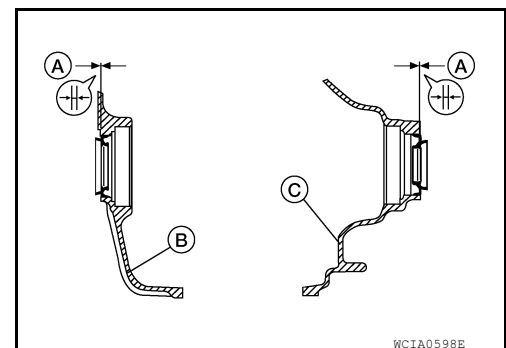
Tool number : KV38100300 (—)

Dimension A : 1.8 ± 0.5 mm (0 ± 0.020 in)

CAUTION:

- Do not reuse differential side oil seals.
- Apply specified NISSAN CVT fluid to side oil seals.

2. Install drive shaft assembly. Refer to [FAX-16, "Disassembly and Assembly \(Left Side\)"](#) and [FAX-21, "Disassembly and Assembly \(Right Side\)"](#).
3. Check CVT fluid level. Refer to [TM-389, "Inspection"](#).



AIR BREATHER HOSE

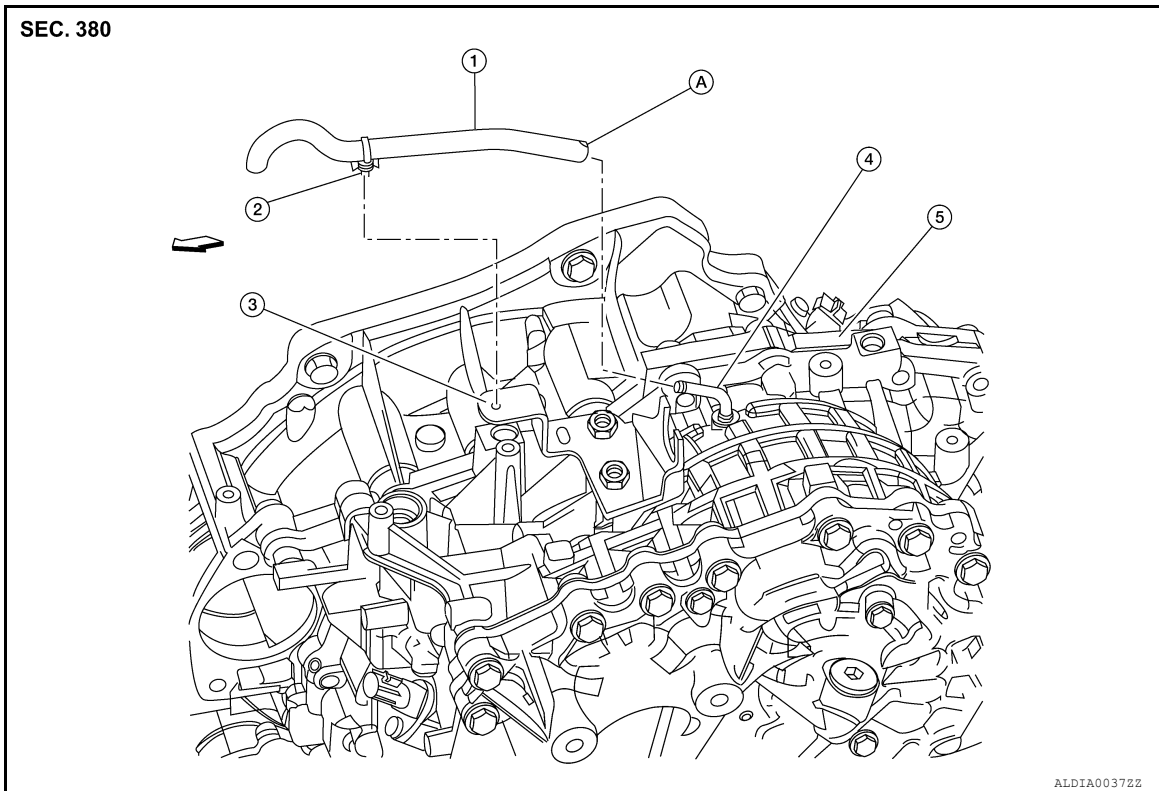
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

AIR BREATHER HOSE

Exploded View

INFOID:000000006390819



- | | | |
|----------------------|-----------------|---------------|
| 1. Air breather hose | 2. Clip | 3. Bracket |
| 4. Air breather tube | 5. CVT assembly | A. Paint mark |
| ⇐ Front | | |

Removal and Installation

INFOID:000000006390820

Refer to the figure for removal and installation.

CAUTION:

- Install air breather hose with paint mark facing upward.
- Insert air breather hose a minimum of 17mm (0.67 in) onto air breather tube (to end of air breather tubes radius end).
- Install air breather hose to bracket by fully inserting the clip.
- Make sure there are no pinched or restricted areas on air breather hose caused by bending or winding when installing it.

OIL PAN

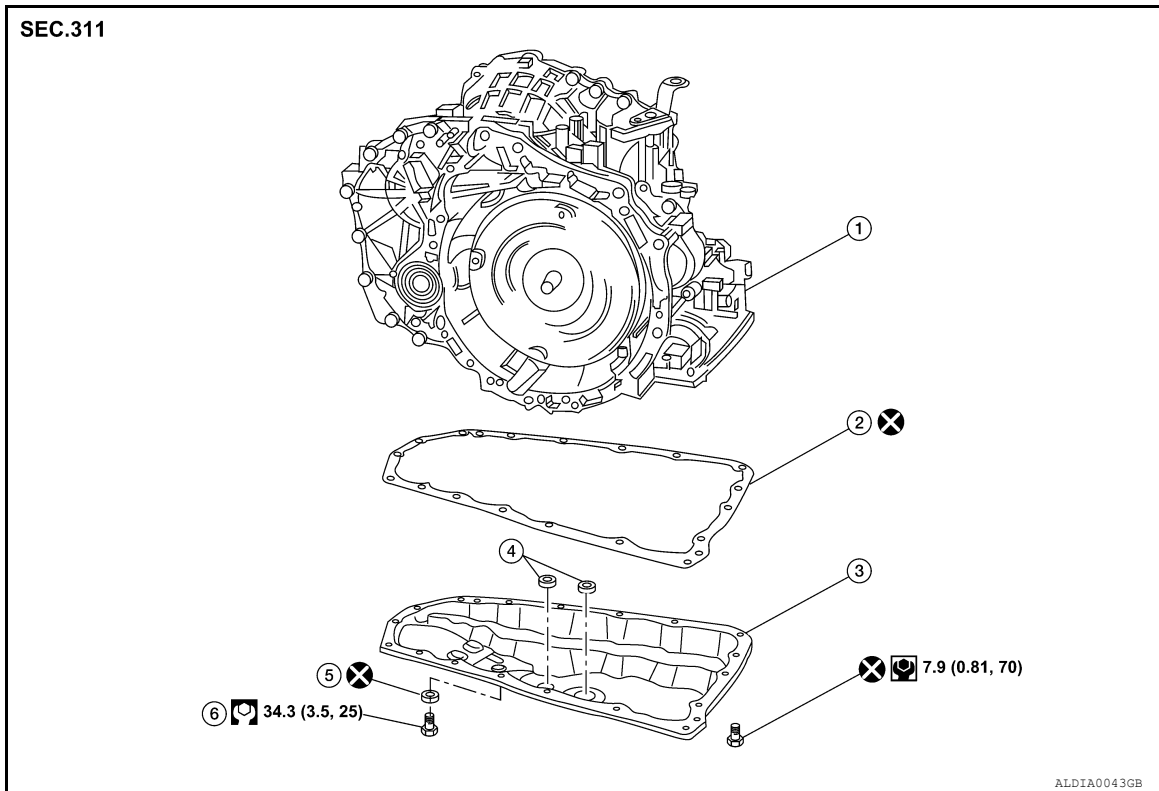
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

OIL PAN

Exploded View

INFOID:000000006390821



1. CVT assembly

2. Oil pan gasket

3. Oil pan

4. Magnet

5. Drain plug gasket

6. Drain plug

Removal and Installation

INFOID:000000006390822

Refer to the figure for removal and installation.

CAUTION:

- Check for foreign materials in the oil pan to help determine the cause of any malfunction. If the CVT fluid is very dark, smells burned, or contains foreign particles, frictional material (clutches) may need replacement. A tacky film that will not wipe clean indicates varnish build up. Varnish can cause valves to stick and can inhibit pump pressure.
- Completely remove all moisture, oil, old gasket and any foreign material from the gasket mounting surface of the CVT case and oil pan.
- Do not reuse oil pan gasket and oil pan bolts.
- After installation is complete, fill CVT with recommended CVT fluid and check for CVT fluid leakage and CVT fluid level. Refer to [TM-390, "Changing"](#) and [TM-389, "Inspection"](#).

TRANSMISSION RANGE SWITCH

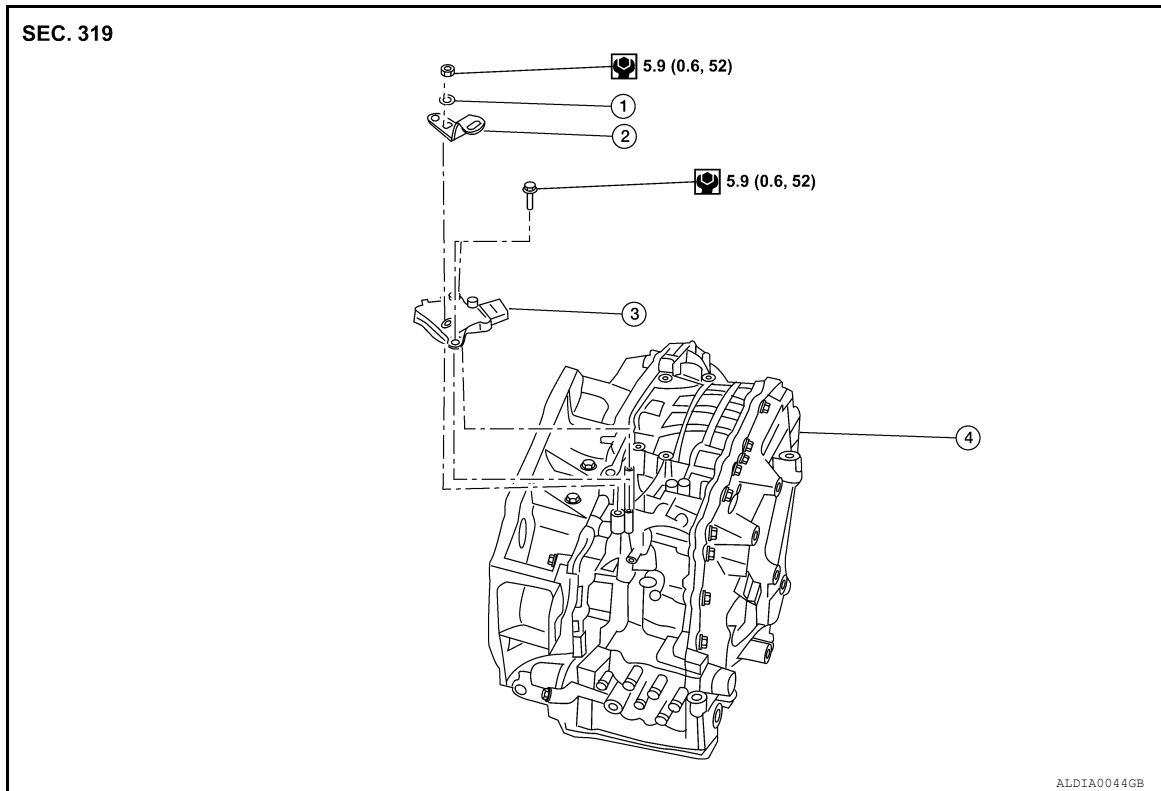
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

TRANSMISSION RANGE SWITCH

Exploded View

INFOID:000000006390823



1. Washer
2. Manual lever
3. Transmission range switch
4. CVT assembly

Removal and Installation

INFOID:000000006390824

Refer to the figure for removal and installation.

NOTE:

- Align transmission range switch position when installing.
- After installation of transmission range switch, check the continuity of transmission range switch.
- After installation is complete, adjust and check CVT position. Refer to [TM-402, "Inspection and Adjustment"](#).

PRIMARY SPEED SENSOR

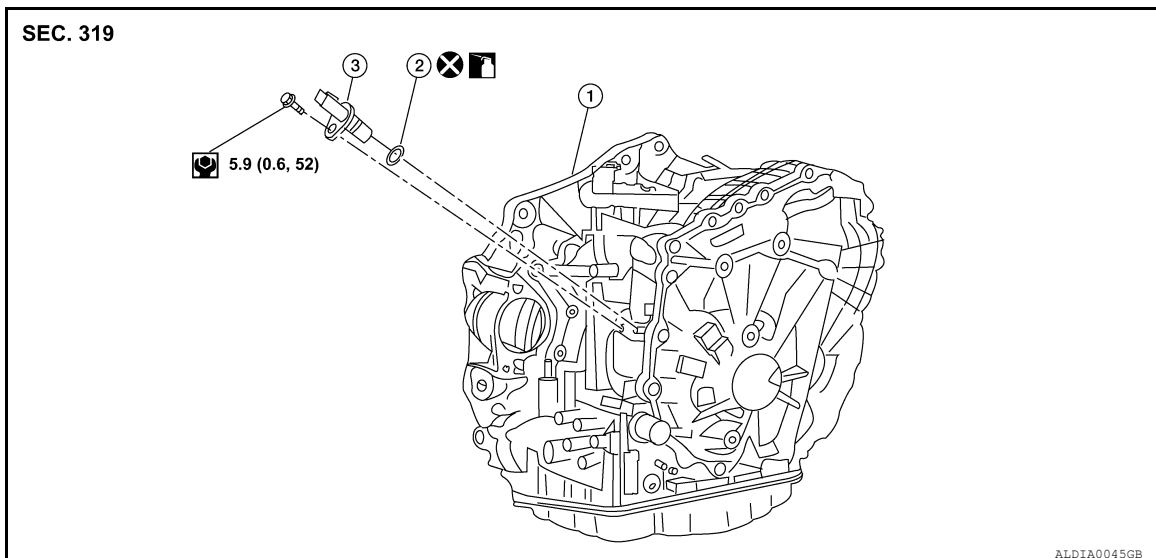
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

PRIMARY SPEED SENSOR

Exploded View


INFOID:000000006390825



1. CVT assembly

2. O-ring

3. Primary speed sensor

 : Nissan CVT Fluid NS-2

Removal and Installation

INFOID:000000006390826

Refer to the figure for removal and installation.

CAUTION:

- Do not reuse O-ring.
- Apply CVT fluid to O-ring.
- After installation is complete, check for CVT fluid leakage and CVT fluid level. Refer to [TM-389](#), ["Inspection"](#).

SECONDARY SPEED SENSOR

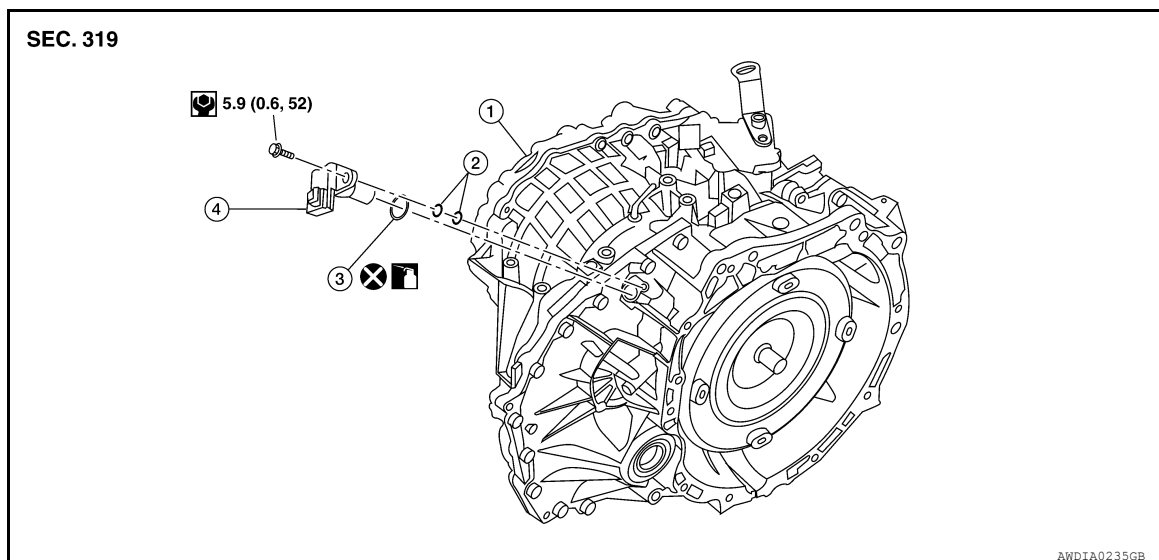
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

SECONDARY SPEED SENSOR

Exploded View

INFOID:000000006390827




1. CVT assembly

2. Shim

3. O-ring

4. Secondary Speed Sensor

 : Nissan CVT Fluid NS-2

Removal and Installation

INFOID:000000006390828

Refer to the figure for removal and installation.

CAUTION:

- Do not reuse O-ring.
- Apply CVT fluid to O-ring.
- Insert the shims.
- After installation is complete, check for CVT fluid leakage and CVT fluid level Refer to [TM-389](#), "[Inspection](#)".

OIL PUMP FITTING BOLT

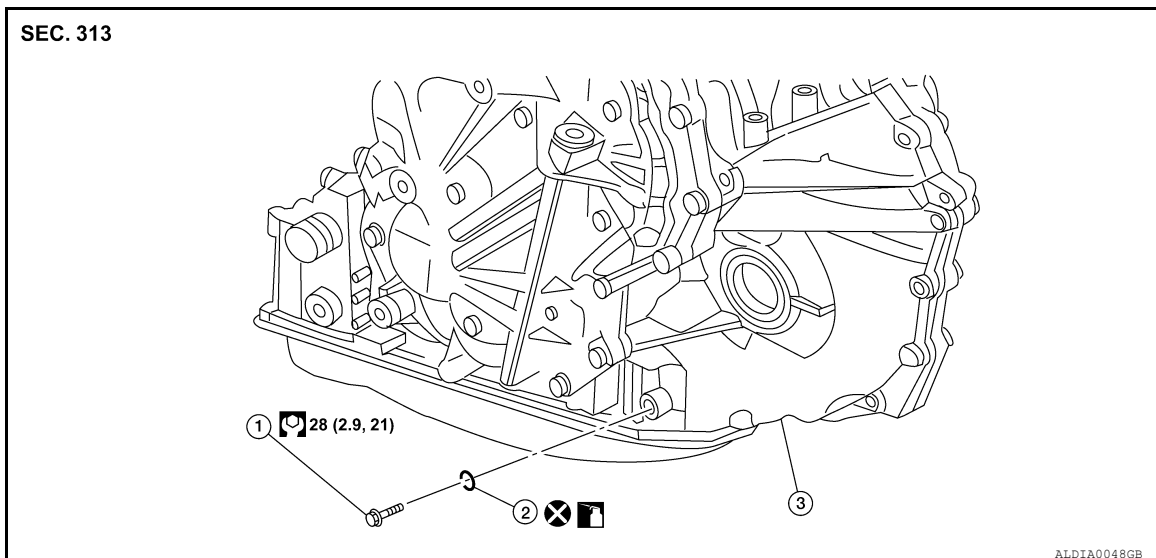
< REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

OIL PUMP FITTING BOLT

Exploded View

INFOID:000000006390829



1. Oil pump bolt

2. O-ring

3. CVT assembly

 : Nissan CVT Fluid NS-2

Removal and Installation

INFOID:000000006390830

Refer to the figure for removal and installation.

CAUTION:

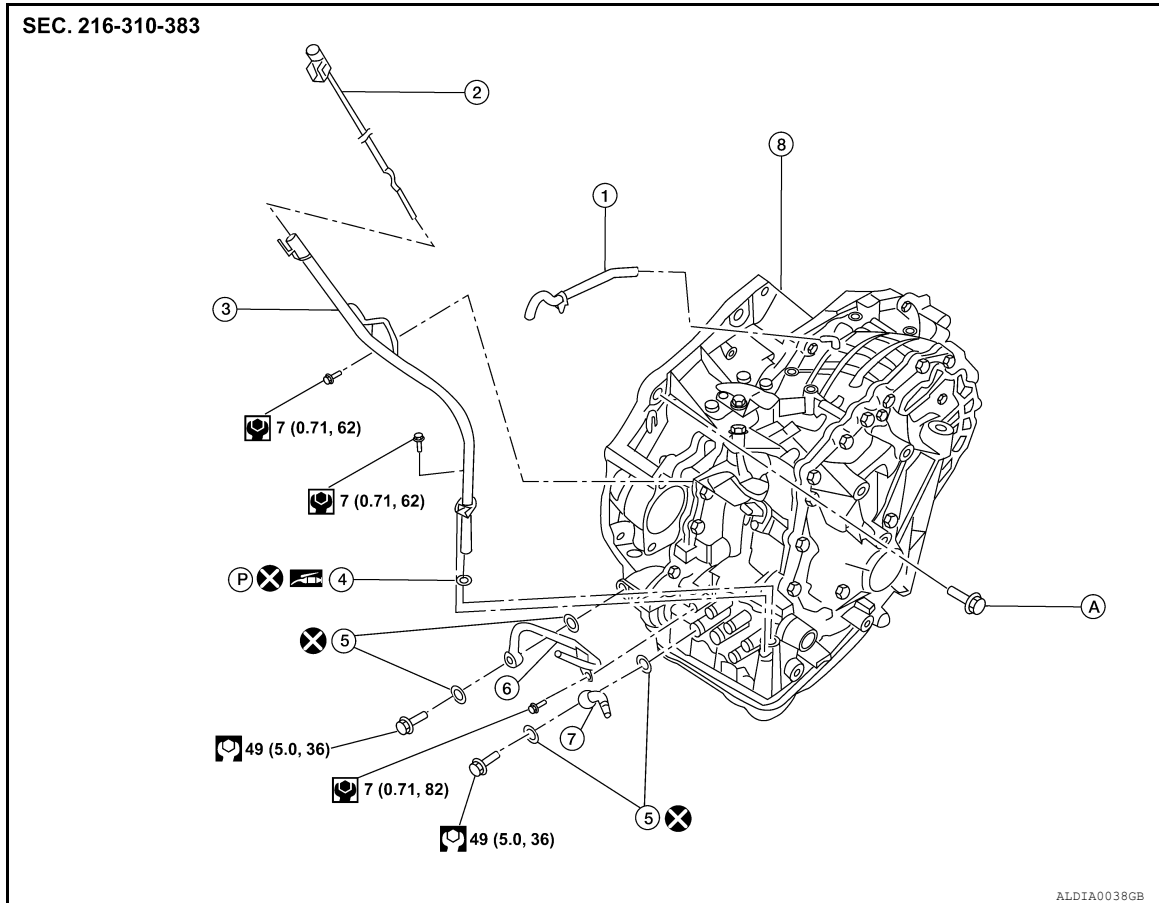
- Do not reuse O-ring.
- Apply CVT fluid to O-ring.
- After installation is complete, check for CVT fluid leakage and CVT fluid level. Refer to [TM-389, "Inspection"](#).

UNIT REMOVAL AND INSTALLATION

TRANSAXLE ASSEMBLY

Exploded View

INFOID:000000006390831



- | | | |
|--|--------------------------|----------------------------|
| 1. Air breather hose | 2. CVT fluid level gauge | 3. CVT fluid charging pipe |
| 4. O-ring | 5. Copper sealing washer | 6. Fluid cooler tube |
| 7. Fluid cooler tube | 8. CVT assembly | |
| A. Refer to TM-414, "Removal and Installation" . | | |

Removal and Installation

INFOID:000000006390832

REMOVAL

WARNING:

Never remove the radiator cap when the engine is hot. Serious burns could occur from high pressure coolant escaping from the radiator.

CAUTION:

- Perform this step engine is cold.
- When replacing TCM and transaxle assembly as a set, replace transaxle assembly first and then replace TCM. Refer to [TM-255, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly"](#).

1. Remove the engine and transaxle as an assembly. Refer to [EM-73, "Removal and Installation"](#).

NOTE:

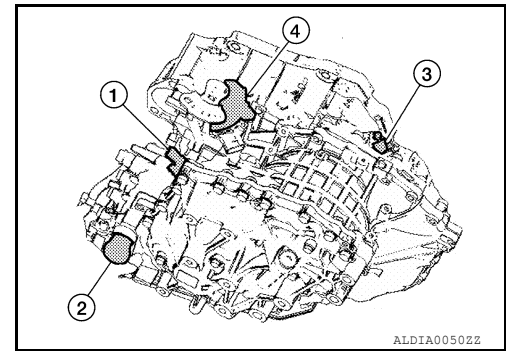
Using paint, put matching marks on the drive plate and torque converter when removing the torque converter to drive plate nuts.

TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

2. Disconnect the electrical connectors from the following:
 - Primary speed sensor (1)
 - Secondary speed sensor (3)
 - CVT unit connector (2)
 - Transmission range switch (4)
3. Remove the harness from the CVT.
4. Remove the CVT to engine and engine to CVT bolts.
5. Separate the CVT from the engine.
6. If necessary, remove the following from the CVT:
 - Primary speed sensor
 - Secondary speed sensor
 - Transmission range switch
 - CVT fluid charging pipe
 - Water tube and hoses
 - Air breather hose
 - Any necessary brackets



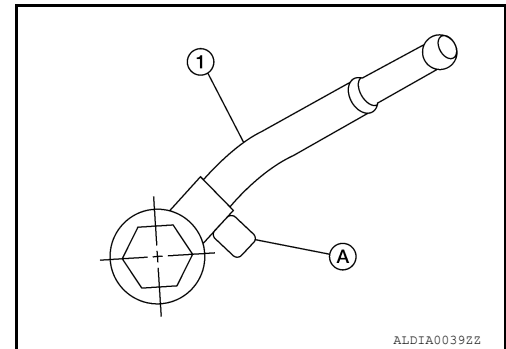
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INSTALLATION

Installation is in the reverse order of removal.

CAUTION:

- When installing fluid cooler tube (1) align the tube against the rib (A) as shown.
- When replacing an engine or transaxle you must make sure any dowels are installed correctly during re-assembly.
- Improper alignment caused by missing dowels may cause vibration, oil leaks or breakage of drivetrain components.
- Do not reuse O-rings or copper sealing washers.
- When turning crankshaft, turn it clockwise as viewed from the front of the engine.
- When tightening the nuts for the torque converter while securing the crankshaft pulley bolt, be sure to confirm the tightening torque of the crankshaft pulley bolt. Refer to [EM-77, "Disassembly and Assembly"](#).
- After converter is installed to drive plate, rotate crankshaft several turns to check that CVT rotates freely without binding.
- When installing the CVT to the engine, align the matching mark on the drive plate with the matching mark on the torque converter.
- When installing the CVT to the engine, attach the bolts in accordance with the following standard.

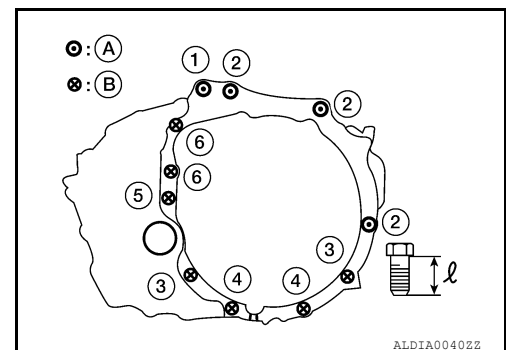


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A : Transaxle to engine

B : Engine to transaxle

Bolt No.	1	2	3	4	5	6
Number of bolts	1	3	2	2	1	2
Bolt length "ℓ" mm (in)	45 (1.77)	45 (1.77)	45 (1.77)	35 (1.38)	45 (1.77)	45 (1.77)
Tightening torque N·m (kg-m, ft-lb)	35 (3.6, 26)	75 (7.7, 55)	43 (4.4, 32)	43 (4.4, 32)	48 (4.9, 35)	48 (4.9, 35)



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- When installing the drive plate to torque converter nuts, tighten them temporarily. then tighten the nuts to the specified torque.

Inspection and Adjustment

INSPECTION BEFORE INSTALLATION

INFOID:000000006390833

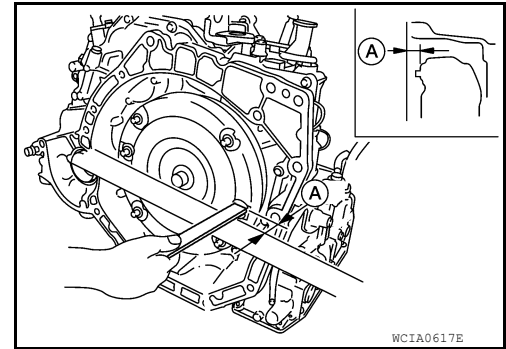
TRANSAXLE ASSEMBLY

< UNIT REMOVAL AND INSTALLATION >

[CVT: RE0F10A]

After installing the torque converter to the CVT, be sure to check distance (A) to ensure it is within specifications.

Distance (A) : 14.4 mm (0.567 in)



INSPECTION AFTER INSTALLATION

Check the following.

- Check for CVT fluid leakage and check CVT fluid level. Refer to [TM-389, "Inspection"](#).
- Check CVT position. Refer to [TM-402, "Inspection and Adjustment"](#).
- Start and warm up the engine. Visually check that there is no leakage of engine coolant and CVT fluid.

ADJUSTMENT AFTER INSTALLATION

Erase TCM data.

- Erase CVT fluid degradation level data. Refer to [TM-286, "CONSULT-III Function \(TRANSMISSION\)"](#).
- When replacing the transaxle assembly, erase EEPROM in TCM. Refer to [TM-255, "ADDITIONAL SERVICE WHEN REPLACING CONTROL UNIT : Service After Replacing TCM and Transaxle Assembly"](#).

TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

< UNIT DISASSEMBLY AND ASSEMBLY >

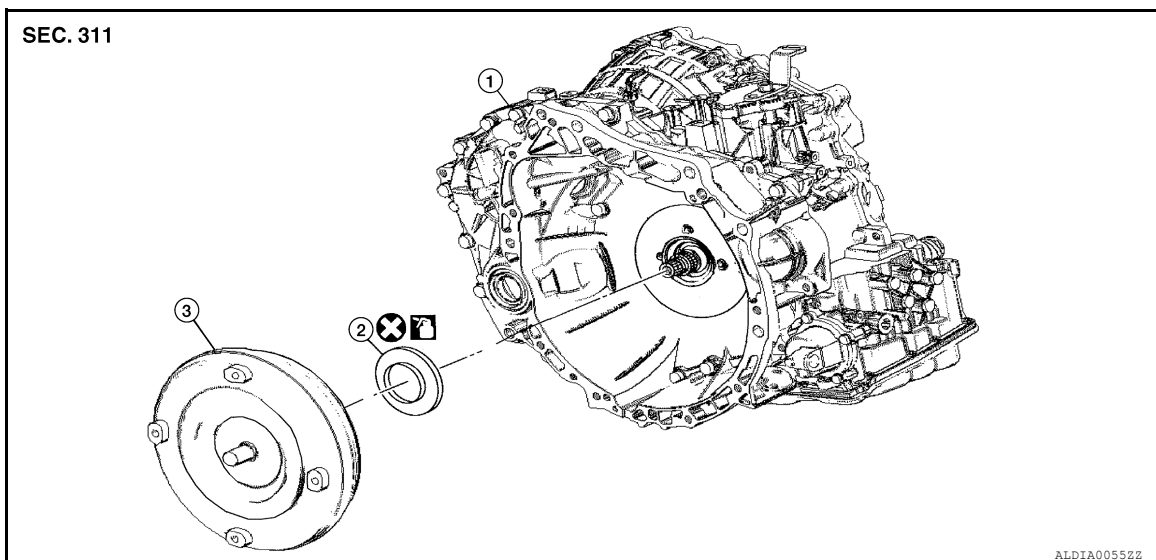
[CVT: RE0F10A]

UNIT DISASSEMBLY AND ASSEMBLY

TORQUE CONVERTER AND CONVERTER HOUSING OIL SEAL

Exploded View


INFOID:0000000006390834



1. CVT assembly

2. Converter housing oil seal

3. Torque converter

 : Apply CVT Fluid. Refer to [MA-12, "Fluids and Lubricants"](#).

Disassembly

INFOID:0000000006390835

1. Remove torque converter.
2. Remove the converter housing oil seal using suitable tool.

CAUTION:

Do not scratch converter housing.

Assembly

INFOID:0000000006390836

1. Drive the converter housing oil seal in evenly using suitable tool.
CAUTION:
 - Do not reuse converter housing oil seal.
 - Apply CVT fluid to converter housing oil seal.
2. Install the torque converter.

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[CVT: RE0F10A]

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

General Specification

INFOID:000000006390837

Applied model		QR25DE engine	
		2WD	
CVT model		RE0F10A	
CVT assembly	Model code number	1XF3C	
Transmission gear ratio	D range	2.349 – 0.394	
	Reverse	1.750	
	Final drive	5.798	
Recommended fluid		NISSAN CVT Fluid NS-2*1	
Fluid capacity		7.3 liter (7-3/4 US qt, 6-3/4 Imp qt)*2	

CAUTION:

- Use only Genuine NISSAN CVT Fluid NS-2. Do not mix with other fluid.
- Using CVT fluid other than Genuine NISSAN CVT Fluid NS-2 will deteriorate in driveability and CVT durability, and may damage the CVT, which is not covered by the warranty.

*1: Refer to [MA-12, "Fluids and Lubricants"](#).

*2: The fluid capacity is the reference value. Check the fluid level with CVT fluid level gauge

Vehicle Speed When Shifting Gears

INFOID:000000006390838

Numerical value data are reference values.

Engine type	Throttle position	Shift pattern	Engine speed (rpm)	
			At 40 km/h (25 MPH)	At 60 km/h (37 MPH)
QR25DE	8/8	"D" position	3,300 – 4,200	4,300 – 5,200
	2/8	"D" position	1,300 – 3,100	1,400 – 3,400

*: Without manual mode

CAUTION:

Lock-up clutch is engaged when vehicle speed is approximately 18 km/h (11 MPH) to 90 km/h (56 MPH).

Stall Speed

INFOID:000000006390839

Stall speed	2,500 – 3,000 rpm
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Line Pressure

INFOID:000000006390840

Engine speed	Line pressure kPa (bar, kg/cm ² , psi)
	"R" or "D" positions
At idle	750 (7.50, 7.65, 108.8)
At stall	5,700 (57.00, 58.14, 826.5)*1

*1: Reference values

SERVICE DATA AND SPECIFICATIONS (SDS)

< SERVICE DATA AND SPECIFICATIONS (SDS)

[CVT: RE0F10A]

Solenoid Valves

INFOID:000000006390841

Name	Resistance (Approx.)	Terminal
Secondary pressure solenoid valve	3.0 – 9.0 Ω	3
Line pressure solenoid valve		2
Torque converter clutch solenoid valve		12
Lock-up select solenoid valve	17.0 – 38.0 Ω	13

CVT Fluid Temperature Sensor

INFOID:000000006390842

Name	Condition	CONSULT-III "DATA MONITOR" (Approx.)	Resistance (Approx.)
ATF TEMP SEN	20°C (68°F)	2.0 V	6.5 k Ω
	80°C (176°F)	1.0 V	0.9 k Ω

Primary Speed Sensor

INFOID:000000006390843

Name	Condition	Data (Approx.)
Primary speed sensor	When driving ["M1" position, 20 km/h (12 MPH)]	730 Hz

Secondary Speed Sensor

INFOID:000000006390844

Name	Condition	Data (Approx.)
Secondary speed sensor	When driving ["D" position, 20 km/h (12 MPH)]	480 Hz

Removal and Installation

INFOID:000000006390845

Distance between end of converter housing and torque converter	14.4 mm (0.567 in)
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