

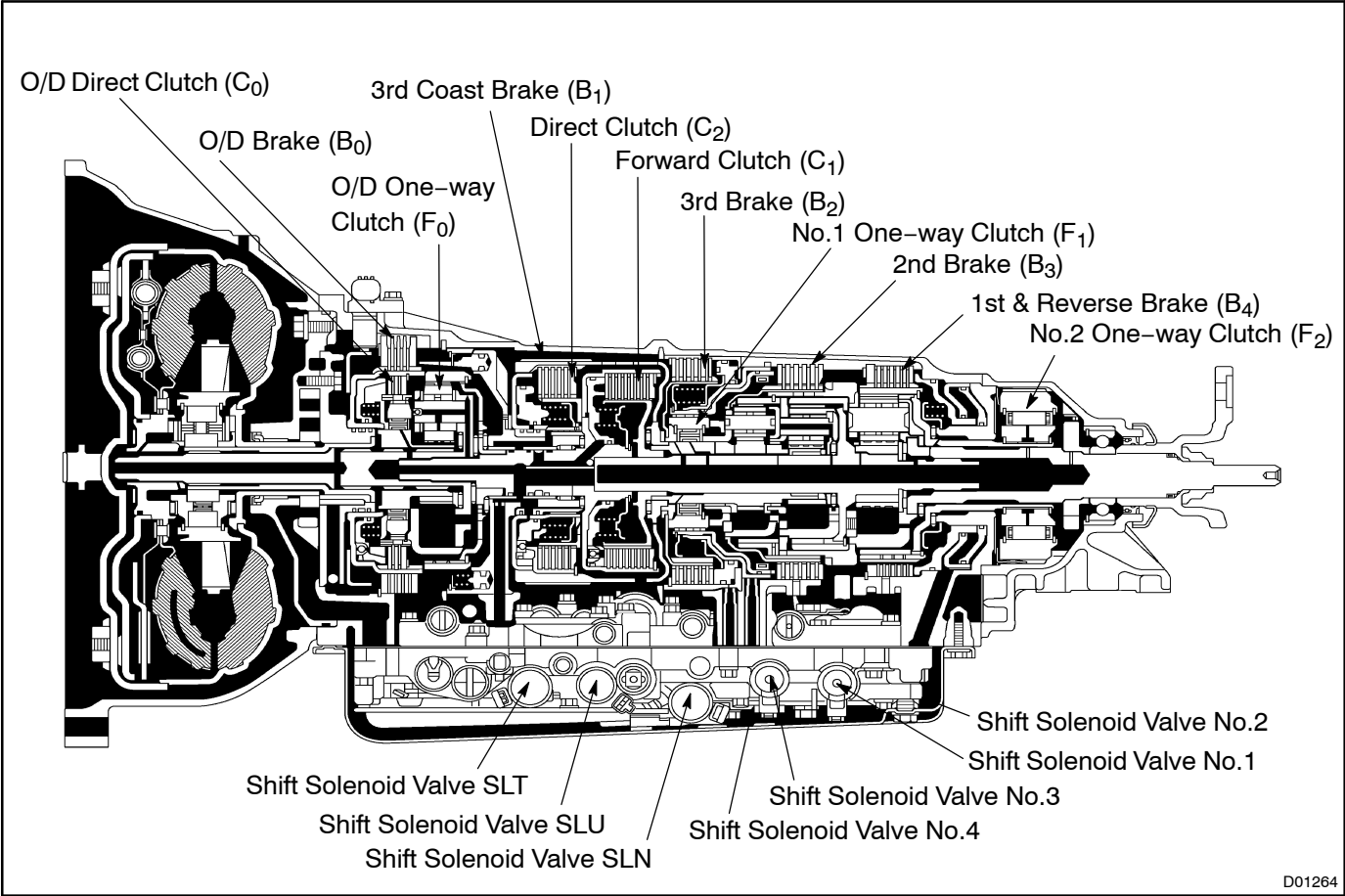
AUTOMATIC TRANSMISSION SYSTEM

PRECAUTION

AT05V-02

If the vehicle is equipped with a mobile communication system, refer to the precautions in the IN section.

OPERATION



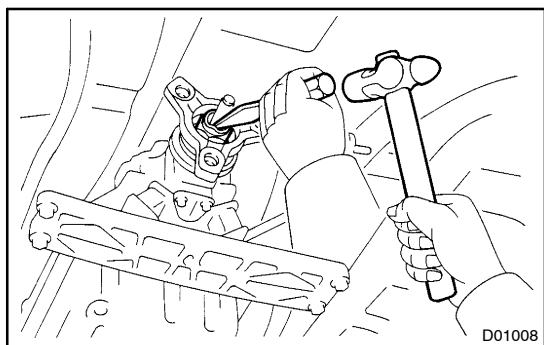
Shift Lever Position	Gear Position	S1	S2	S3	S4	C ₀	C ₁	C ₂	B ₀	B ₁	B ₂	B ₃	B ₄	F ₀	F ₁	F ₂
P	Park	ON	OFF	ON	OFF	○										
R	Reverse	ON	OFF	OFF	OFF			○	○				○			
N	Neutral	ON	OFF	ON	OFF	○										
D	1st	ON	OFF	OFF	OFF	○	○							○		○
	2nd	ON	ON	OFF	OFF	○	○					○		○		
	3rd	OFF	ON	OFF	OFF	○	○				○			○	○	
	4th	OFF	OFF	ON	OFF	○	○	○			○			○		
	5th	OFF	OFF	OFF	ON		○	○	○		○					
4	1st	ON	OFF	OFF	OFF	○	○							○		○
	2nd	ON	ON	OFF	OFF	○	○					○		○		
	3rd	OFF	ON	OFF	OFF	○	○				○			○	○	
	4th	OFF	OFF	ON	OFF	○	○	○			○			○		
3	1st	ON	OFF	OFF	OFF	○	○							○		○
	2nd	ON	ON	OFF	OFF	○	○					○		○		
	3rd	OFF	ON	ON	OFF	○	○			○	○			○	○	
2	1st	ON	OFF	ON	OFF	○	○							○		○
	2nd	ON	ON	OFF	OFF	○	○					○		○		
L	1st	ON	OFF	OFF	OFF	○	○						○	○		○

○ : Operating

EXTENSION HOUSING OIL SEAL ON-VEHICLE REPAIR

AT05X-02

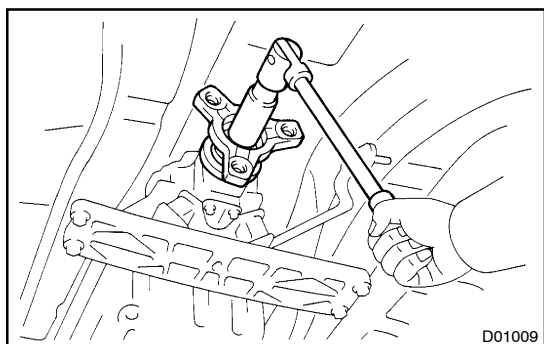
1. DRAIN ATF
2. REMOVE FRONT EXHAUST PIPE AND HEAT INSULATOR
(See page EM-93)
3. REMOVE PROPELLER SHAFT
(See page PR-4)



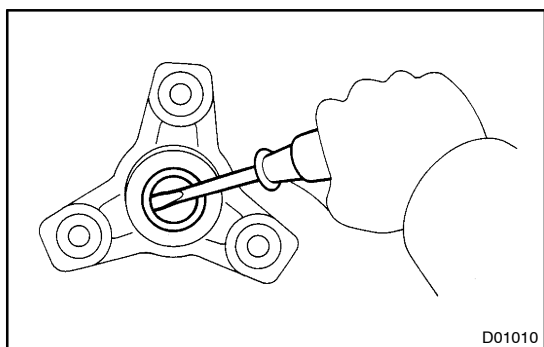
4. REMOVE TRANSMISSION OUTPUT FLANGE
 - (a) Using a chisel and hammer, loosen the staked part of the nut.

HINT:

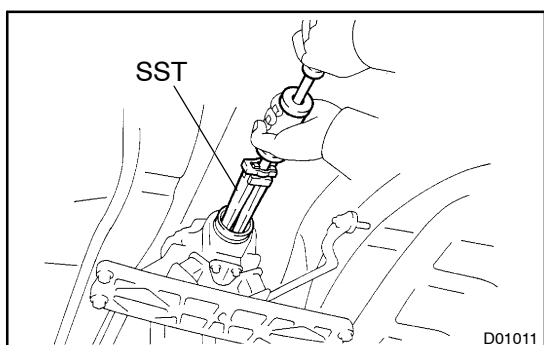
Shift the shift lever to the P range.



- (b) Using a 30mm deeper socket wrench, remove the nut.
 - (c) Tap the output flange with a plastic hammer to remove it.



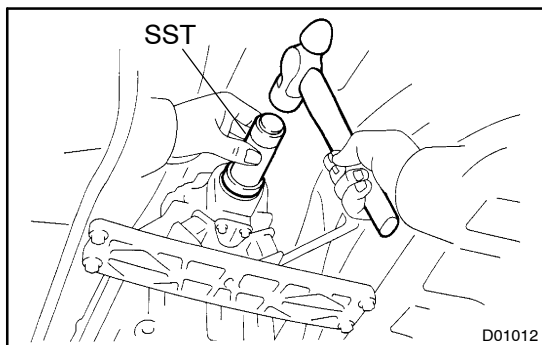
- (d) Using a screwdriver, remove the oil seal from the output flange.



5. REMOVE EXTENSION HOUSING REAR OIL SEAL

Using SST, remove the oil seal.

SST 09308-00010

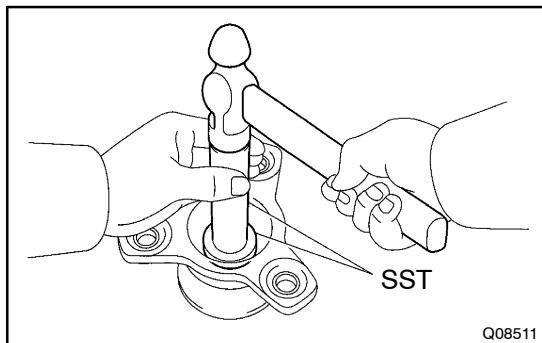


6. INSTALL EXTENSION HOUSING REAR OIL SEAL

- Coat the tip of a new oil seal with MP grease.
- Using SST and a hammer, drive in the oil seal.

SST 09309-37010

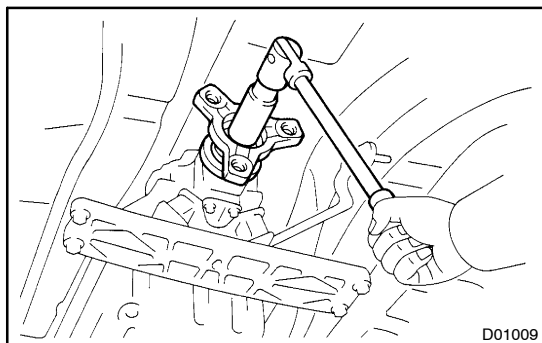
Oil seal depth from flat end: 2.0 mm (0.079 in.)



7. INSTALL TRANSMISSION OUTPUT FLANGE

- Using SST and a hammer, drive in a new oil seal.

SST 09950-60010 (09951-00350) 09950-70010 (09951-07100)



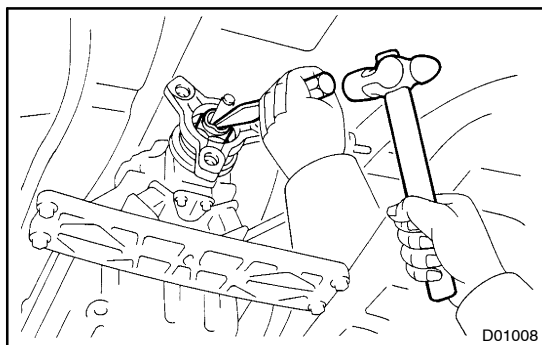
- Install the output flange.

- Using a 30 mm deeper socket wrench, install and torque a new nut.

Torque: 126 N·m (1,280 kgf·cm, 93 ft·lbf)

HINT:

Shift the shift lever to P range.



- Using a chisel and hammer, stake the nut.

8. INSTALL PROPELLER SHAFT

(See page PR-10)

9. INSTALL FRONT EXHAUST PIPE AND HEAT INSULATOR

(See page EM-93)

10. FILL FLUID AND CHECK FLUID LEVEL

(See page DI-144)

ATF TEMPERATURE SENSOR ON-VEHICLE REPAIR

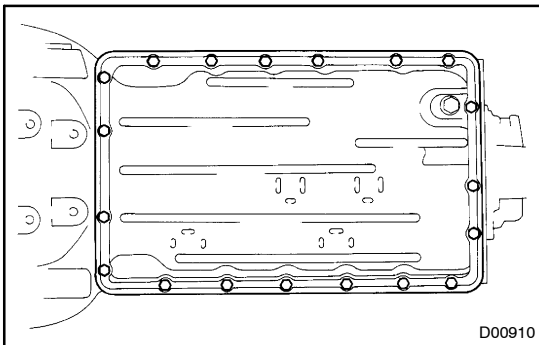
AT05Y-02

NOTICE:

When working with FIPG material, you must observe the following items.

- Using a razor blade and gasket scraper, remove all the old FIPG material from the gasket surfaces.
- Thoroughly clean all components to remove all the loose material.
- Clean both sealing surfaces with a non-residue solvent.
- Apply FIPG in an approx. 1 mm (0.04 in.) wide bead along the sealing surface.
- Parts must be assembled within 10 minutes of application. Otherwise, the FIPG material must be removed and reapplied.

1. REMOVE DRAIN PLUG WITH GASKET AND DRAIN ATF

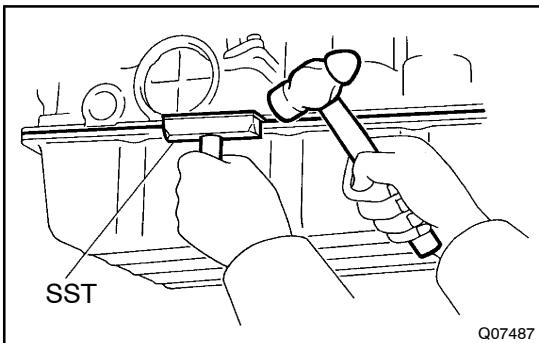


2. REMOVE OIL PAN

NOTICE:

Some fluid will remain in the oil pan.

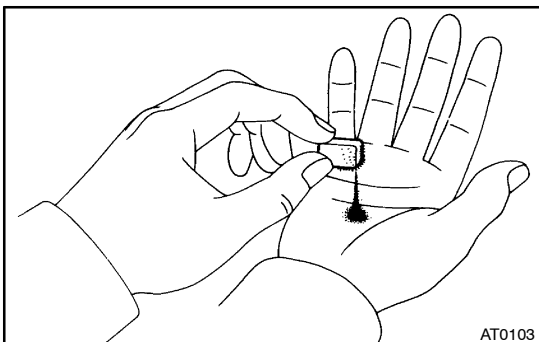
- (a) Remove the 19 bolts.



- (b) Install the blade of SST between the transmission case and oil pan, cut off applied sealer, and remove the oil pan.
SST 09032-00100

NOTICE:

When removing the oil pan, be careful not to damage the oil pan flange.

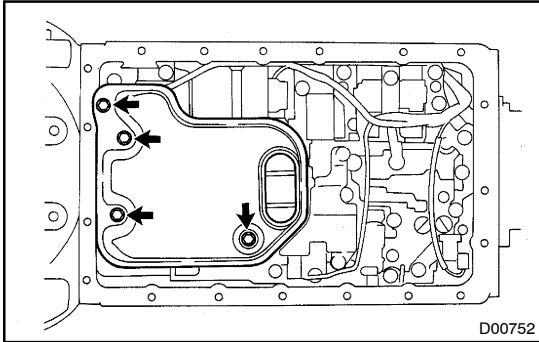


3. EXAMINE PARTICLES IN PAN

Remove the magnets and use them to collect steel particles. Carefully look at the foreign matter and particles in the pan and on the magnets to anticipate the type of wear you will find in the transmission.

Steel (magnetic) ... bearing, gear and clutch plate wear

Brass (non-magnetic) ... bushing wear

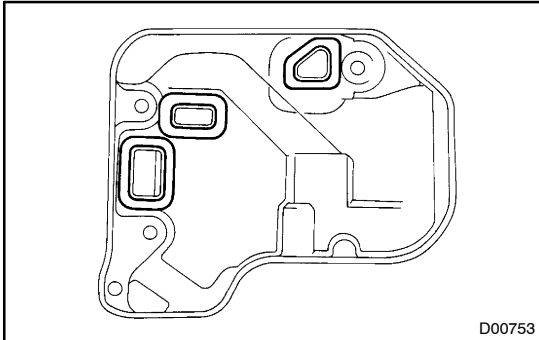


4. REMOVE OIL STRAINER

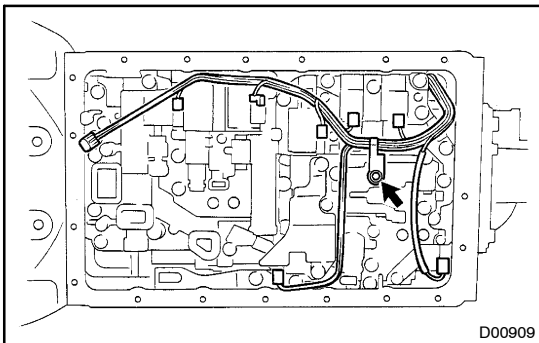
NOTICE:

Be careful as some fluid will come out of the oil strainer.

- (a) Remove the 4 bolts and oil strainer.

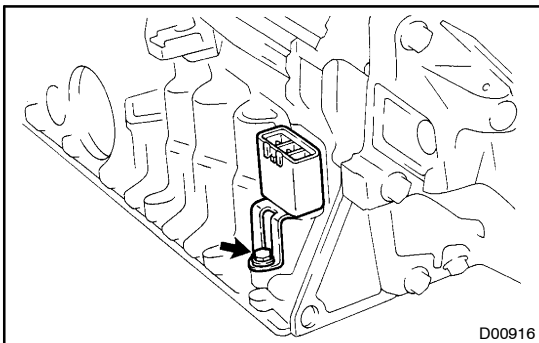


- (b) Remove the 3 gaskets from the oil strainer.



5. REMOVE SOLENOID WIRING WITH ATF TEMPERATURE SENSOR

- (a) Disconnect the ATF temperature sensor.
 (b) Remove the bolt and clamp.
 (c) Disconnect the 7 connectors from the solenoid valves.

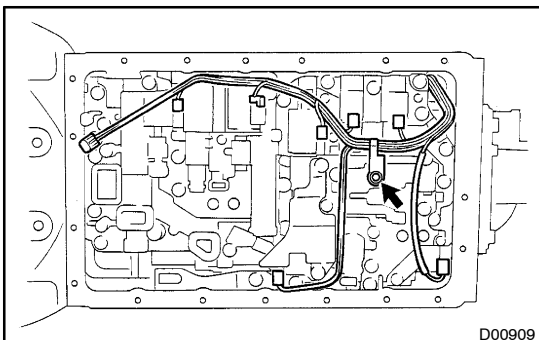


- (d) Remove the bolt and pull out the solenoid connector.

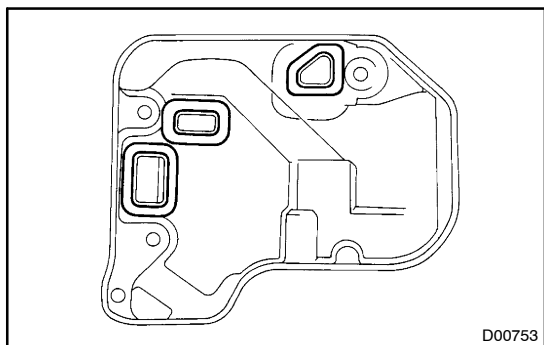
6. INSTALL SOLENOID WIRING WITH ATF TEMPERATURE SENSOR

- (a) Install the solenoid connector with the bolt.

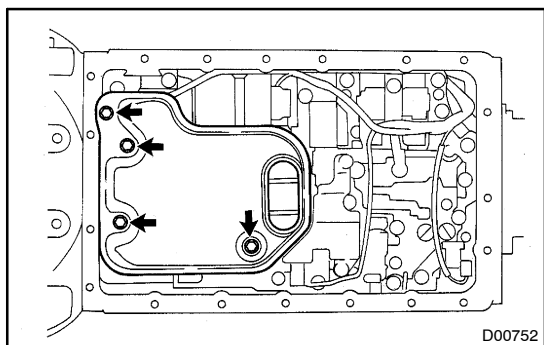
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)



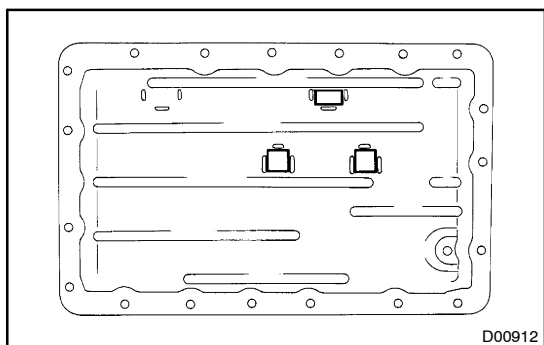
- (b) Connect the 7 connectors to the solenoid valves.
 (c) Install the clamp with the bolt.
Torque: 6.4 N·m (65 kgf·cm, 56 in·lbf)
 (d) Connect the ATF temperature sensor.

**7. INSTALL OIL STRAINER**

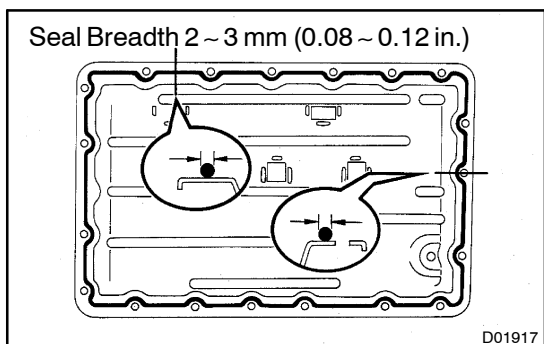
- (a) Install 3 new gaskets.



- (b) Install the oil strainer with the 4 bolts.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

**8. INSTALL OIL PAN**

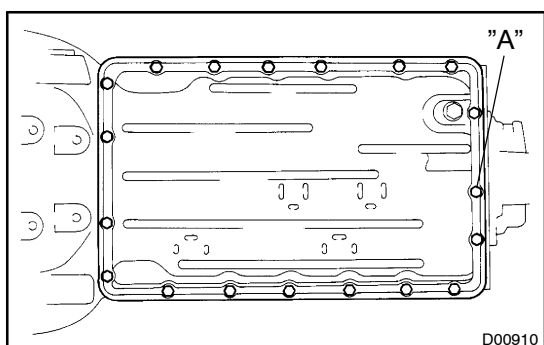
- (a) Install the 3 magnets in the indications of the oil pan.



- (b) Remove any packing material and be careful not to drop oil on the contacting surfaces of the transmission case and oil pan.
(c) Apply FIPG to the oil pan.

FIPG:

Part No. 08826 – 00090, THREE BOND 1281 or equivalent



- (d) Install the oil pan with the 19 bolts.
Torque: 7.4 N·m (75 kgf·cm, 65 in·lbf)

HINT:

Replace the only "A" bolt with a new one.

9. INSTALL DRAIN PLUG WITH NEW GASKET

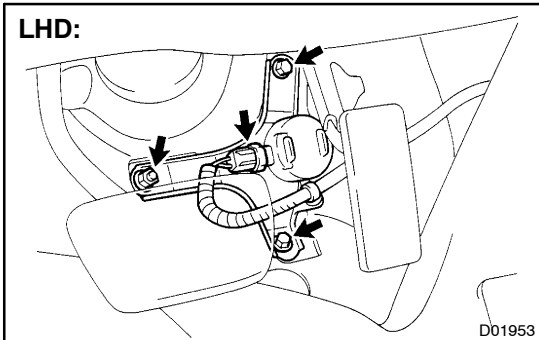
Torque: 20 N·m (205 kgf·cm, 15 ft·lbf)

10. FILL FLUID AND CHECK FLUID LEVEL

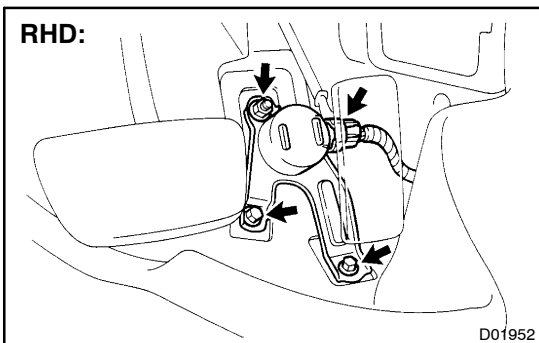
(See [page DI-144](#))

KICK-DOWN SWITCH ON-VEHICLE REPAIR

1. RHD:
REMOVE FRONT DOOR SCUFF PLATE
(See page BO-12)
2. PULL BACK FLOOR CARPET



3. REMOVE KICK-DOWN SWITCH
 - (a) Disconnect the kick-down switch connector.
 - (b) Remove the 2 bolts, nut and kick-down switch.
4. INSTALL KICK-DOWN SWITCH
 - (a) Install the 2 bolts, nut and kick-down switch.
 - (b) Connect the kick-down switch connector.



5. RETURN FLOOR CARPET
6. RHD:
INSTALL FRONT DOOR SCUFF PLATE
(See page BO-12)

VALVE BODY ASSEMBLY ON-VEHICLE REPAIR

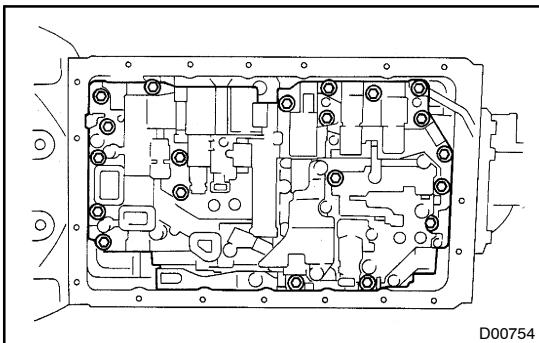
AT05Z-02

NOTICE:

When working with FIPG material, you must observe the following items.

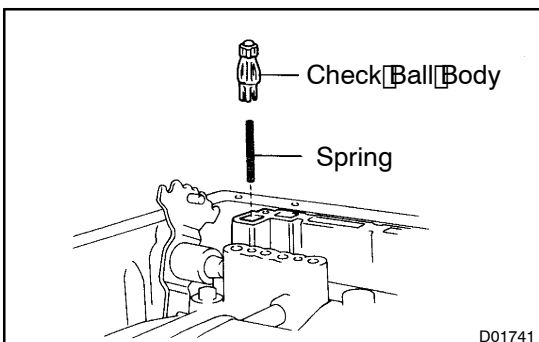
- Using a razor blade and gasket scraper, remove all the old FIPG material from the gasket surfaces.
- Thoroughly clean all components to remove all the loose material.
- Clean both sealing surfaces with a non-residue solvent.
- Apply FIPG in an approx. 1 mm (0.04 in.) wide bead along the sealing surface.
- Parts must be assembled within 10 minutes of application. Otherwise, the FIPG material must be removed and reapplied.

1. REMOVE DRAIN PLUG WITH GASKET AND DRAIN ATF
2. REMOVE OIL PAN
(See page AT-5)
3. EXAMINE PARTICLES IN PAN
(See page AT-5)
4. REMOVE OIL STRAINER
(See page AT-5)
5. REMOVE SOLENOID WIRING WITH ATF TEMPERATURE SENSOR
(See page AT-5)



6. REMOVE VALVE BODY

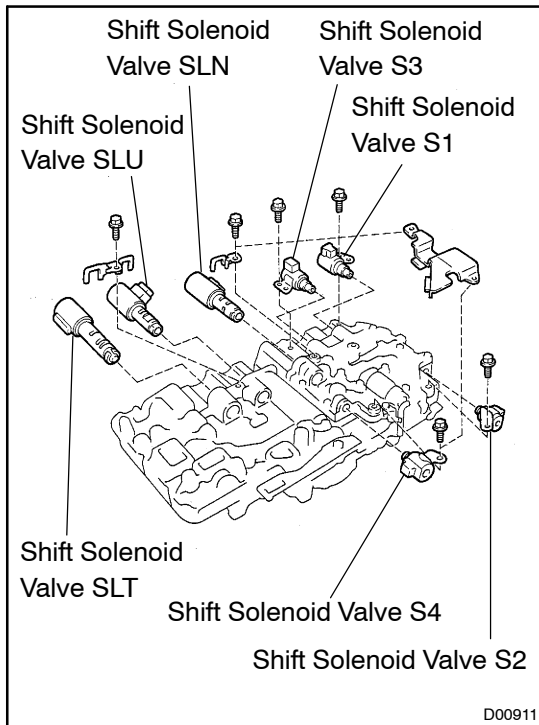
- (a) Remove the 21 bolts and valve body.



7. REMOVE CHECK BALL BODY AND SPRING

NOTICE:

Do not drop the check ball body and spring.

**8. REMOVE SOLENOID VALVE**

- (a) Remove the 3 bolts and shift solenoid valves No.1, No.2 and No.3.
- (b) Remove the 2 bolts, oil guide plate, lock plate, shift solenoid valves SLN and No.4.
- (c) Remove the 6 O-rings from each shift solenoid valve.
- (d) Remove the bolt, lock plate and shift solenoid valves SLU and SLT.

9. INSTALL SOLENOID VALVE

- (a) Install the shift solenoid valves SLU and SLT and the lock plate with the bolt.

Torque: 6.4 N·m (65 kgf·cm, 56 in.·lbf)

- (b) Coat 6 new O-rings with ATF.
- (c) Install the 6 O-rings to the each solenoid valve.
- (d) Install the shift solenoid valves SLN, No.4, lock plate and oil guide plate with the 2 bolts.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

- (e) Install the shift solenoid valves No.1, No.2 and No.3 with the 3 bolts.

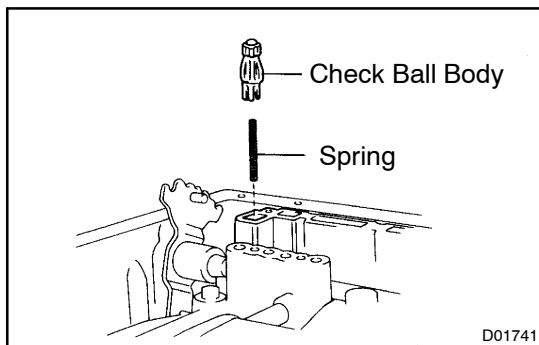
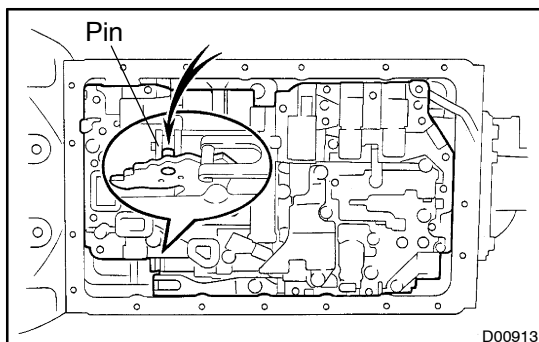
Torque:

Shift solenoid valve No.1 and No.3:

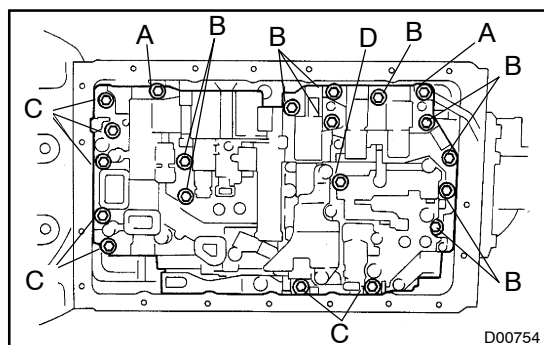
6.4 N·m (65 kgf·cm, 56 in.·lbf)

Shift solenoid valve No.2:

10 N·m (100 kgf·cm, 7 ft·lbf)

**10. INSTALL CHECK BALL BODY AND SPRING****11. INSTALL VALVE BODY**

- (a) Align the groove of the manual valve with pin of the lever.



(b) Install the 21 bolts.

Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Bolt length:

Bolt A: 23 mm (0.91 in.)

Bolt B: 28 mm (1.10 in.)

Bolt C: 36 mm (1.42 in.)

Bolt D: 55 mm (2.17 in.)

12. INSTALL SOLENOID WIRING WITH ATF TEMPERATURE SENSOR

(See page AT-5)

13. INSTALL OIL STRAINER

(See page AT-5)

14. INSTALL OIL PAN

(See page AT-5)

15. INSTALL DRAIN PLUG WITH NEW GASKET

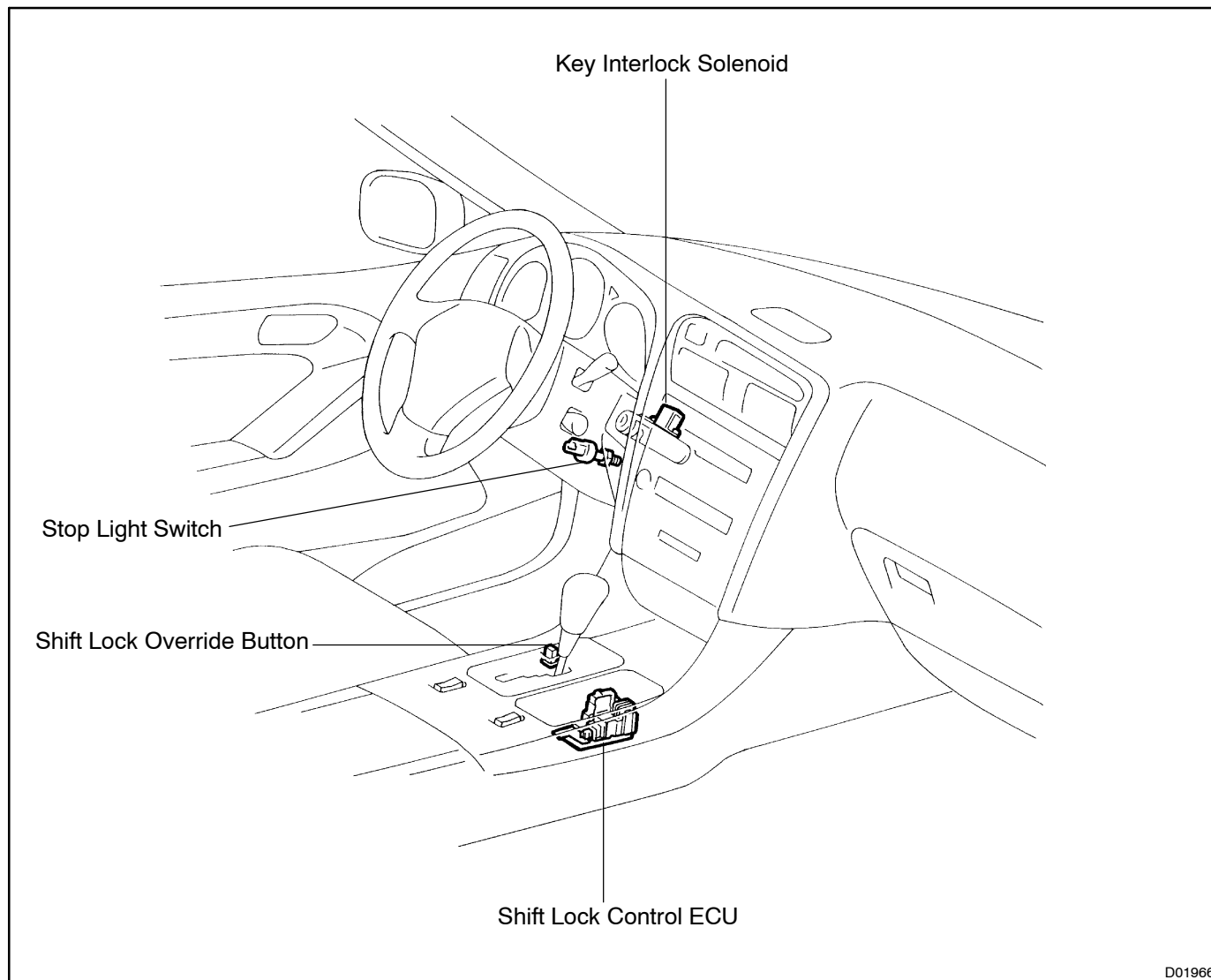
Torque: 20 N·m (205 kgf·cm, 15 ft·lbf)

16. FILL FLUID AND CHECK FLUID LEVEL

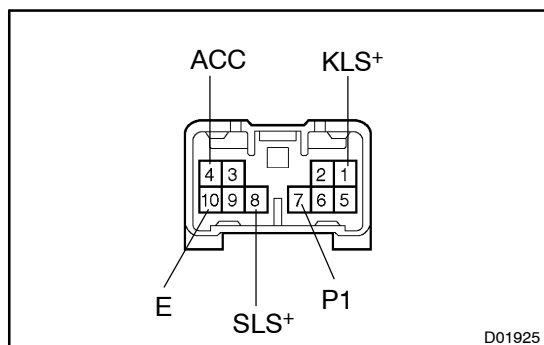
(See page DI-14)

SHIFT LOCK SYSTEM LOCATION

AT060-02



D01966



INSPECTION

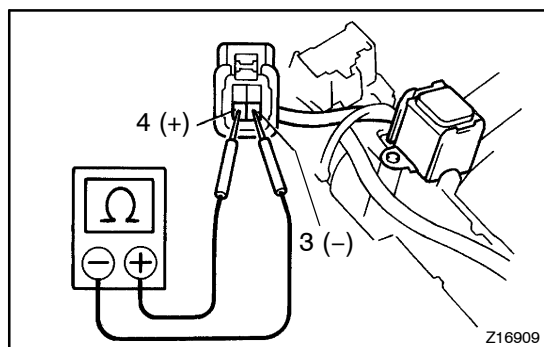
1. INSPECT SHIFT LOCK CONTROL ECU

Using a voltmeter, measure the voltage at each terminal.

HINT:

Do not disconnect the ECU connector.

Terminal	Measuring Condition	Specified Condition
1 – 10 (KLS ⁺ – E)	(1) IG SW ACC and shift lever P range	0 V
	(2) IG SW ACC and shift lever except P range	7.5 – 11V (about 1 second) after 6 – 9 V
4 – 10 (ACC – E)	(1) IG SW ON	10 – 14 V
	(2) IG SW ACC	10 – 14 V
7 – 10 (P1 – E)	(1) Shift lever P range	0 V
	(2) Shift lever except P range	10 – 14 V
8 – 10 (SLS ⁺ – E)	(1) IG SW ON and shift lever P range	0 V
	(2) IG SW ON and depress brake pedal and shift lever P range	3 – 6 V
	(3) IG SW ON, shift lever N range and vehicle speed less than 11 km/h (6.8 mph)	3 – 6 V
	(4) IG SW ON and shift lever except P or N range	0 V
	(5) IG SW ACC and shift lever except P range	3 – 6 V
10 – Ground (E – Ground)	Constant	Continuity

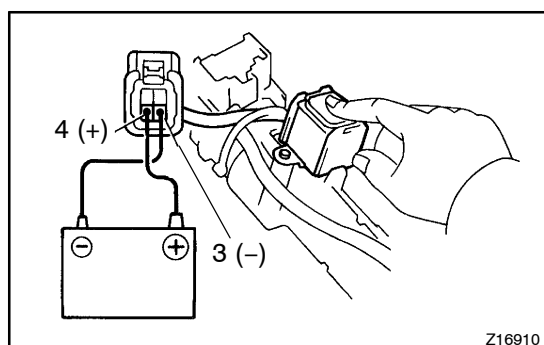


2. INSPECT KEY INTERLOCK SOLENOID

- Disconnect the solenoid connector.
- Using an ohmmeter, measure the resistance between terminals 3 and 4.

Standard resistance: 12 – 17 Ω

If the resistance value is not as specified, replace the solenoid.

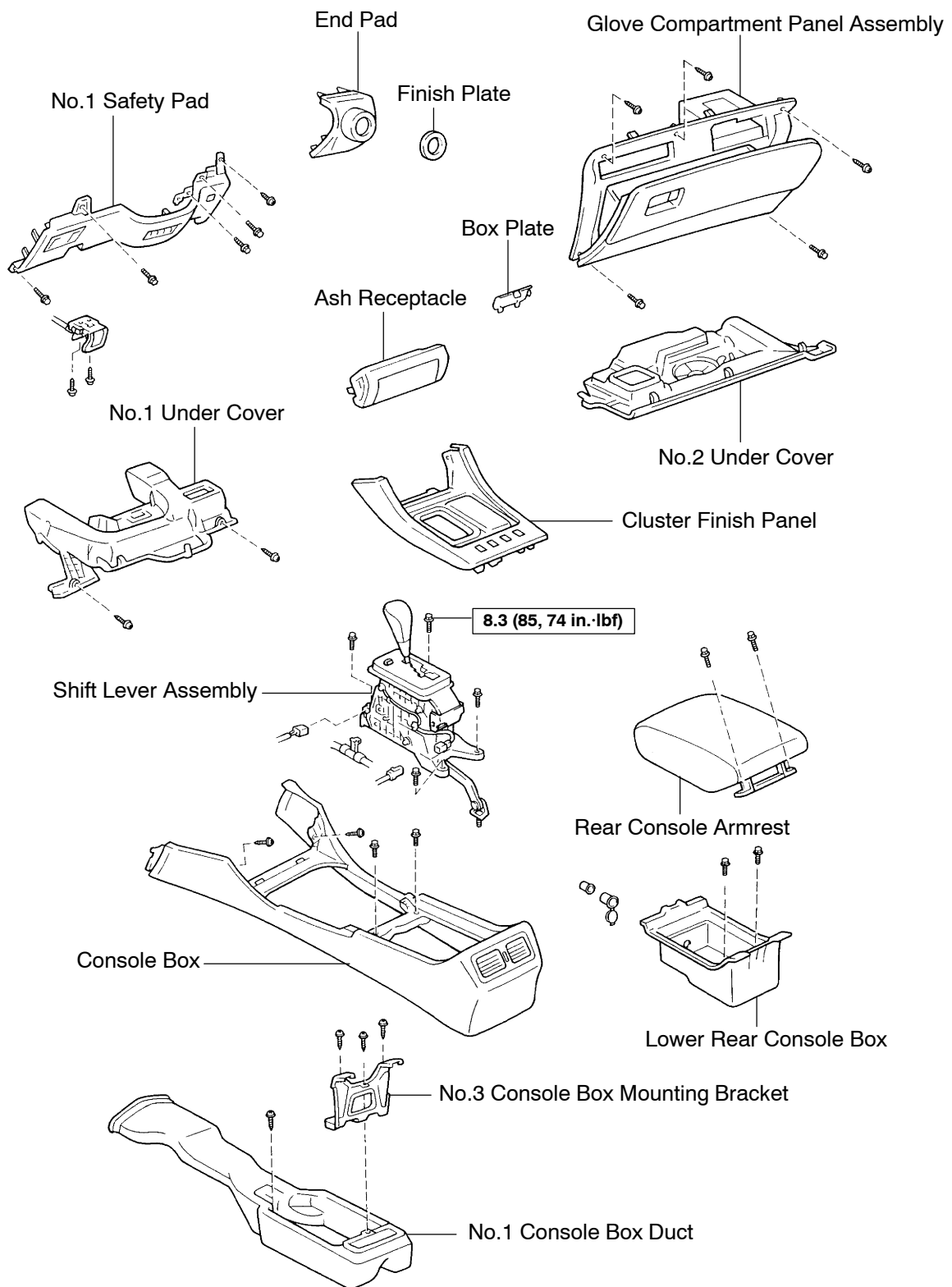


- Touch the solenoid with your finger and check that the solenoid operation can be felt when battery voltage is applied intermittently to terminals 3 and 4.

If the operation is not as specified, replace the solenoid.

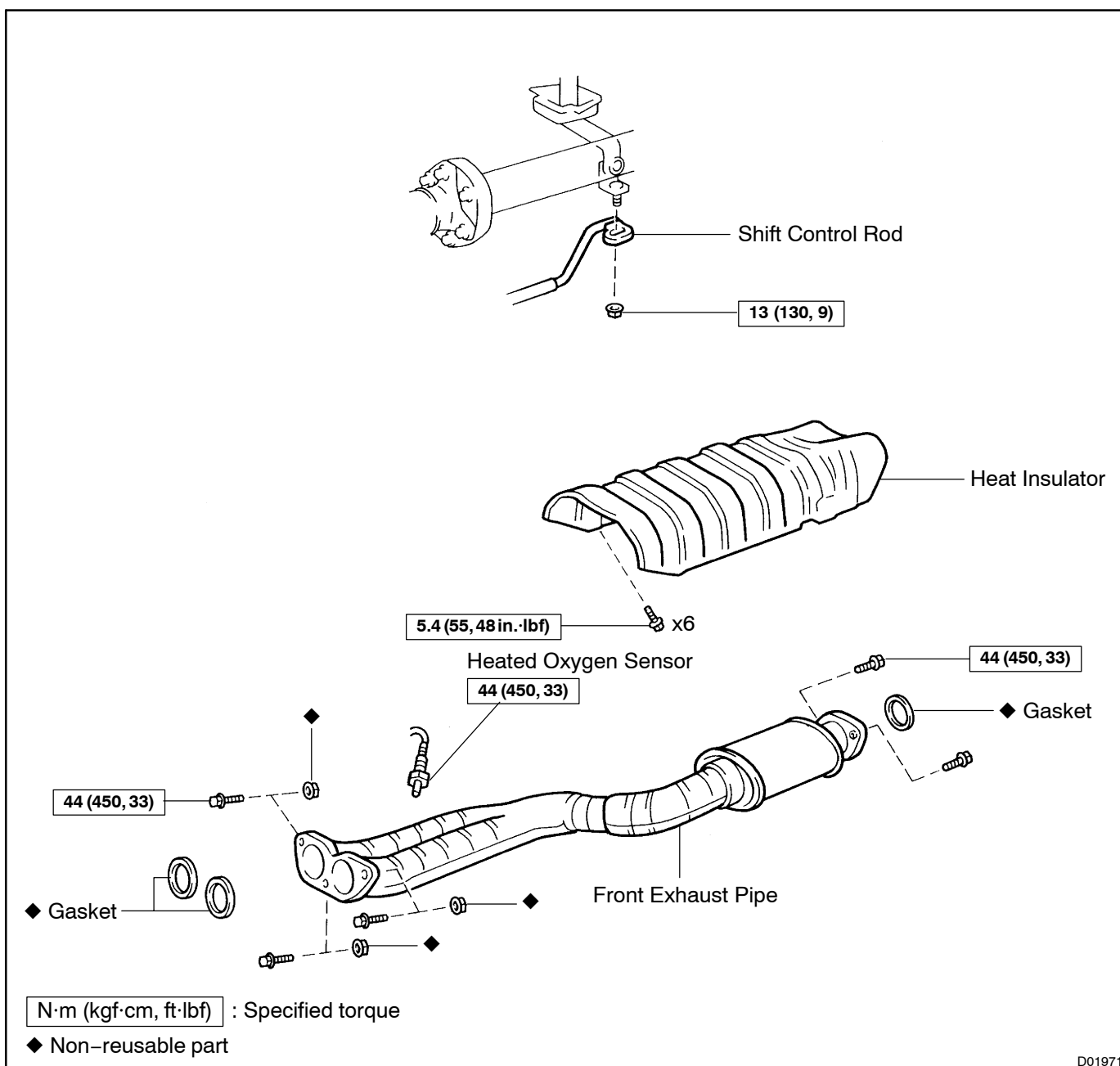
FLOOR SHIFT ASSEMBLY COMPONENTS

AT062-02

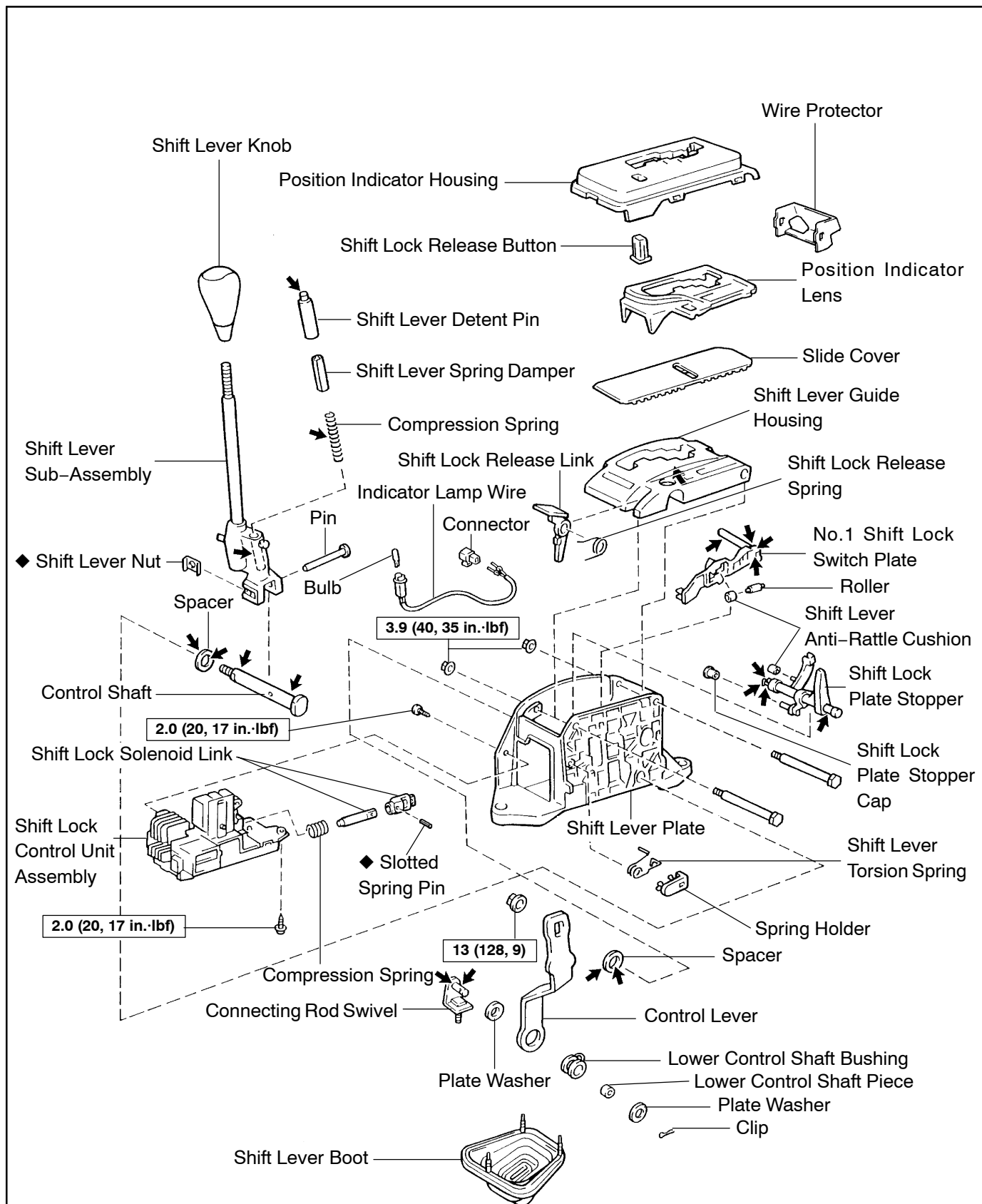


N·m (kgf·cm, ft·lbf) : Specified torque

D01967



D01971



N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

➡ : MP grease

LEXUS GS300 (RM588E)

D01968

REMOVAL

1. RAISE VEHICLE

NOTICE:

Make sure that the vehicle is securely supported.

2. REMOVE FRONT EXHAUST PIPE

(See page EM-93)

3. REMOVE HEAT INSULATOR

Remove the 6 bolts and heat insulator.

Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)

4. DISCONNECT SHIFT CONTROL ROD

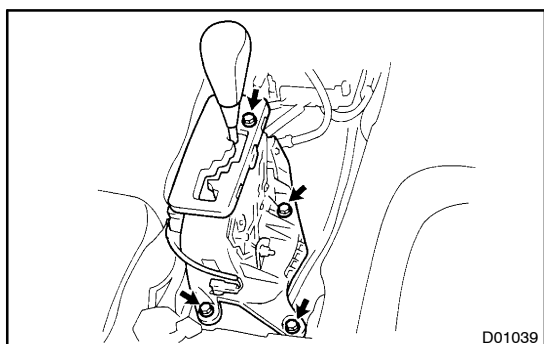
(See page AT-29)

5. LOWER VEHICLE

6. REMOVE THESE PARTS:

(See page BO-88)

- Groove compartment panel assembly
- Box plate
- No.2 under cover
- No.1 safety pad
- No.1 under cover
- Cluster finish panel
- Lower rear console box
- Console box and rear console armrest
- No.3 console box mounting bracket
- Ash receptacle
- No.1 console box duct
- Finish plate
- End pad



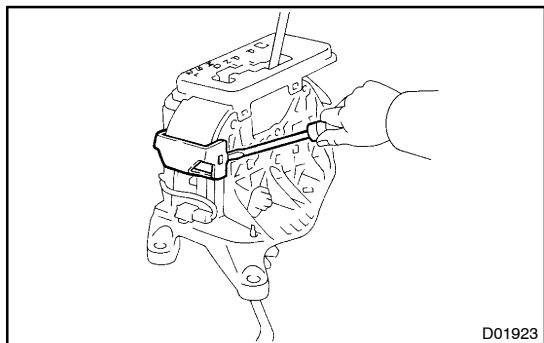
7. REMOVE SHIFT LEVER ASSEMBLY

- (a) Disconnect the connectors and wire harness from the shift lever assembly.
- (b) Remove the 4 bolts and shift lever assembly.

Torque: 8.3 N·m (85 kgf·cm, 74 in·lbf)

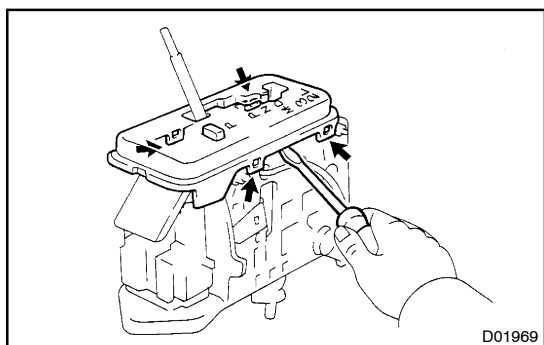
DISASSEMBLY

1. REMOVE SHIFT LEVER KNOB



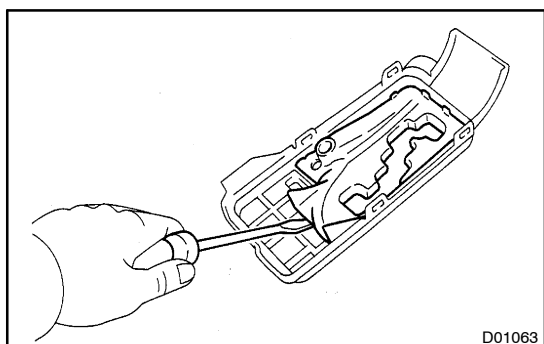
2. REMOVE WIRE PROTECTOR

Using a screwdriver, remove the wire protector.



3. REMOVE POSITION INDICATOR HOUSING

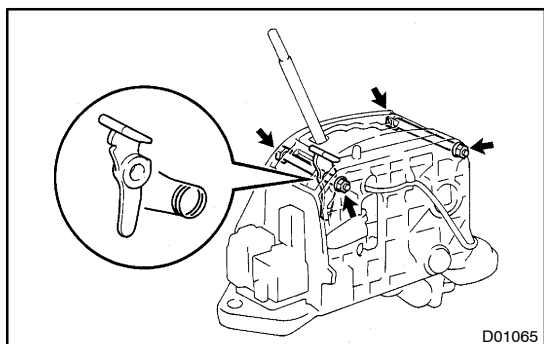
- (a) Using a screwdriver, remove the position indicator housing.
- (b) Remove the shift lock release button from the position indicator housing.



4. REMOVE POSITION INDICATOR LENS

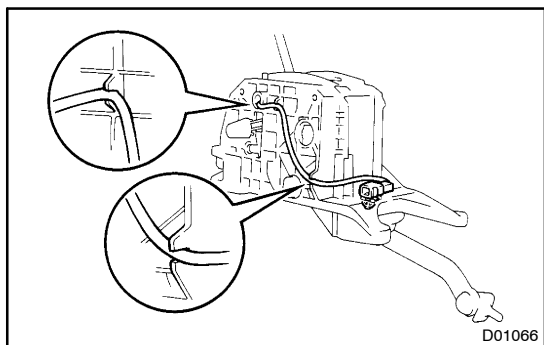
Using a screwdriver, remove the position indicator lens from the position indicator housing.

5. REMOVE SLIDE COVER



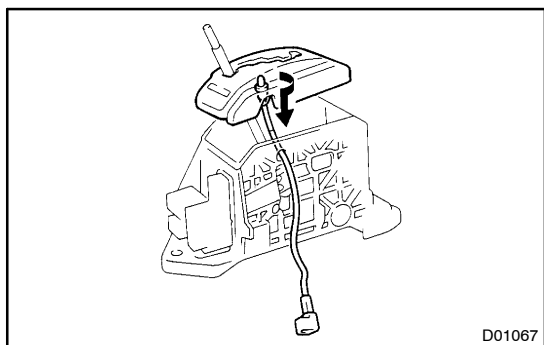
6. REMOVE SHIFT LOCK RELEASE LINK AND SPRING

- (a) Remove the 2 shift lever housing set bolts and nuts with the shift lock release link and spring.
- (b) Using a screwdriver, separate the shift lock release spring from the shift lock release link.

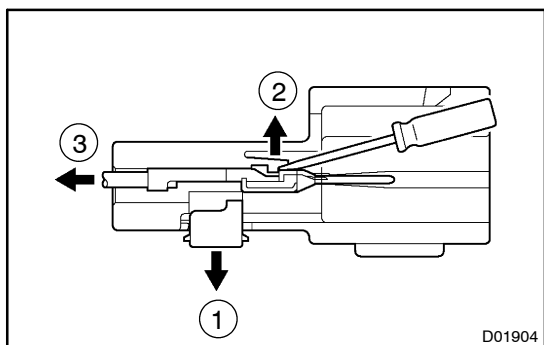


7. REMOVE SHIFT LEVER GUIDE HOUSING AND INDICATOR LAMP SUB-ASSEMBLY

- (a) Disconnect the indicator lamp wire and connector from the shift lever plate.

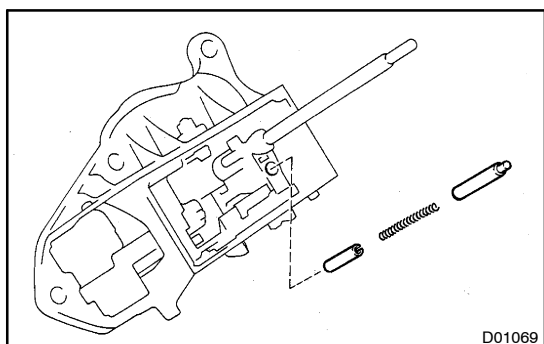


- (b) Remove the shift lever guide housing with the indicator lamp sub-assembly from the shift lever plate.
- (c) Remove the indicator lamp sub-assembly from the shift lever guide housing.

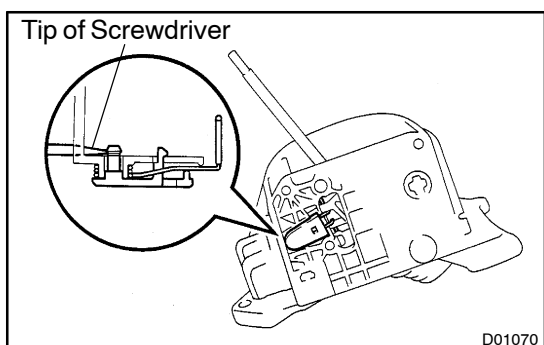


8. DISASSEMBLE INDICATOR LAMP SUB-ASSEMBLY

- (a) Remove the bulb from the indicator lamp wire sub-assembly.
- (b) Using a small screwdriver, remove the terminals of the indicator lamp wire sub-assembly from the connector, as shown in the illustration.

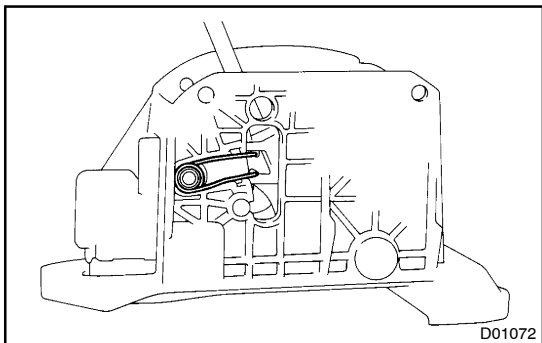


9. REMOVE SHIFT LEVER DETENT PIN, SHIFT LEVER SPRING DAMPER AND COMPRESSION SPRING FROM SHIFT LEVER SUB-ASSEMBLY

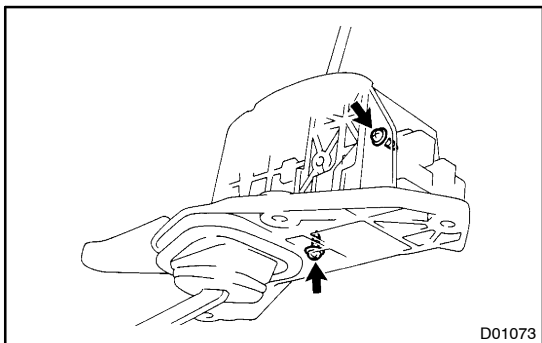


10. REMOVE SPRING HOLDER AND SHIFT LEVER TORSION SPRING

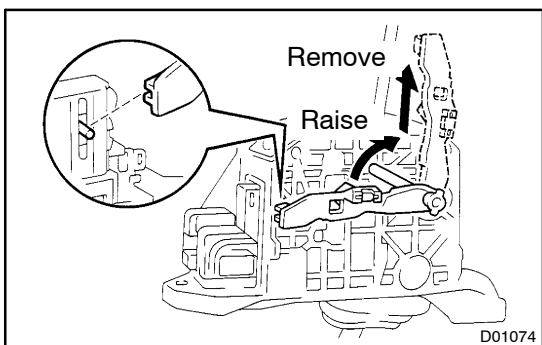
- (a) Using a screwdriver, remove the spring holder.



- (b) Remove the shift lever torsion spring.

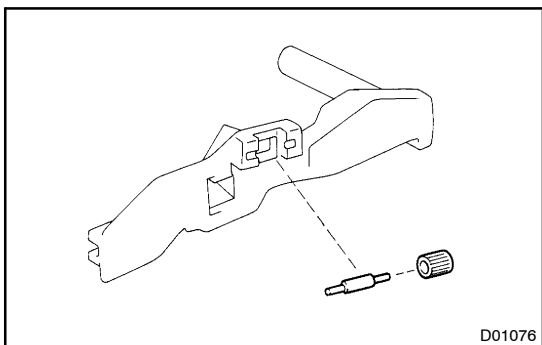


11. REMOVE 2 SHIFT LOCK CONTROL UNIT ASSEMBLY SET SCREWS

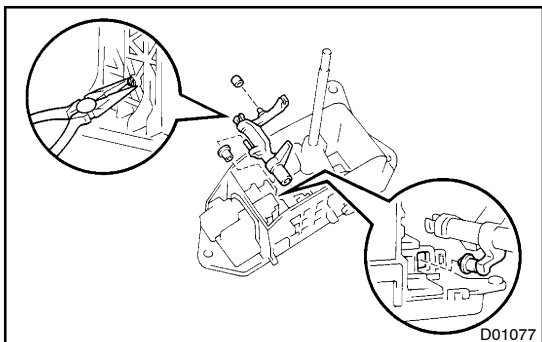


12. REMOVE NO.1 SHIFT LOCK SWITCH PLATE

- (a) Disconnect the groove of the No.1 shift lock switch plate from the projection of the shift lock control unit.
- (b) Raise the plate up to the direction shown in the illustration.
- (c) Remove the plate.

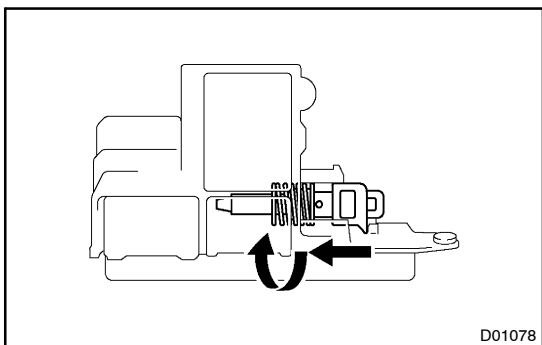


- (d) Remove the roller and shift lever anti-rattle cushion from the plate.
- (e) Separate the shift lever anti-rattle cushion from the roller.

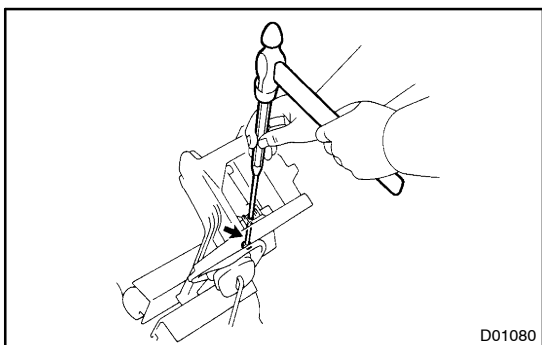


13. REMOVE SHIFT LOCK PLATE STOPPER

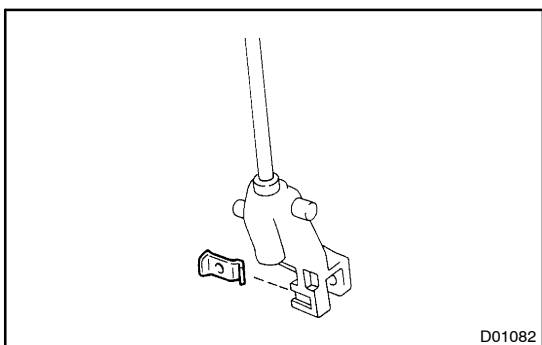
- (a) Using pliers, remove the stopper.
- (b) Remove the shift lever anti-rattle cushion and shift lock plate stopper cap from the stopper.

**14. REMOVE SHIFT LOCK CONTROL UNIT ASSEMBLY**

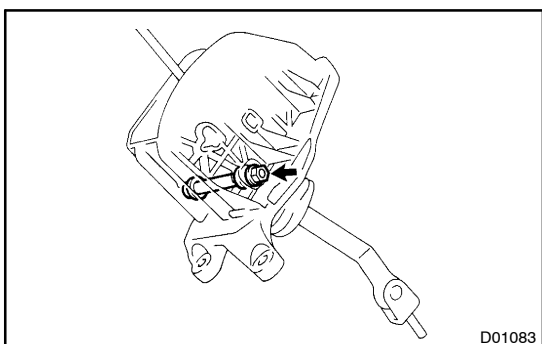
- (a) Remove the shift lock control unit assembly from the shift lever plate.
- (b) Push the shift lock solenoid link lightly, turn and remove it.
- (c) Remove the compression spring.
- (d) Remove the slotted spring pin and separate the shift lock solenoid link.

**15. REMOVE SHIFT LEVER SUB-ASSEMBLY**

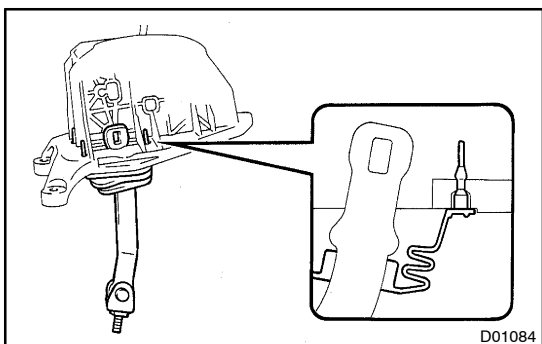
- (a) Using a pin punch and hammer, drive out the pin.
- (b) Remove the shift lever sub-assembly.



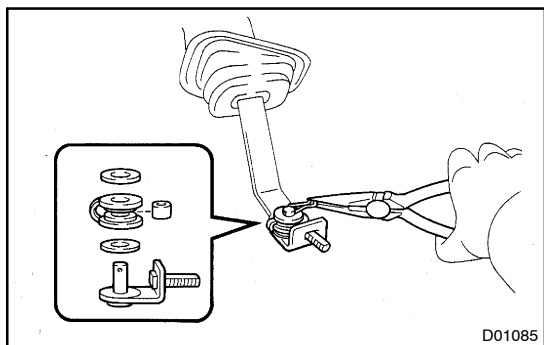
- (c) Remove the shift lever nut from the shift lever sub-assembly.

**16. REMOVE CONTROL LEVER, SPACER AND CONTROL SHAFT**

- (a) Remove the nut.
- (b) Remove the 2 spacers and control shaft from the shift lever plate.



- (c) Disconnect the shift lever boot from shift lever plate.
- (d) Remove the control lever.



17. REMOVE CLIP, CONNECTING ROD SWIVEL, LOWER CONTROL SHAFT BUSHING, LOWER CONTROL SHAFT PIECE, PLATE WASHER AND SHIFT LEVER BOOT FROM CONTROL LEVER

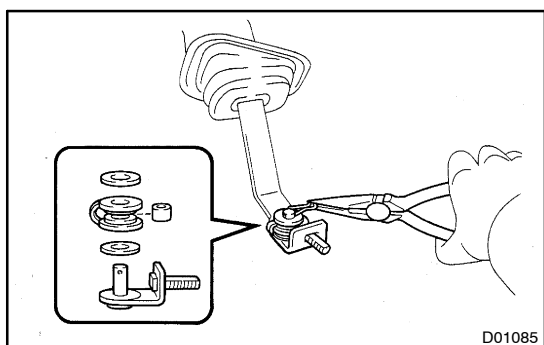
- (a) Using pliers, remove the clip.
- (b) Remove the connecting rod swivel, lower control shaft bushing, lower control shaft piece, 2 plate washers and shift lever boot from the control lever.

REASSEMBLY

HINT:

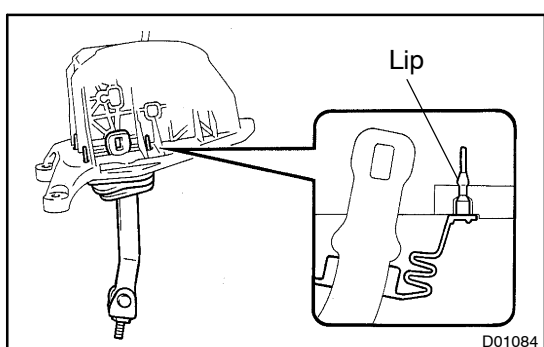
Before reassembly, apply MP grease to the parts indicated by arrows.

(See page AT-14)



1. INSTALL CLIP, CONNECTING ROD SWIVEL, LOWER CONTROL SHAFT BUSHING, LOWER CONTROL SHAFT PIECE, PLATE WASHER AND SHIFT LEVER BOOT TO CONTROL LEVER

- (a) Install the shift lever boot, 2 plate washers, lower control shaft piece, lower control shaft bushing and connecting rod swivel to the control lever.
- (b) Using pliers, install the clip.

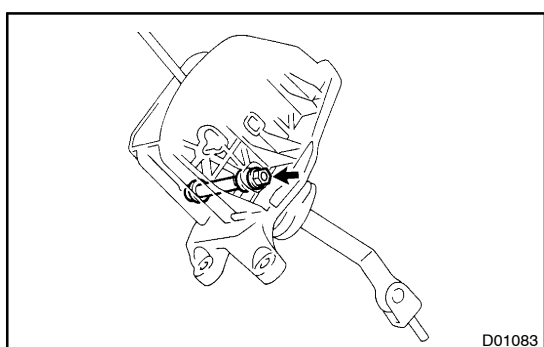


2. INSTALL CONTROL LEVER, SPACER AND CONTROL SHAFT

- (a) Connect the shift lever boot to the shift lever plate.

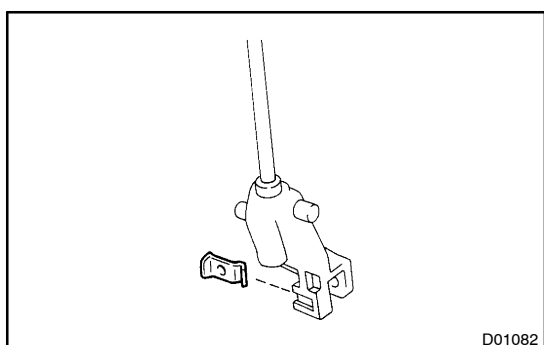
HINT:

Pull out the 3 lips of the shift lever boot securely, as shown in the illustration.



- (b) Install the control shaft and 2 spacers.
- (c) Install and torque the nut.

Torque: 13 N·m (128 kgf·cm, 9 ft·lbf)

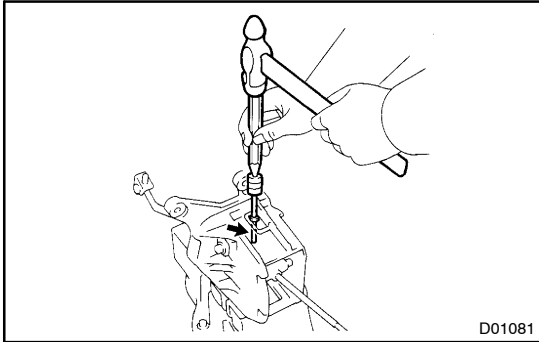


3. INSTALL SHIFT LEVER SUB-ASSEMBLY

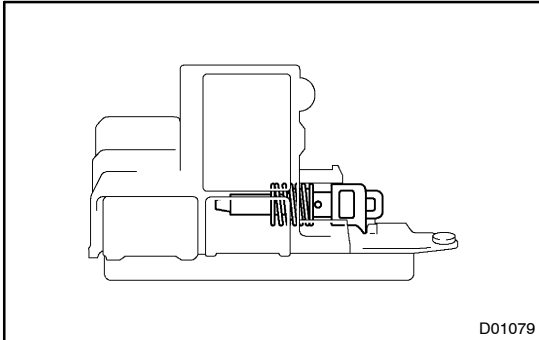
- (a) Install a new shift lever nut to the shift lever sub-assembly.

HINT:

Insert the shift lever nut securely until it fits and check there is no looseness.



- (b) Install the shift lever sub-assembly.
- (c) Using a pin punch and hammer, drive in the pin.

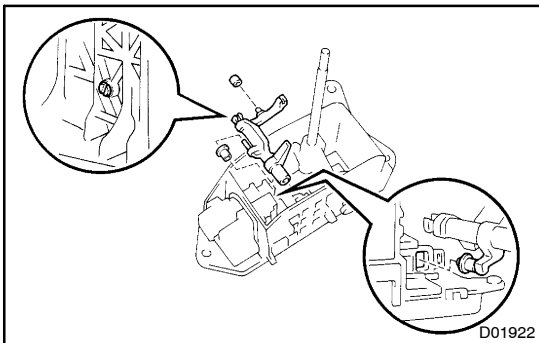


4. INSTALL SHIFT LOCK CONTROL UNIT ASSEMBLY

- (a) Connect the shift lock solenoid link and install a new slotted spring pin.
- (b) Install the compression spring to the shift lock solenoid link.
- (c) Push and install the shift lock solenoid link with the compression spring to the shift lock control unit assembly.
- (d) Install the shift lock control unit assembly.

HINT:

Do not torque the shift lock control unit assembly set screws.

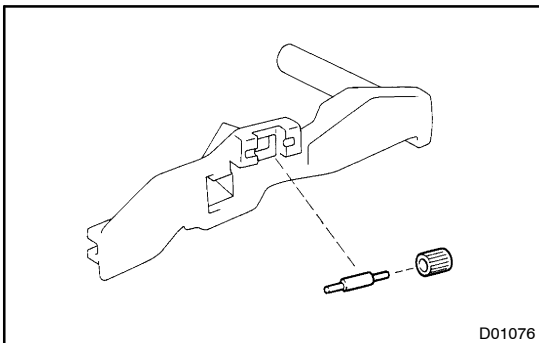


5. INSTALL SHIFT LOCK PLATE STOPPER

- (a) Install the shift lever anti-rattle cushion and shift lock plate stopper cap to the stopper.
- (b) Install the stopper to the shift lever plate.

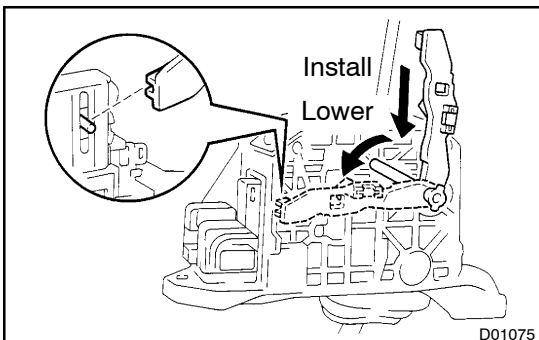
HINT:

- Check that the claw of the shift lock plate stopper firmly fits in and slides smoothly.
- Insert and connect the projection of the shift lock plate stopper into the square hole of the shift lock control unit assembly.



6. INSTALL NO.1 SHIFT LOCK SWITCH PLATE

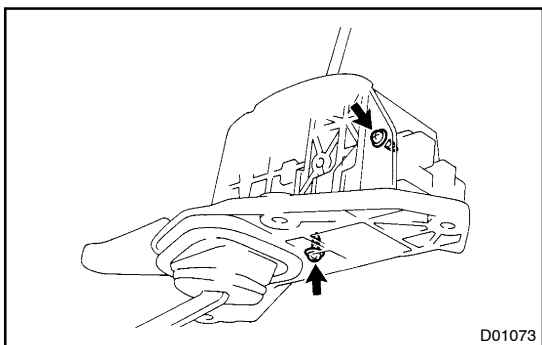
- (a) Install the shift lever anti-rattle cushion to the roller.
- (b) Install the roller and shift lever anti-rattle cushion to the plate.



- (c) Install the No.1 shift lock switch plate in the direction shown in the illustration and lower to the direction shown by an arrow.

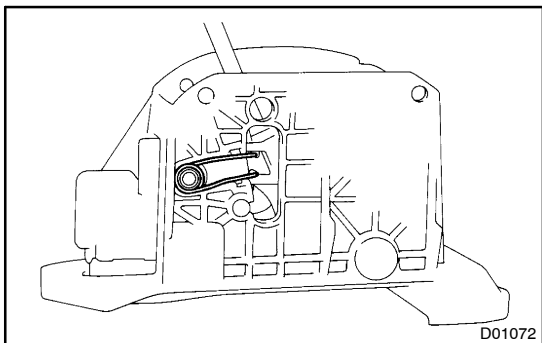
HINT:

Connect the groove of the No.1 shift lock switch plate to the projection of the shift lock control unit assembly.



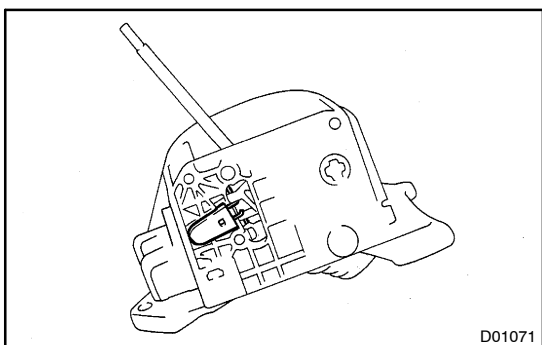
7. INSTALL AND TORQUE 2 SHIFT LOCK CONTROL UNIT ASSEMBLY SET SCREWS

Torque: 2.0 N·m (20 kgf·cm, 17 in.·lbf)

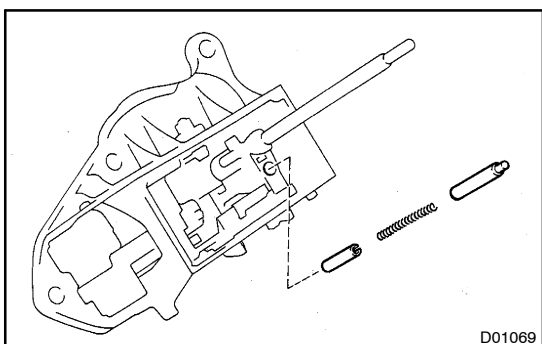


8. INSTALL SPRING HOLDER AND SHIFT LEVER TORSION SPRING

(a) Install the shift lever torsion spring.



(b) Install the spring holder.

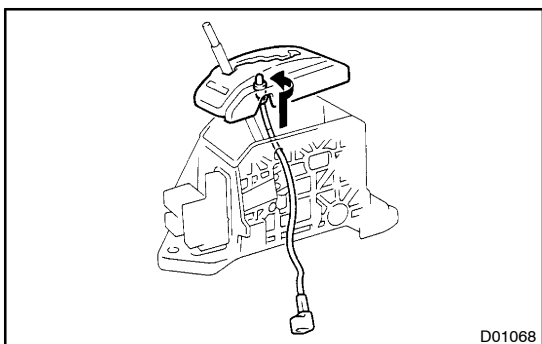


9. INSTALL SHIFT LEVER DETENT PIN, SHIFT LEVER SPRING DAMPER AND COMPRESSION SPRING TO SHIFT LEVER SUB-ASSEMBLY

10. ASSEMBLE INDICATOR LAMP SUB-ASSEMBLY

(a) Install the terminals of the indicator lamp wire sub-assembly to the connector.

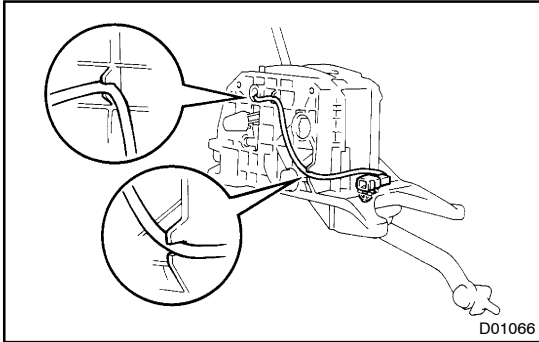
(b) Install the bulb to the indicator lamp wire sub-assembly.



11. INSTALL SHIFT LEVER GUIDE HOUSING AND INDICATOR LAMP SUB-ASSEMBLY

(a) Install the indicator lamp sub-assembly to the shift lever guide housing.

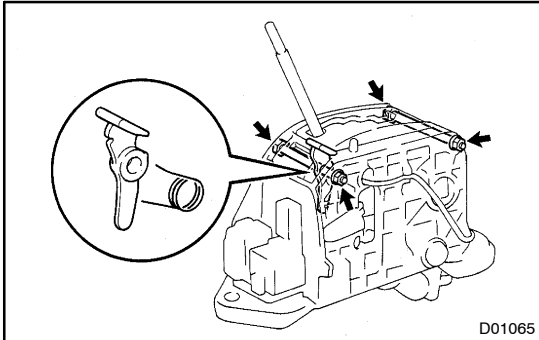
(b) Install the shift lever housing with the indicator lamp sub-assembly to the shift lever plate.



- (c) Connect the indicator lamp wire sub-assembly to the shift lever plate.

HINT:

Hook the indicator lamp wire sub-assembly securely on the retainer of the shift lock plate.

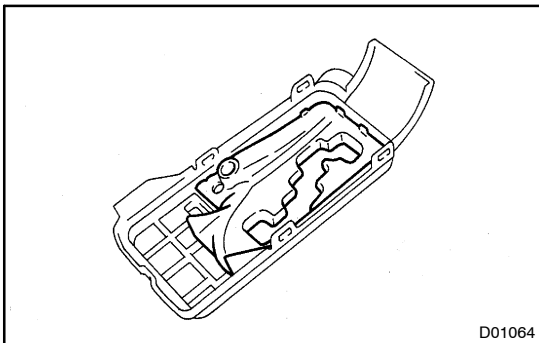


12. INSTALL SHIFT LOCK RELEASE LINK AND SPRING

- (a) Install the shift lock release spring to the shift lock release link.
 (b) Install the 2 shift lever housing set bolts, nuts, shift lock release link and spring.
 (c) Torque the 2 nuts.

Torque: 3.9 N·m (40 kgf·cm, 35 in.-lbf)

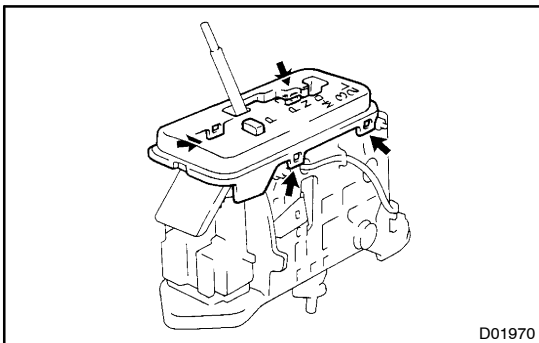
13. INSTALL SLIDE COVER



14. INSTALL POSITION INDICATOR LENS TO POSITION INDICATOR HOUSING

HINT:

Fit the 4 claws of the position indicator lens in the grooves of the position indicator housing securely.

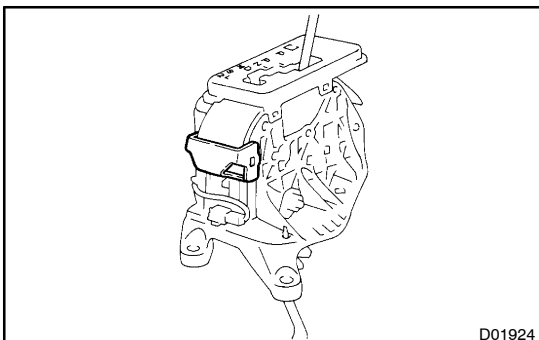


15. INSTALL POSITION INDICATOR HOUSING

- (a) Install the shift lock release button to the position indicator housing.
 (b) Install the position indicator housing to the shift lever plate.

HINT:

Fit the 4 clips of the position indicator housing in the shift lever plate securely.



16. INSTALL WIRE PROTECTOR TO SHIFT LEVER PLATE

17. INSTALL SHIFT LEVER KNOB

INSTALLATION

Installation is in the reverse order of removal.

(See page AT-17)

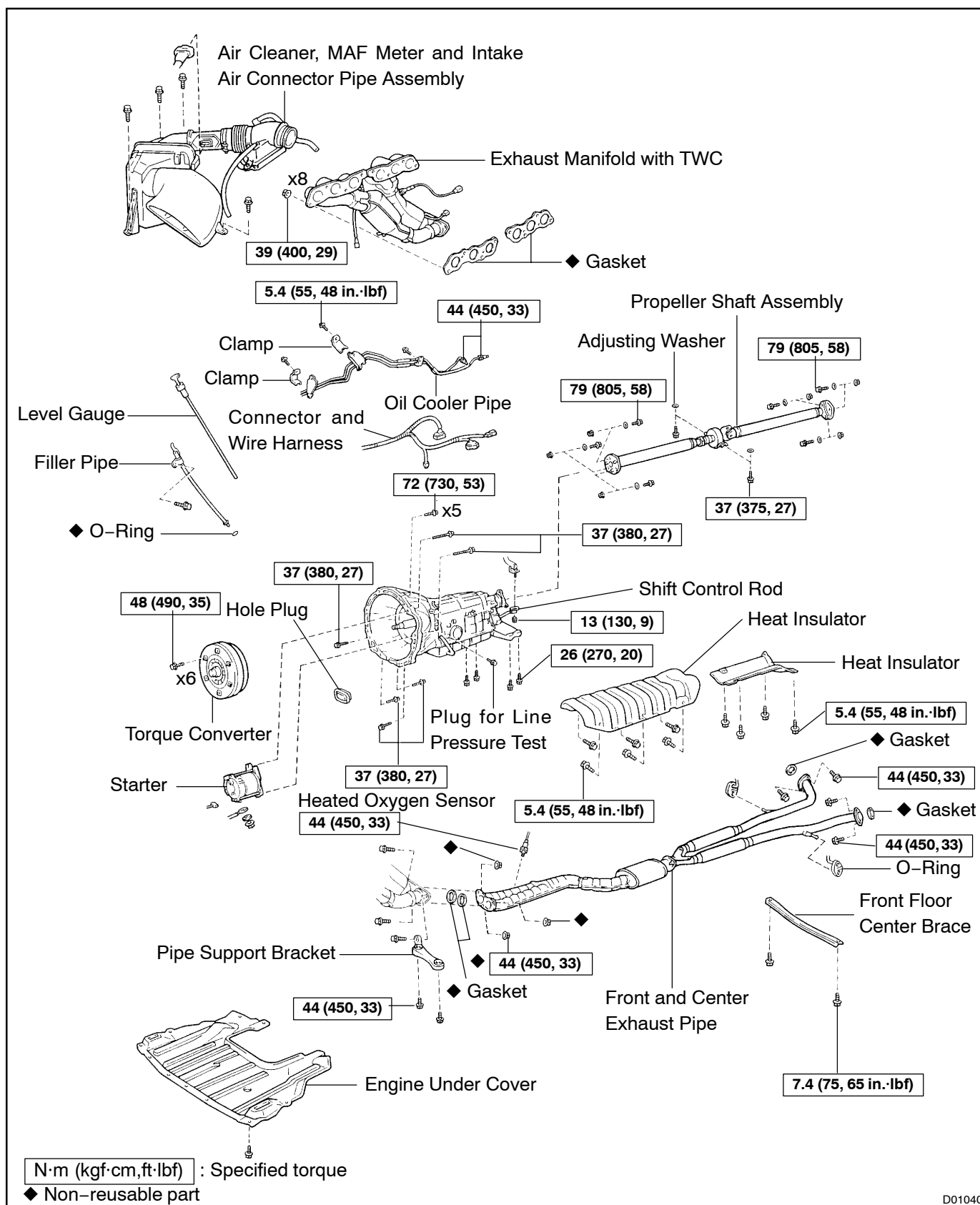
HINT:

After installation, inspect the shift lever range.

- When shifting from P to R range only with ignition switch ON and brake pedal, make sure that the shifting lever moves smoothly and can be moderately operated.
- When starting engine, make sure that the vehicle moves forward when shifting from N to D range and moves rearward when shifting to R range.

AUTOMATIC TRANSMISSION UNIT COMPONENTS

AT06X-01



D01040

REMOVAL

1. REMOVE LEVEL GAUGE

2. REMOVE FILLER PIPE

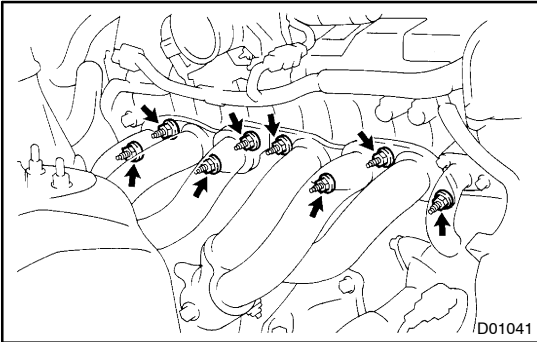
Remove the bolt and filler pipe with the O-ring.

HINT:

At the time of installation, please refer to the following item.

Replace the used O-ring with a new one.

3. REMOVE AIR CLEANER, MAF METER AND INTAKE AIR CONNECTOR PIPE ASSEMBLY



4. REMOVE EXHAUST MANIFOLD WITH TWC

Remove the 8 nuts, 2 gaskets and exhaust manifold with the TWC.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

HINT:

At the time of installation, please refer to the following item.

Replace the used gaskets with new ones.

5. RAISE VEHICLE

NOTICE:

Make sure that the vehicle is securely supported.

6. REMOVE ENGINE UNDER COVER

7. REMOVE FRONT AND CENTER EXHAUST PIPE

(a) Disconnect the heated oxygen sensor.

Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)

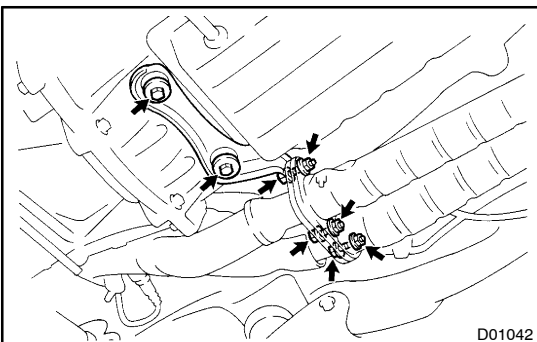
HINT:

At the time of installation, please refer to the following items.

- Before installing the heated oxygen sensor, twist the sensor wire counterclockwise 3 and 1/2 turns.
- After installing the heated oxygen sensor wire should not twist. If it is twisted, remove the heated oxygen sensor and reinstall it.

(b) Remove the 2 bolts and front floor center brace.

Torque: 7.4 N·m (75 kgf·cm, 65 in·lbf)



(c) Remove the 3 bolts, nuts and 2 gaskets.

Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)

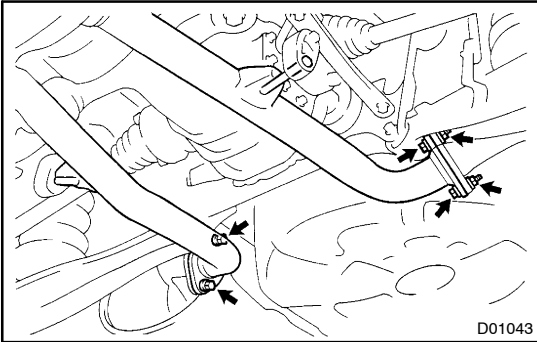
HINT:

At the time of installation, please refer to the following item.

Replace the used nuts and gaskets with new ones.

(d) Remove the 2 bolts and pipe support bracket.

Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)



- (e) Remove the 4 bolts and 2 gaskets from the tail pipe.
Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)

HINT:

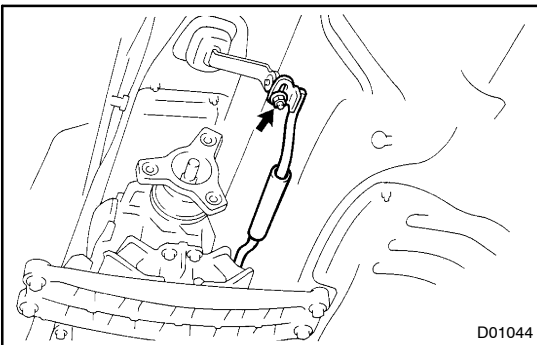
At the time of installation, please refer to the following item.
 Replace the used gaskets with new ones.

- (f) Disconnect the front and center exhaust pipe from the O-ring and remove it.

8. REMOVE 2 HEAT INSULATORS

- (a) Remove the 6 bolts and heat insulator.
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)
 (b) Remove the 4 bolts and heat insulator.
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)

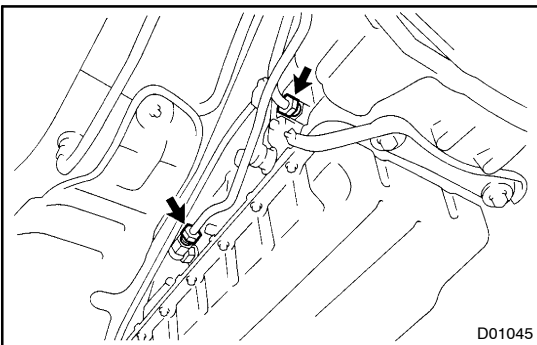
9. REMOVE PROPELLER SHAFT
 (See page PR-4)



10. DISCONNECT SHIFT CONTROL ROD

Remove the nut and disconnect the rod.

Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)

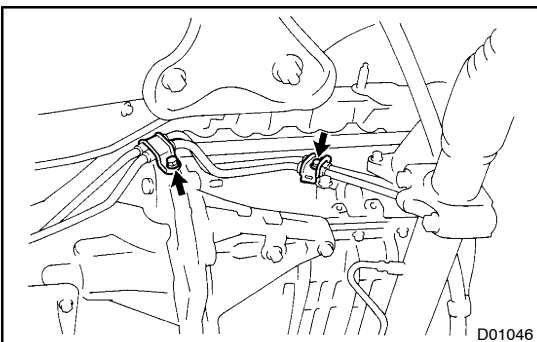


11. DISCONNECT OIL COOLER PIPE

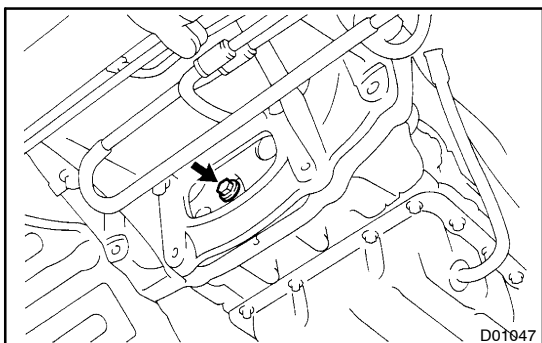
- (a) Loosen the 2 union nuts from the transmission.
Torque: 44 N·m (450 kgf·cm, 33 ft·lbf)

NOTICE:

Be careful not to damage the oil cooler pipe.



- (b) Disconnect the 3 set bolts of the clamp.
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)
 (c) Disconnect the 2 oil cooler pipes from the transmission.

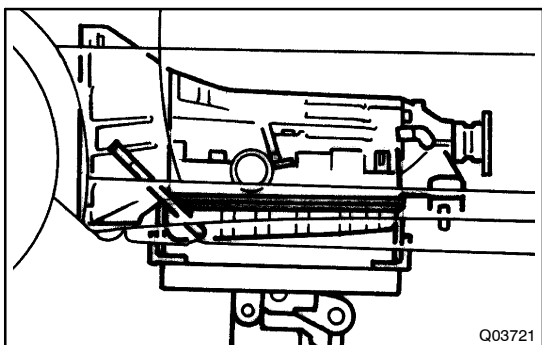
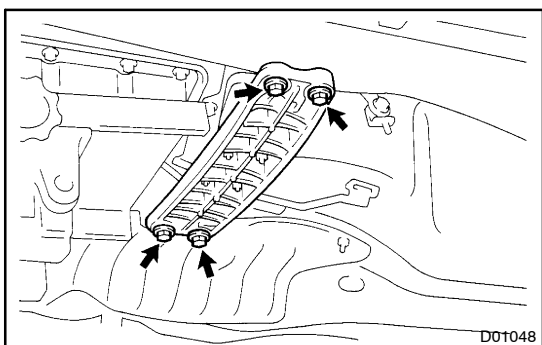
**12. REMOVE TORQUE CONVERTER MOUNTING BOLT**

- (a) Remove the hole plug.
- (b) Turn the crankshaft to gain access to each bolt.
- (c) Hold the crankshaft pulley nut with a wrench and remove the 6 bolts.

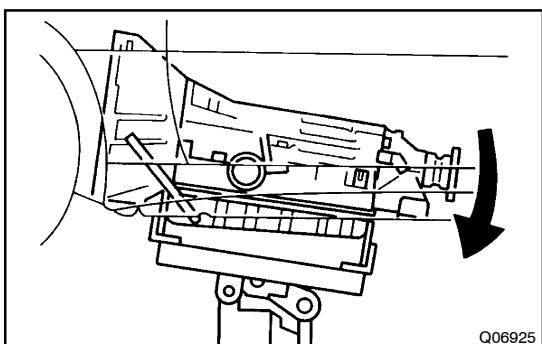
Torque: 48 N·m (490 kgf·cm, 35 ft·lbf)

HINT:

At the time of installation, please refer to the following item.
First install black colored bolt and then the 5 other bolts.

**13. SUPPORT TRANSMISSION WITH JACK****14. REMOVE 4 ENGINE REAR MOUNTING SET BOLTS**

Torque: 26 N·m (270 kgf·cm, 20 ft·lbf)

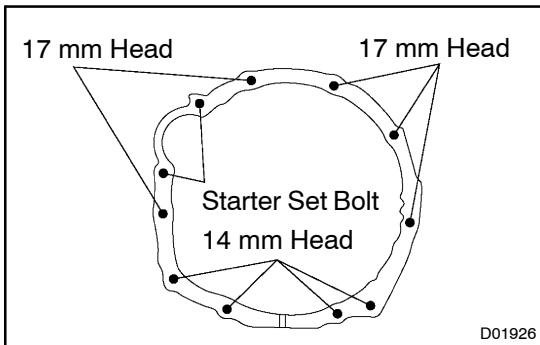
**15. DISCONNECT CONNECTORS AND WIRE HARNESS**

- (a) Tilt down the transmission.

NOTICE:

Take care so that the cooling fan does not come in contact with the fan shroud.

- (b) Disconnect the following connectors:
 - (1) O/D direct clutch speed sensor connector
 - (2) Speed sensor connector
 - (3) Neutral start switch connector
 - (4) Solenoid connector
- (c) Disconnect the wire harness from the clamp on the transmission.

**16. REMOVE STARTER**

- (a) Disconnect the connector and wire from the starter.
- (b) Remove the 2 bolts and starter.

Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)

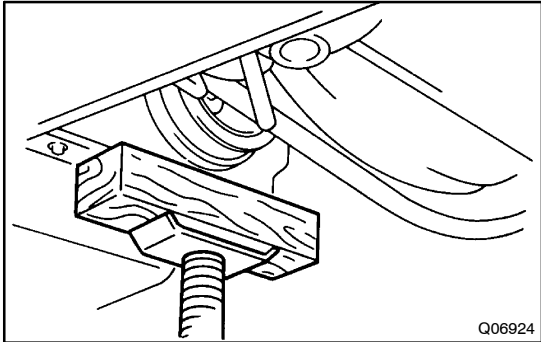
17. REMOVE TRANSMISSION

Remove the 9 bolts and transmission.

Torque:

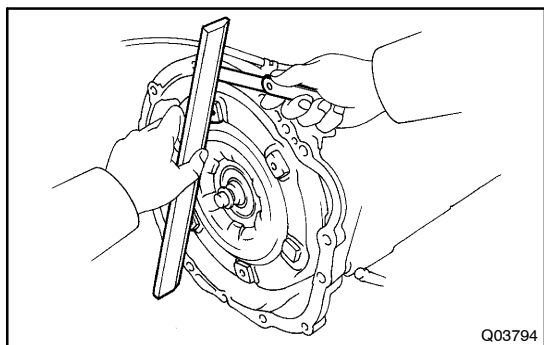
17 mm head: 72 N·m (730 kgf·cm, 53 ft·lbf)

14 mm head: 37 N·m (380 kgf·cm, 27 ft·lbf)

**HINT:**

At the time of installation, please refer to the following item.

Lift the front side of the engine.



INSTALLATION

1. CHECK TORQUE CONVERTER INSTALLATION

Using calipers and a straight edge, measure from the distance from the installed surface of the transmission housing to the installed surface of the torque converter.

Correct distance: More than 0.1 mm (0.004 in.)

If the distance is less than the standard, check for an improper installation.

2. INSTALL TRANSMISSION

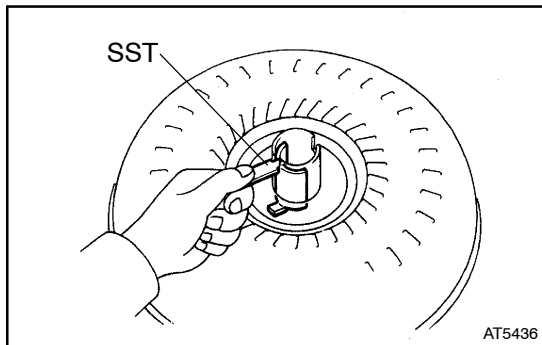
Installation is in the reverse order of removal.

(See page AT-29)

HINT:

After installation, check and inspect items as follows.

- Adjust the shift lever range. (See page DI-144)
- Fill ATF and check fluid level. (See page DI-144)
- Do the road test. (See page DI-144)

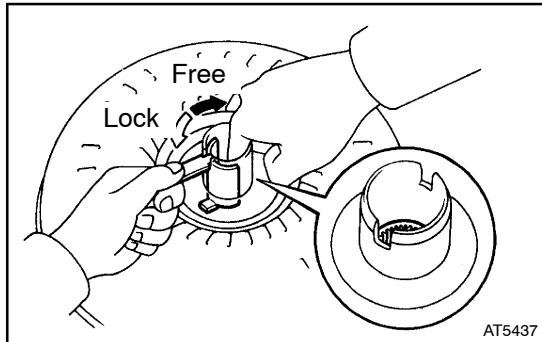


TORQUE CONVERTER AND DRIVE PLATE INSPECTION

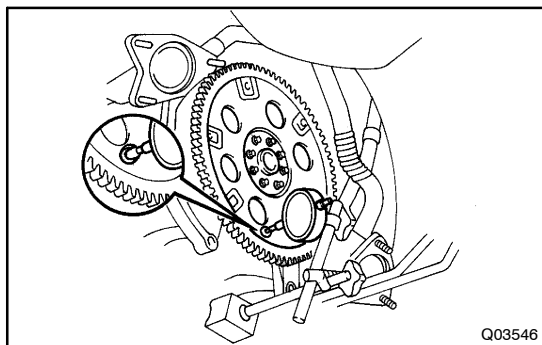
AT070-01

1. INSPECT ONE-WAY CLUTCH

- (a) Install SST so that it fits in the notch of the converter hub and outer race of the one-way clutch.
SST 09350-30020 (09351-32020)



- (b) Press on the serrations of stator with a finger and rotate the stator.
Check if it rotates smoothly when turned clockwise and locks up when turned counterclockwise.



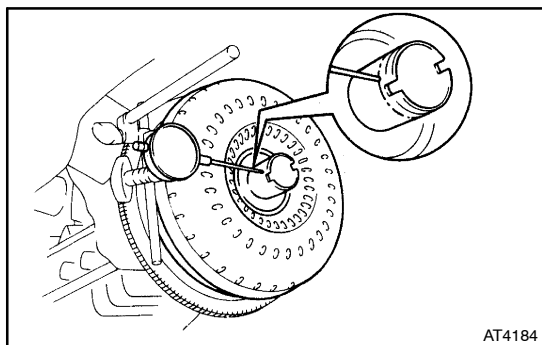
2. MEASURE DRIVE PLATE RUNOUT AND INSPECT RING GEAR

Set up a dial indicator and measure the drive plate runout.

Maximum runout: 0.20 mm (0.0079 in.)

If the runout exceeds 0.20 mm (0.0079 in.) or if the ring gear is damaged, replace the drive plate. If installing a new drive plate, note the orientation of spacers and tighten the bolts.

Torque: 83 N·m (850 kgf·cm, 61 ft·lbf)



3. MEASURE TORQUE CONVERTER SLEEVE RUNOUT

- (a) Temporarily mount the torque converter to the drive plate.
Set up a dial indicator.

Maximum runout: 0.30 mm (0.0118 in.)

If the runout exceeds 0.30 mm (0.0118 in.), try to correct by re-orienting the installation of the torque converter.

If excessive runout cannot be corrected, replace the torque converter.

HINT:

Mark the position of the torque converter to ensure correct installation.

- (b) Remove the torque converter.