

# AUTOMATIC TRANSAXLE FLUID

## ON-VEHICLE INSPECTION

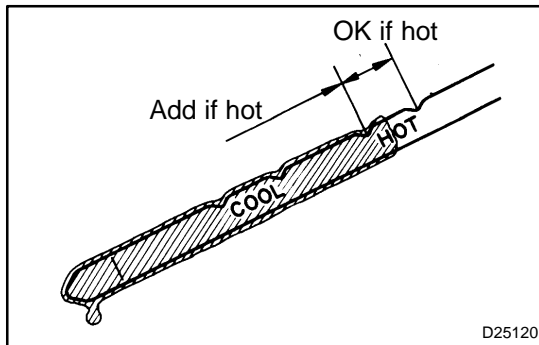
4005R-08

### 1. CHECK THE FLUID LEVEL

#### HINT:

Drive the vehicle so that the engine and transaxle are at normal operating temperature.

**Fluid temperature: 70 - 80 °C (158 - 176 °F)**



- Park the vehicle on a level surface and set the parking brake.
- With the engine idling and the brake pedal depressed, shift the shift lever into all positions from P to L position, and return to P position.
- take out the dipstick and wipe it clean.
- Put it back fully into the pipe.
- take it out and check that the fluid level is in the HOT position.

If there are leaks, it is necessary to repair or replace O-rings, FIPGs, oil seals, plugs and/or other parts.

# AUTOMATIC TRANSAXLE ASSY

400FX-04

## PRECAUTION

1. The automatic transaxle is composed of highly precision-finished parts, if nequire careful inspection before reassembly therefore even a small nick may cause fluid leakage or may degrade the performance. The instructions here are organized so that you work on only one component group at a time. This will help you to avoid confusion about similar-looking parts of different sub-assemblies being on your workbench at the same time. The component groups are inspected and repaired from the converter housing side. Inspectio, repair and reassembly As much as possible, before proceeding to the next component group. If a defect is found in a certain component group during reassembly, inspect and repair this group immediately. If a component group cannot be assembled because parts are being ordered, be sure to keep all parts of the group in a separate container while proceeding with disassembly, inspection, repair and reassembly of other component groups.

Recommended ATF: T-IV

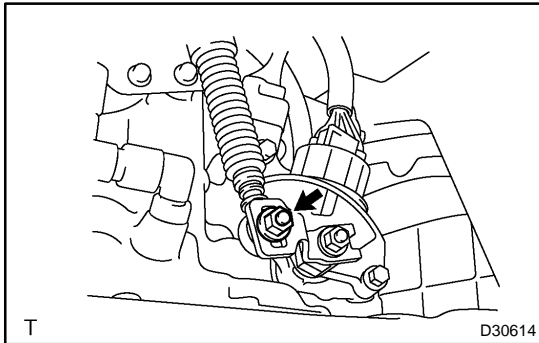
2. All disassembled parts should be washed clean and any fluid passages and holes should be blown with compressed air.
3. Dry all parts with compressed airnever use shop rags.
4. When using compressed air, do not aim at yourself to prevent accidentally spraying ATF or kerosene on your face.
5. The recommended automatic transaxle fluid or kerosene should be used for cleaning.
6. After cleaning, the parts should be arranged in the correct order for efficient inspection, repairs, and reassembly.
7. When disassembling a valve body, be sure to match each valve together with the corresponding spring.
8. New discs for the brakes and clutches that are to be used for replacement must be soaked in ATF for at least 15 minutes before reassembly.
9. All oil seal rings, clutch discs, clutch plates, rotating parts, and sliding surfaces should be coated with ATF prior to reassembly.
10. All gaskets and rubber O-rings should be replaced.
11. Do not apply adhesive cements to gaskets and similar parts.
12. Make sure that the ends of a snap ring are not aligned with one of the cutouts and are installed in the groove correctly.
13. If a worn bushing is to be replaced, the sub-assembly containing the bushing must also be replaced.
14. Check thrust bearings and races for wear or damage. Replace if necessary.
15. Use petroleum jelly to keep parts in place.
16. When working with FIPG material, you must perform the following.  
Using a razor blade and a gasket scraper, remove all the old packing (FIPG) material from the gasket surface.  
Thoroughly clean all components to remove all the loose material.  
Clean both sealing surfaces with a non-residue solvent.  
Parts must be reassembled within 10 minutes of application. Otherwise, the packing (FIPG) material must be removed and reapplied.

# PARK/NEUTRAL POSITION SWITCH ASSY (U151E)

## REPLACEMENT

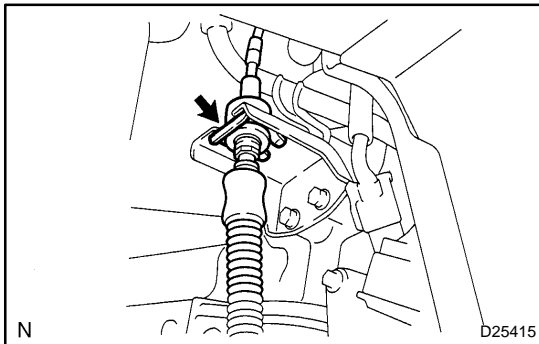
40100-05

1. REMOVE BATTERY
2. REMOVE AIR CLEANER ASSY
3. REMOVE AIR CLEANER HOSE NO.1
4. REMOVE AIR CLEANER BRACKET
5. REMOVE AIR CLEANER INLET NO.1
6. REMOVE INTAKE AIR RESONATOR SUB-ASSY
7. REMOVE ENGINE UNDER COVER NO.1

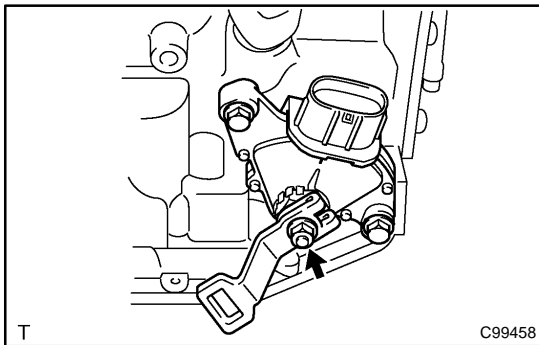


### 8. DISCONNECT TRANSMISSION CONTROL CABLE ASSY

- (a) Remove the nut from the control shaft lever.
- (b) Disconnect the control cable from the control shaft lever.

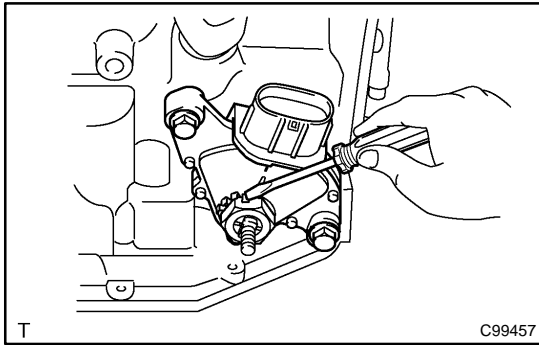


- (c) Remove the clip and disconnect the control cable from the control cable bracket.

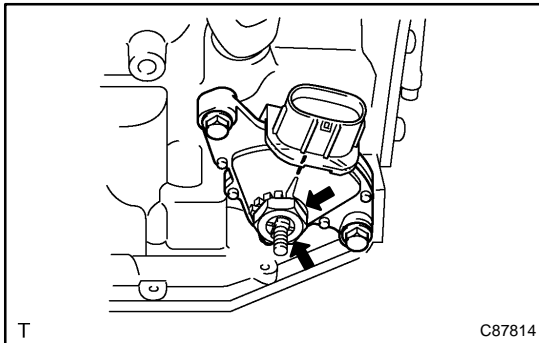


### 9. REMOVE PARK/NEUTRAL POSITION SWITCH ASSY

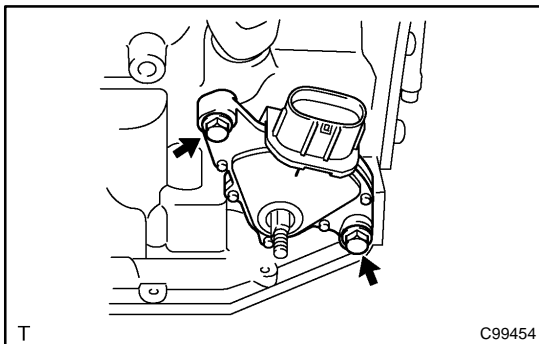
- (a) Disconnect the park/neutral position switch connector.
- (b) Remove the nut, washer and control shaft lever.



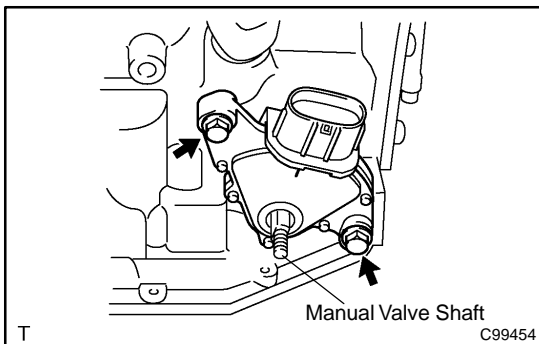
(c) Pry out the lock plate.



(d) Remove the lock nut and lock plate.



(e) Remove the 2 bolts and pull out the park/neutral position switch.



#### 10. INSTALL PARK/NEUTRAL POSITION SWITCH ASSY

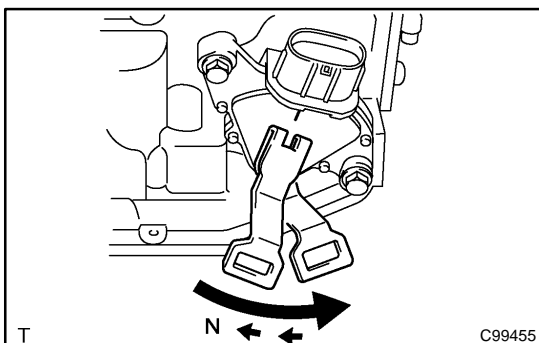
(a) Install the park/neutral position switch to the manual valve shaft.

(b) Temporarily install the 2 bolts.

(c) Place the lock plate and tighten the nut.

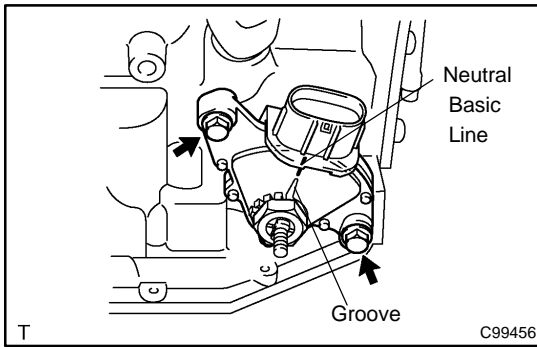
**Torque: 6.9 N·m (70 kgf·cm, 61 in.-lbf)**

(d) Temporarily install the control shaft lever.

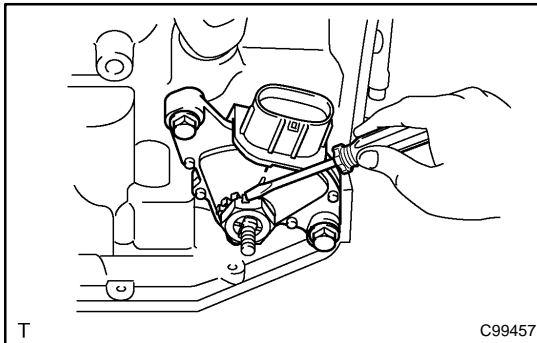


(e) Turn the lever counterclockwise until it stops, then turn it clockwise 2 notches.

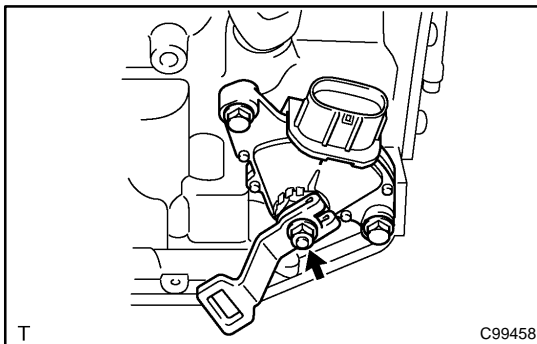
(f) Remove the control shaft lever.



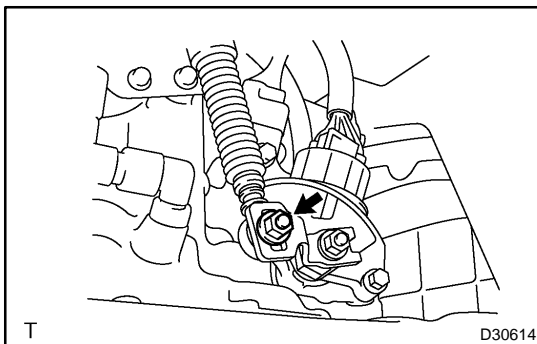
- (g) Align the groove with neutral basic line.
- (h) Hold the switch in position and tighten the 2 bolts.  
**Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)**



- (i) Using a screwdriver, stake the nut with the lock plate.

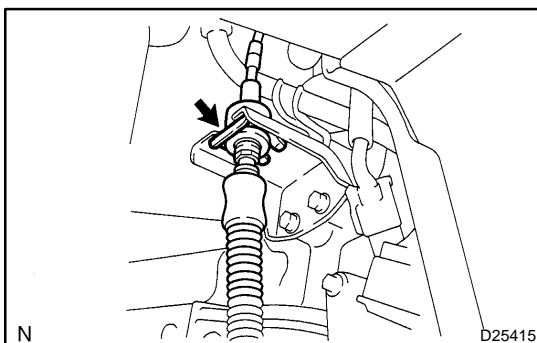


- (j) Install the control shaft lever, washer and nut.  
**Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)**
- (k) Connect the park/neutral position switch connector.



#### 11. CONNECT TRANSMISSION CONTROL CABLE ASSY

- (a) Temporarily install the control cable to the control shaft lever with the nut.



- (b) Install the control cable and a new clip to the bracket.

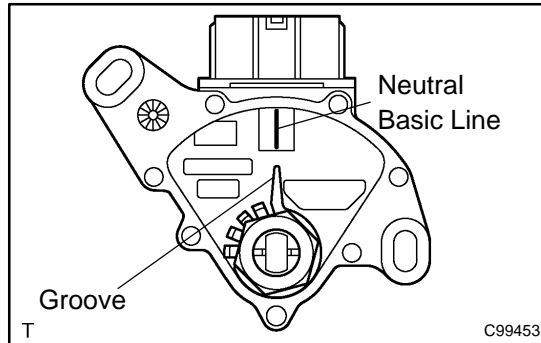
12. ADJUST SHIFT LEVER POSITION (SEE PAGE [40-40](#) )
13. INSPECT SHIFT LEVER POSITION (SEE PAGE [40-40](#) )
14. INSPECT PARK/NEUTRAL POSITION SWITCH ASSY (SEE PAGE [40-7](#) )
15. INSTALL ENGINE UNDER COVER NO.1
16. INSTALL INTAKE AIR RESONATOR SUB-ASSY
17. INSTALL AIR CLEANER INLET NO.1
18. INSTALL AIR CLEANER BRACKET
19. INSTALL AIR CLEANER HOSE NO.1
20. INSTALL AIR CLEANER ASSY
21. INSTALL BATTERY

## ADJUSTMENT

### 1. INSPECT PARK/NEUTRAL POSITION SWITCH ASSY

- (a) Apply the parking brake and turn the ignition switch to ON.
- (b) Depress the brake pedal and check that the engine starts only when the shift lever is set in N or P position.
- (c) Check that the back-up light is lit and the reverse warning buzzer sounds only when the shift lever is set in R position.

If a failure is found, check the continuity of the park/neutral position switch.



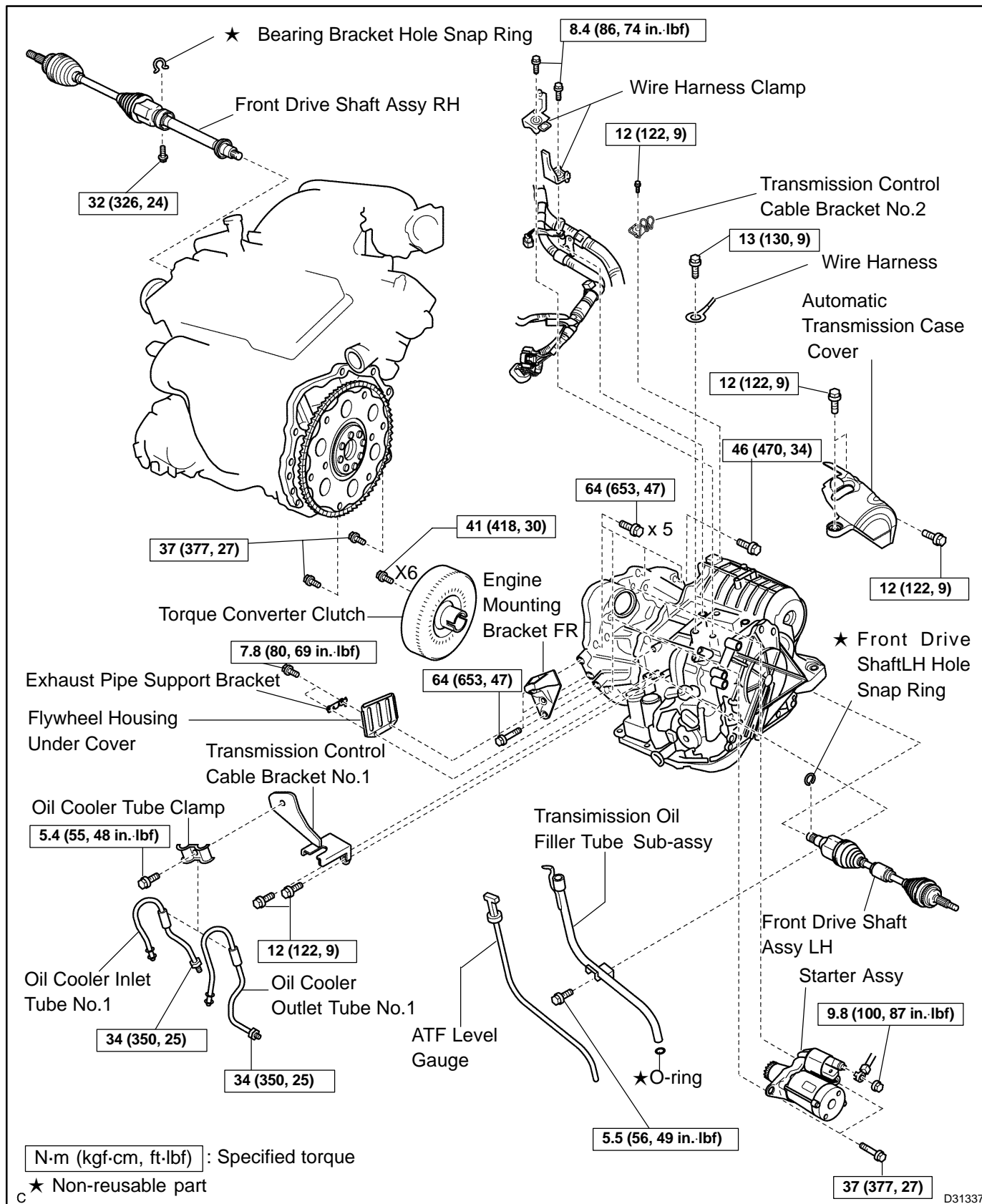
### 2. ADJUST PARK/NEUTRAL POSITION SWITCH ASSY

- (a) Loosen the 2 bolts of park/neutral position switch and set the shift lever to the N position.
- (b) Align the groove with neutral basic line.
- (c) Hold the switch in position and tighten the 2 bolts.  
**Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)**
- (d) After adjustment, perform the inspection described in step 1.

# AUTOMATIC TRANSAXLE ASSY (U151E)

## COMPONENTS

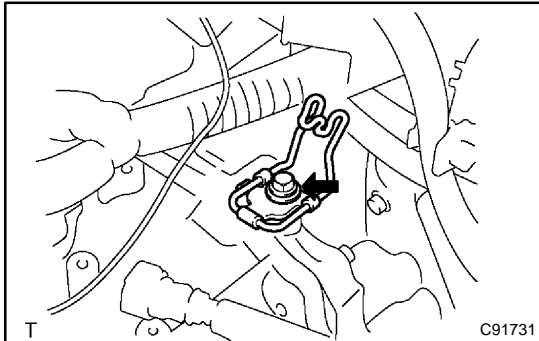
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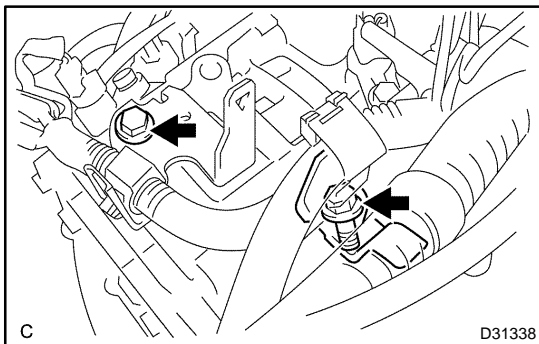
## REPLACEMENT

1. REMOVE ENGINE ASSEMBLY WITH TRANSAXLE (SEE PAGE 14-29 )
2. REMOVE FRONT DRIVE SHAFT ASSY RH (SEE PAGE 30-8 )
3. REMOVE FRONT DRIVE SHAFT ASSY LH (SEE PAGE 30-8 )



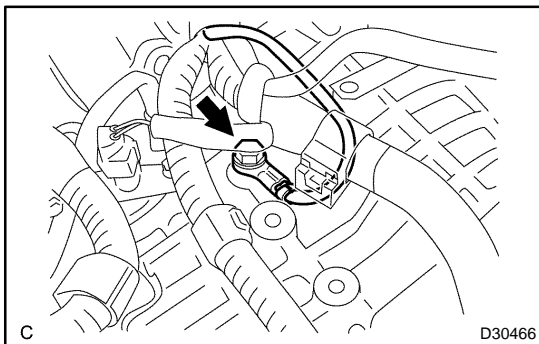
### 4. REMOVE TRANSMISSION CONTROL CABLE BRACKET NO.2

- (a) Remove the bolt and transmission control cable bracket No.2.



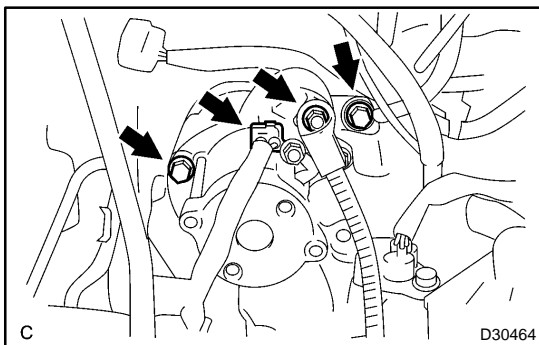
### 5. REMOVE WIRE HARNESS CLAMP

- (a) Disconnect the wire harnesses from the clamps.
- (b) Remove the 2 bolts and 2 clamps.



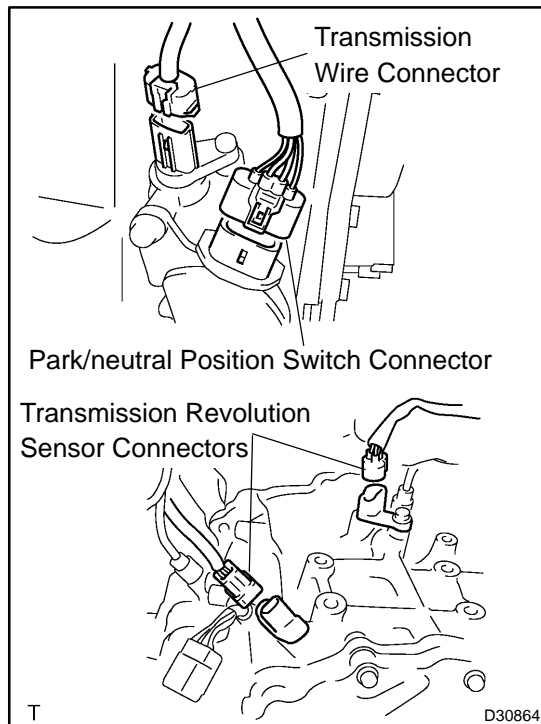
### 6. DISCONNECT WIRE HARNESS

- (a) Remove the bolt and wire harness.

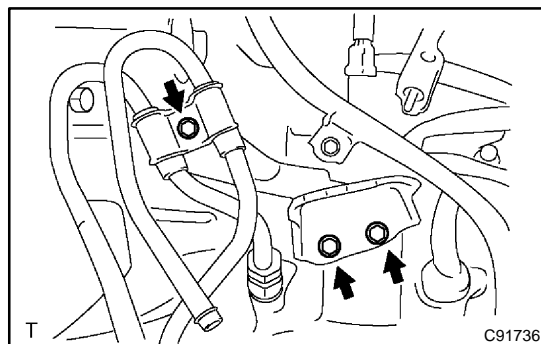


### 7. REMOVE STARTER ASSY

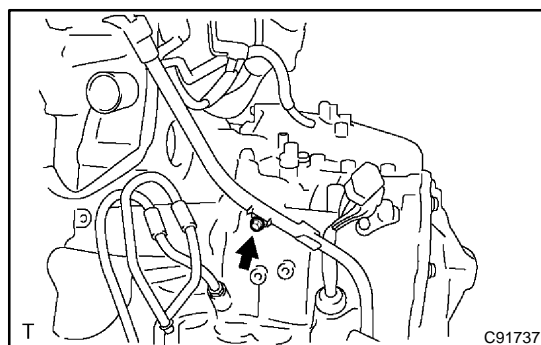
- (a) Disconnect the connector.
- (b) Remove the nut and disconnect the starter wire.
- (c) Remove the 2 bolts and starter assy.

**8. DISCONNECT CONNECTORS**

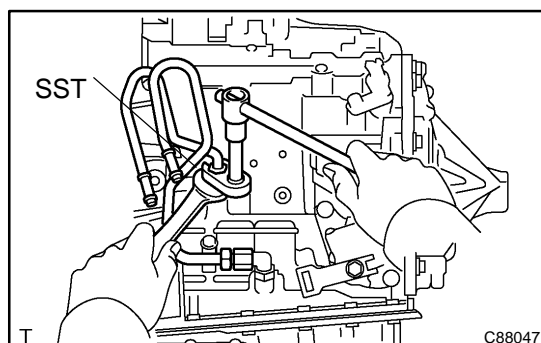
- (a) Disconnect the transmission wire connector.
- (b) Disconnect the park/neutral position switch connector.
- (c) Disconnect the 2 transmission revolution sensor connectors.

**9. REMOVE TRANSMISSION CONTROL CABLE BRACKET NO.1**

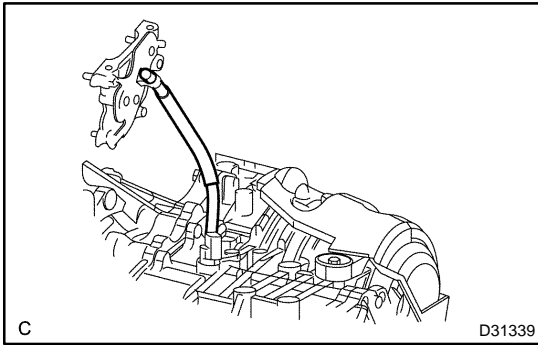
- (a) Remove the bolt and oil cooler tube clamp.
- (b) Remove the 2 bolts and transmission control cable bracket.

**10. REMOVE TRANSMISSION OIL FILLER TUBE SUB-ASSY**

- (a) Remove the ATF level gauge.
- (b) Remove the bolt and oil filler tube.
- (c) Remove the O-ring from the oil filler tube.

**11. REMOVE OIL COOLER INLET TUBE NO.1**

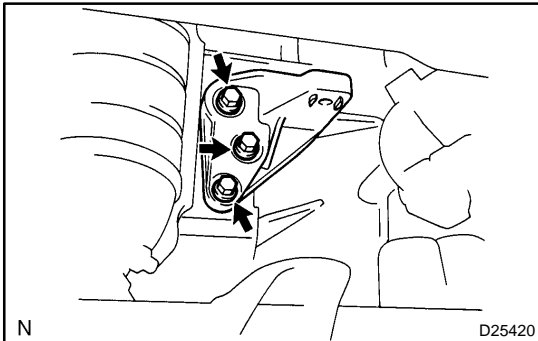
- (a) Using SST and spanner, disconnect the oil cooler inlet tube No.1.  
SST 09023-12701



- (b) Disconnect the breather hose from the wire harness bracket.

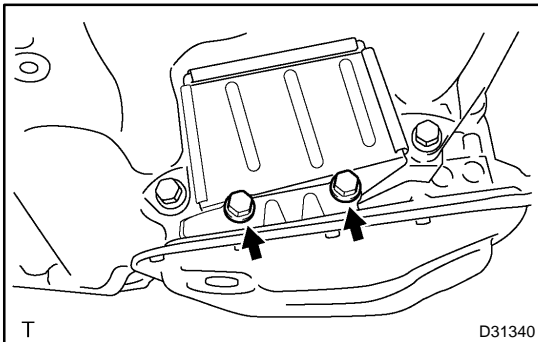
## 12. REMOVE OIL COOLER OUTLET TUBE NO.1

- (a) Using SST and spanner, disconnect the oil cooler outlet tube No.1.  
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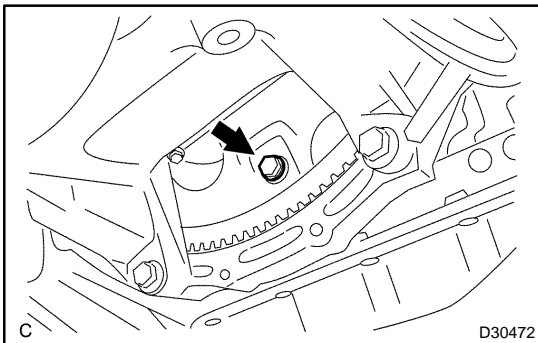
## 13. REMOVE ENGINE MOUNTING BRACKET FR

- (a) Remove the 3 bolts and engine mounting bracket FR.

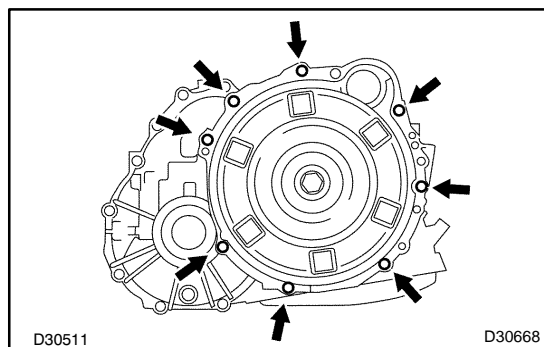


## 14. REMOVE AUTOMATIC TRANSAXLE ASSY

- (a) Remove the 2 bolts and frywheel housing under cover.

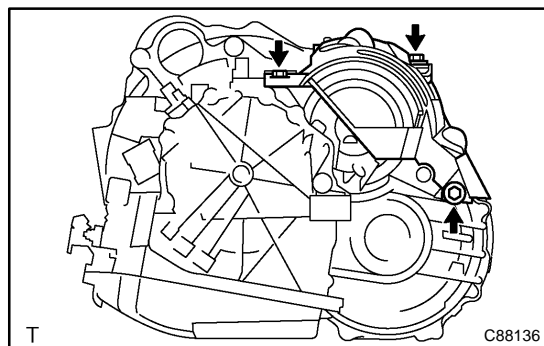


- (b) Turn the crankshaft to gain access and remove the 6 bolts while holding the crankshaft pulley bolt with a wrench.



- (c) Remove the 8 bolts.
- (d) Separate and remove the automatic transaxle.

## 15. REMOVE TORQUE CONVERTER CLUTCH ASSY

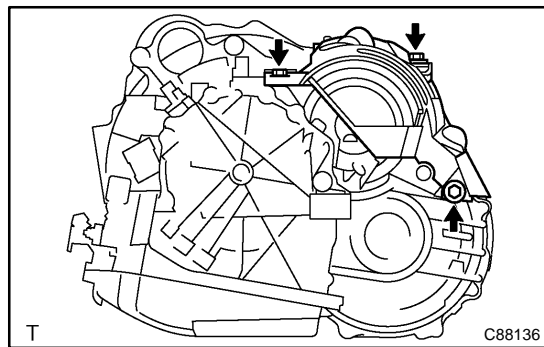


## 16. REMOVE TRANSAXLE CASE COVER UPPER

- (a) Remove the 3 bolts and transmission case cover.

## 17. INSPECT TORQUE CONVERTER CLUTCH ASSY (SEE PAGE 40-17)

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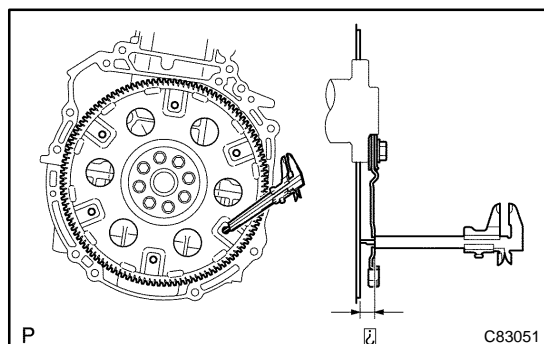


## 18. INSTALL TRANSAXLE CASE COVER UPPER

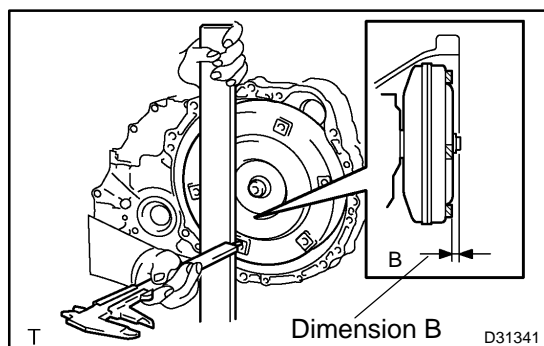
- (a) Install the transmission case cover with the 3 bolts.  
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

**19. INSTALL TORQUE CONVERTER CLUTCH ASSY**

- (a) Install the torque converter clutch to the automatic trans-axle.



- (b) Using vernier calipers, measure dimension "A" between the transaxle fitting part and the converter fitting part of the drive plate.

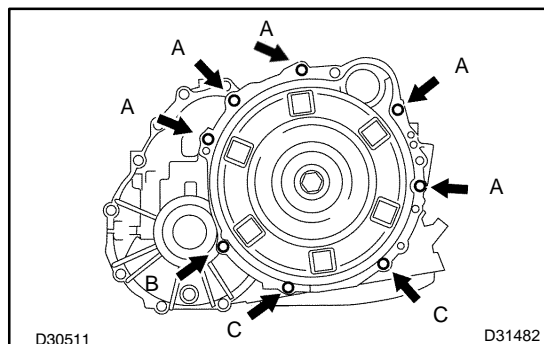


- (c) Using vernier calipers and a straight edge, measure dimension "B" shown in the illustration and check that "B" is greater than "A" measured in (b).

**Standard: A + 1 mm or more**

**NOTICE:**

**Do not add the thickness of the straight edge.**

**20. INSTALL AUTOMATIC TRANSAXLE ASSY**

- (a) Install the automatic transaxle and 8 bolts to the engine.

**Torque:**

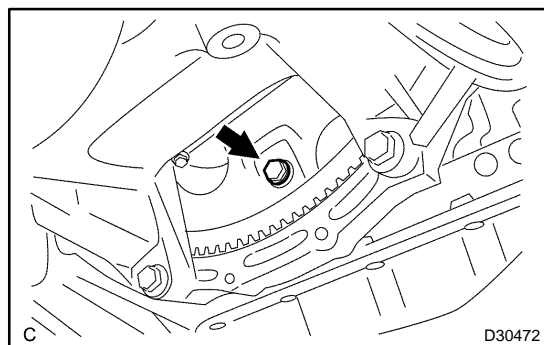
**Bolt A: 64 N·m (653 kgf·cm, 47 ft·lbf)**

**Bolt B: 46 N·m (470 kgf·cm, 34 ft·lbf)**

**Bolt C: 37 N·m (377 kgf·cm, 27 ft·lbf)**

- (b) Apply a few drops of adhesive to each 2 threads on the tip of the 6 torque converter clutch mounting bolts.

**Adhesive: Part No. 08833-00070, THREE BOND 1324 or equivalent**

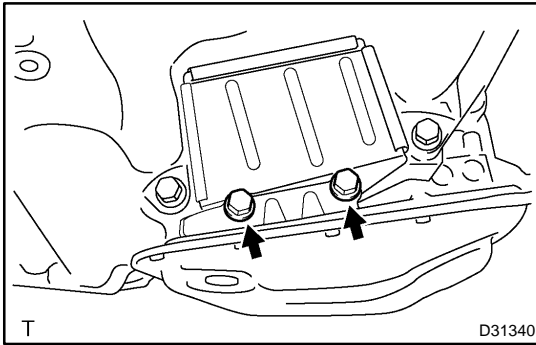


- (c) Install the 6 torque converter clutch mounting bolts.

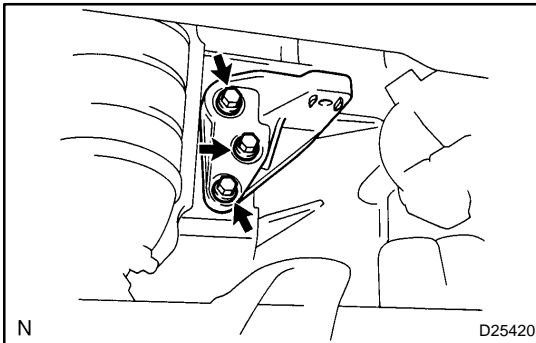
**Torque: 41 N·m (418 kgf·cm, 30 ft·lbf)**

**HINT:**

First install green colored bolt, and then install the other 5 bolts.



- (d) Install the flywheel housing under cover with the 2 bolts.  
**Torque: 7.8 N·m (80 kgf·cm, 69 in.-lbf)**



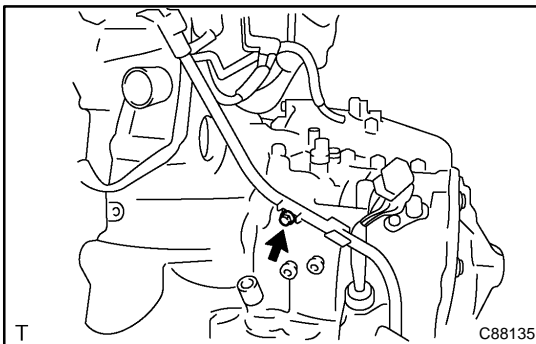
## 21. INSTALL ENGINE MOUNTING BRACKET FR

- (a) Install the engine mounting bracket FR with the 3 bolts to the automatic transaxle.

**Torque: 64 N·m (653 kgf·cm, 47 ft.-lbf)**

## 22. INSTALL TRANSMISSION OIL FILLER TUBE SUB-ASSY

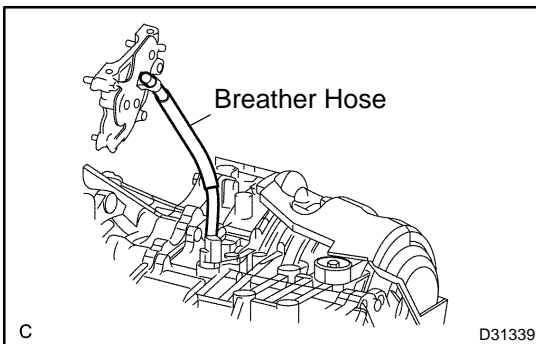
- (a) Coat a new O-ring with ATF, and install it to the oil filler tube.



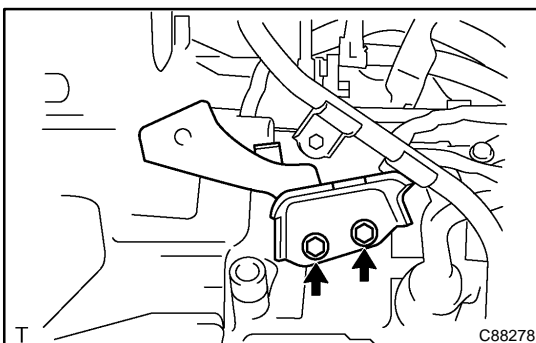
- (b) Install the oil filler tube with the bolt to the automatic transaxle.

**Torque: 5.5 N·m (56 kgf·cm, 49 in.-lbf)**

- (c) Install the ATF level gauge.



- (d) Connect the breather hose to the wire harness bracket.



## 23. INSTALL TRANSMISSION CONTROL CABLE BRACKET NO.1

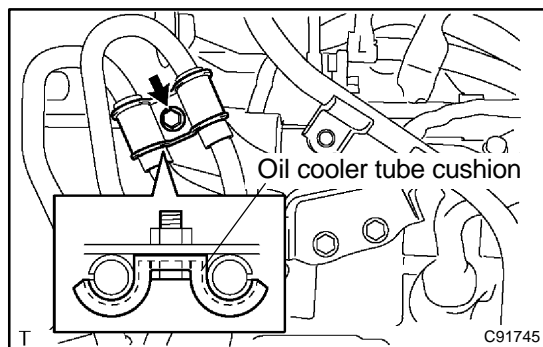
- (a) Install the control cable bracket No.1 with the 2 bolts.

**Torque: 12 N·m (122 kgf·cm, 9 ft.-lbf)**

## 24. INSTALL OIL COOLER INLET TUBE NO.1

- (a) Temporarily install the oil cooler outlet tube No.1.

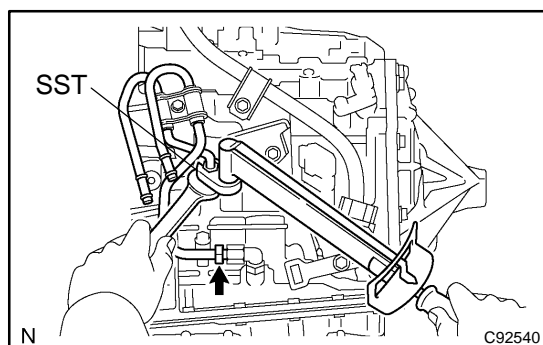
- (b) Temporarily install the oil cooler inlet tube No.1.



- (c) Install the oil cooler tube clamp with the bolt.  
**Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)**

HINT:

Install them so that the oil cooler tube cushion is positioned as shown in the illustration.



- (d) Using SST and spanner, tighten the oil cooler inlet tube No.1.

**Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)**

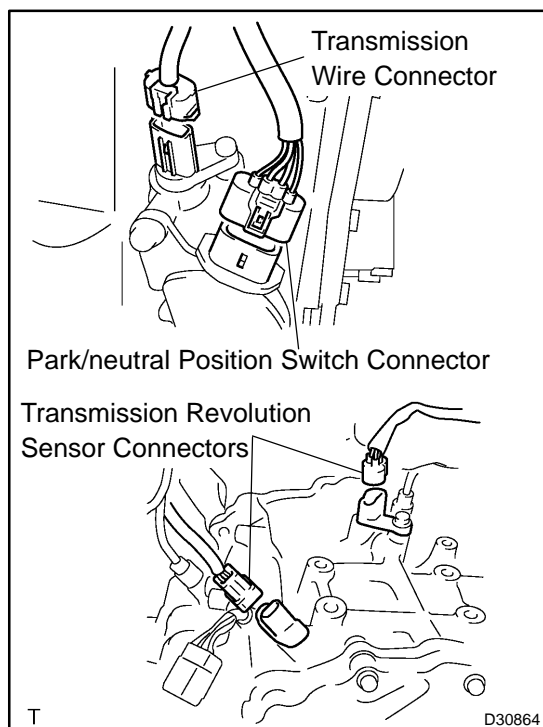
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## 25. INSTALL OIL COOLER OUTLET TUBE NO.1

- (a) Using SST and spanner, tighten the oil cooler outlet tube No.1.

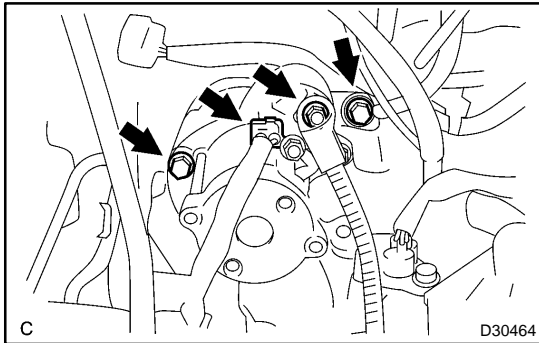
**Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)**

SST 09023-12701

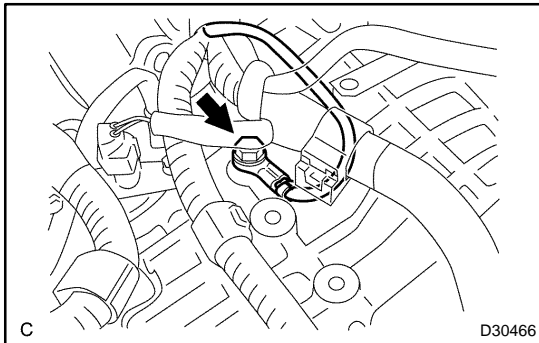


## 26. CONNECT CONNECTORS

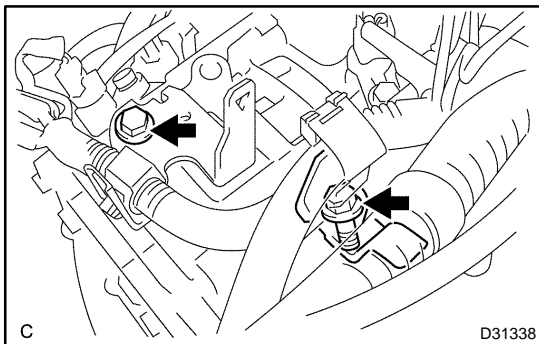
- (a) Connect the transmission wire connector.  
 (b) Connect the park/neutral position switch connector.  
 (c) Connect the 2 transmission revolution sensor connectors.

**27. INSTALL STARTER ASSY**

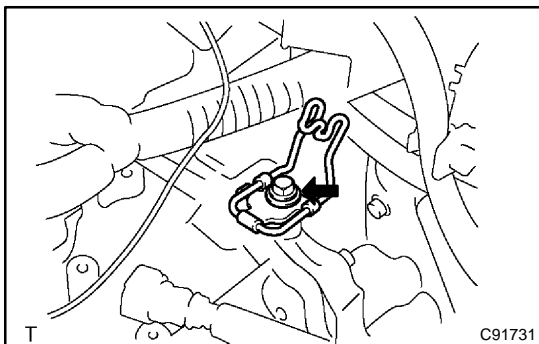
- (a) Install the starter assy with the 2 bolts.  
**Torque: 37 N·m (377 kgf·cm, 27 ft·lbf)**
- (b) Connect the connector.
- (c) Install the starter wire and nut.  
**Torque: 9.8 N·m (100 kgf·cm, 87 in·lbf)**

**28. INSTALL WIRE HARNESS**

- (a) Install the wire harness and bolt.  
**Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)**

**29. INSTALL WIRE HARNESS CLAMP**

- (a) Install the 2 clamps and 2 bolts.  
**Torque: 8.4 N·m (86 kgf·cm, 74 in·lbf)**
- (b) Connect the wire harnesses to the clamps.

**30. INSTALL TRANSMISSION CONTROL CABLE BRACKET NO.2**

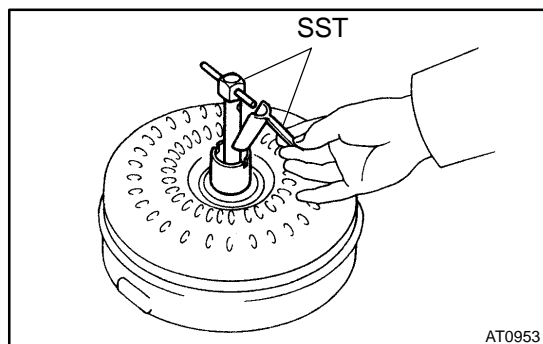
- (a) Install the transmission control cable bracket No.2 with a bolt.  
**Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)**

**31. INSTALL FRONT DRIVE SHAFT ASSY LH (SEE PAGE 30-8 )****32. INSTALL FRONT DRIVE SHAFT ASSY RH (SEE PAGE 30-8 )****33. INSTALL ENGINE ASSEMBLY WITH TRANSAXLE (SEE PAGE 14-29 )****34. RESET MEMORY(SEE PAGE 05-604 )**



# TORQUE CONVERTER CLUTCH AND DRIVE PLATE INSPECTION

40063-10



## 1. INSPECT TORQUE CONVERTER CLUTCH ASSY

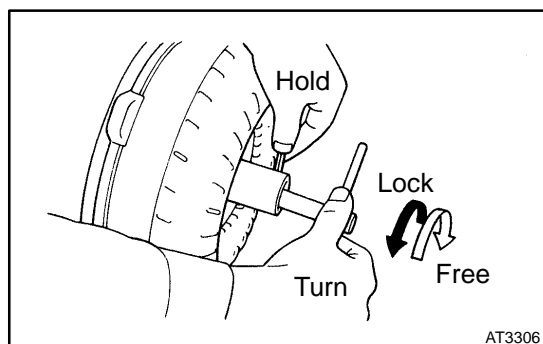
### (a) Inspect the one-way clutch.

- (1) Set SST into the inner race of the one-way clutch.

SST 09350-32014 (09351-32010)

- (2) Install SST so that it fits in the notch of the converter hub and outer race of the one-way clutch.

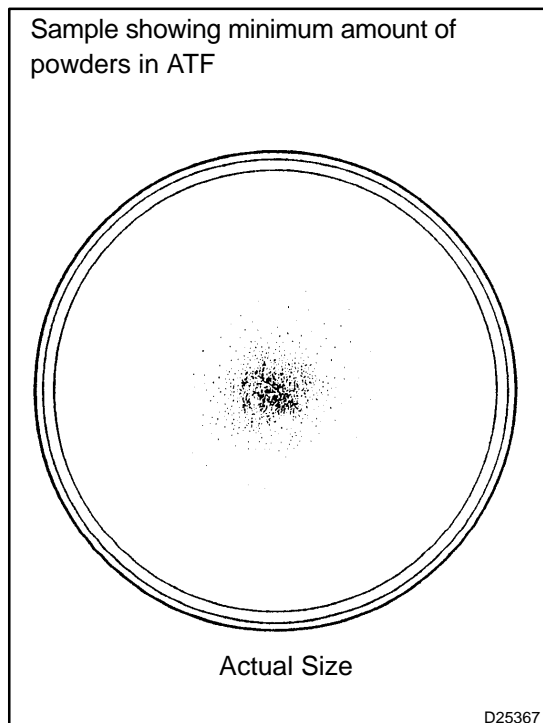
SST 09350-32014 (09351-32020)



- (3) With the torque converter clutch setting up on its side, check that the one-way clutch locks when it is turned counterclockwise, and rotates clockwise smoothly.

If necessary, clean the converter and retest the one-way clutch.

Replace the converter if the one-way clutch still fails the test.



Sample showing minimum amount of powders in ATF

Actual Size

- (b) Determine the condition of the torque converter clutch assy.

- (1) If the inspection result of the torque converter clutch assy meets the following item, replace the torque converter clutch.

### Malfunction item:

**Any metallic sound is heard from the torque converter clutch during stall test or when the shift lever is in neutral position.**

**One-way clutch is free or locked in both directions.**

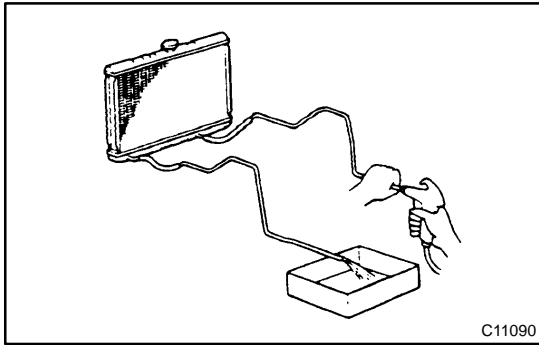
**Fine powders exceeding the sample limit is identified in ATF. (See the sample.)**

### HINT:

The sample shows the auto fluid of approx. 0.25 liters (0.26 US qts, 0.22 Imp. qts) that is taken out from the removed torque converter clutch

- (c) Replace the ATF in the torque converter clutch.

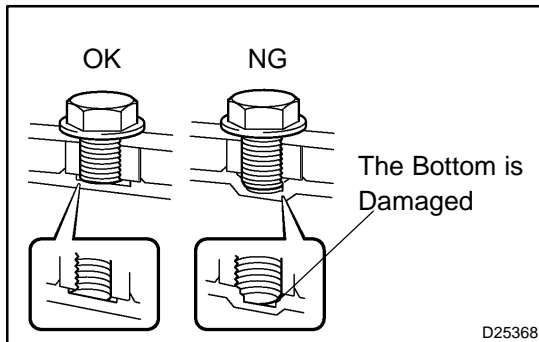
- (1) If the ATF is discolored and/or has a foul odor, completely stir the ATF in the torque converter clutch and drain it with the face for installation facing up.



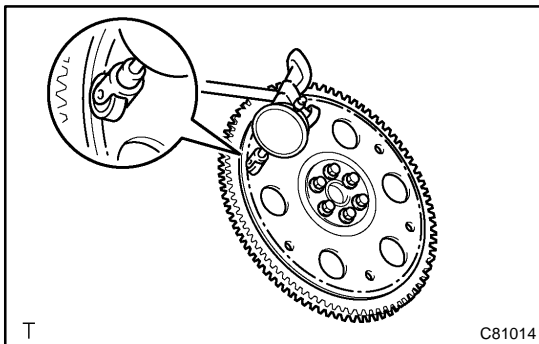
- (d) Clean and check the oil cooler and oil pipe line.  
 (1) If the torque converter clutch is inspected or the ATF is exchanged, clean the oil cooler and oil pipe line.

## HINT:

- ★ Spray compressed air of 196 kPa (2 kgf/cm<sup>2</sup>, 28 psi) from the inlet hose.
  - ★ If plenty of fine powders are identified in the ATF, add new ATF using a bucket pump and clean it again.
- (2) If the ATF is cloudy, inspect the oil cooler (radiator).



- (e) Prevent deformation of the torque converter clutch and damage to the oil pump gear.
- (1) When any marks due to interference are found on the end of the bolt for the torque converter clutch and on the bottom of the bolt hole, replace the bolt and the torque converter clutch.
  - (2) All of the bolts must have the same length.
  - (3) No missing spring washer.

**2. INSPECT DRIVE PLATE & RING GEAR SUB-ASSY**

- (a) Set up a dial indicator and measure the drive plate runout.
- (b) Check the damage of the ring gear.

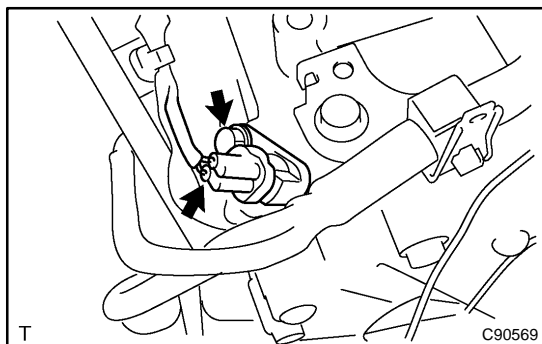
**Maximum runout: 0.20 mm (0.0079 in.)**

If the runout is not within the specification or ring gear is damaged, replace the drive plate.

## SPEED SENSOR REPLACEMENT

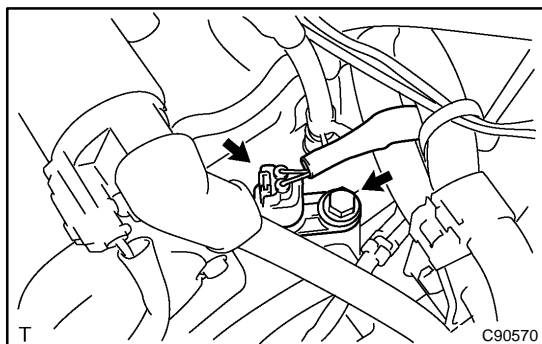
40060-08

1. REMOVE BATTERY
2. REMOVE AIR CLEANER ASSY
3. REMOVE AIR CLEANER HOSE NO.1



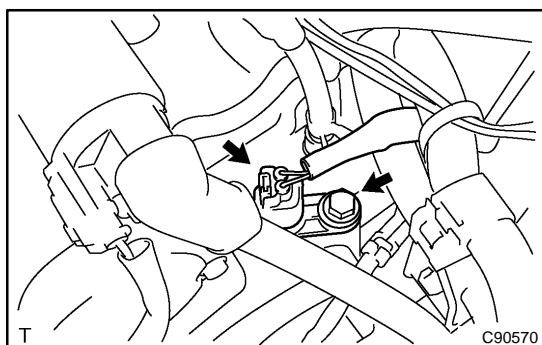
### 4. REMOVE SPEED SENSOR (NT SENSOR)

- (a) Disconnect the speed sensor connector.
- (b) Remove the bolt and speed sensor.



### 5. REMOVE SPEED SENSOR (NC SENSOR)

- (a) Disconnect the speed sensor connector.
- (b) Remove the bolt and speed sensor.



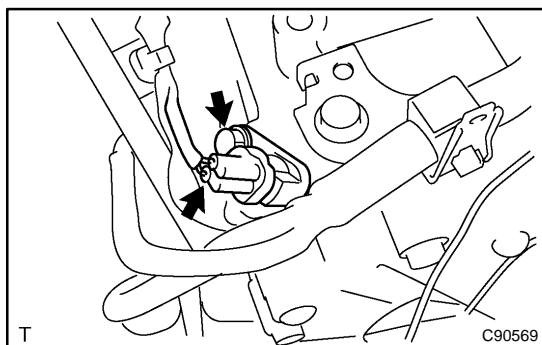
### 6. INSTALL SPEED SENSOR (NC SENSOR)

- (a) Coat O-ring with ATF.
- (b) Install the speed sensor with the bolt.  
**Torque: 11.3 N·m (115 kgf·cm, 8 ft·lbf)**

#### HINT:

Make sure of the manufacturer's name.

- (c) Connect the speed sensor connector.



### 7. INSTALL SPEED SENSOR (NT SENSOR)

- (a) Coat O-ring with ATF.
- (b) Install the speed sensor with the bolt.  
**Torque: 11.3 N·m (115 kgf·cm, 8 ft·lbf)**

#### HINT:

Make sure of the manufacturer's name.

- (c) Connect the speed sensor connector.

8. INSTALL AIR CLEANER HOSE NO.1
9. INSTALL AIR CLEANER ASSY  
Torque: 5.0 N·m (51 kgf·cm, 44 in·lbf)
10. INSTALL BATTERY

# TRANSMISSION WIRE (U151E)

4010V-04

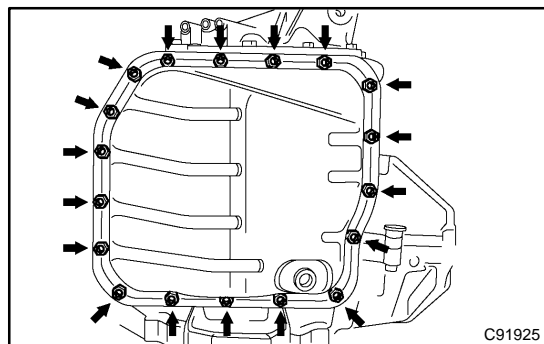
## REPLACEMENT

### 1. REMOVE ENGINE UNDER COVER NO.1

### 2. DRAIN AUTOMATIC TRANSAXLE FLUID

- (a) Remove the drain plug, gasket, and drain ATF.
- (b) Install a new gasket and drain plug.

**Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)**

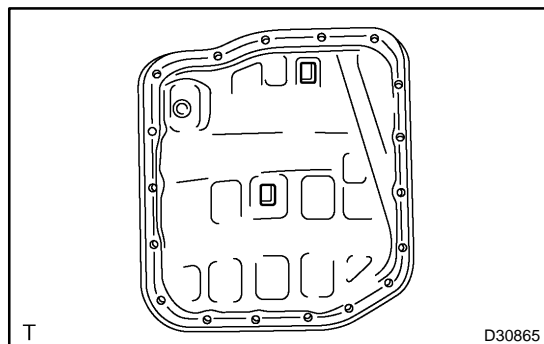


### 3. REMOVE AUTOMATIC TRANSAXLE OIL PAN SUB-ASSY

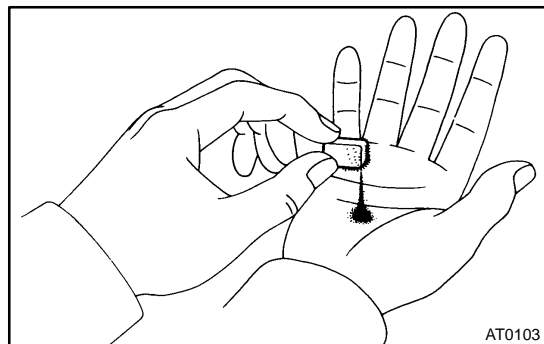
- (a) Remove the 18 bolts, oil pan and gasket.

#### NOTICE:

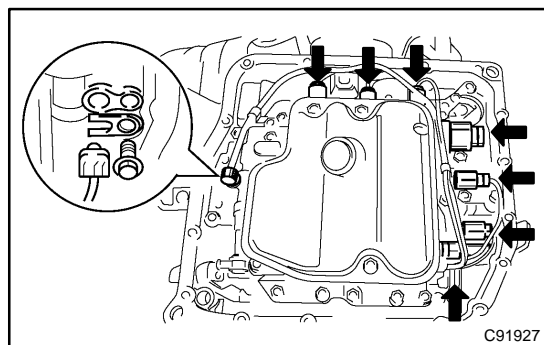
**Some fluid will remain in the oil pan. Remove all the pan bolts, and carefully remove the oil pan assembly.**



- (b) Remove the 2 magnets from the oil pan.

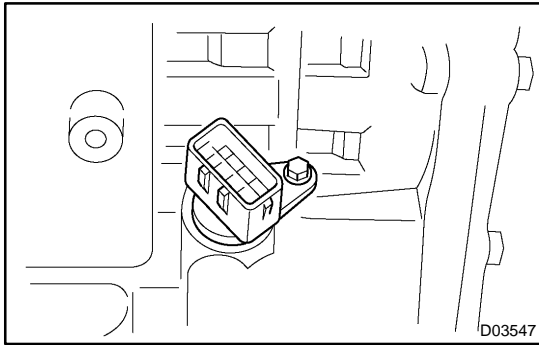


- (c) Examine particles in pan.
  - (1) Use the removed magnets to collect steel chips. Look carefully at the chips and particles in the pan and the magnet to anticipate the type of wear you will find in the transaxle.  
 Steel (magnetic): bearing, gear and plate wear  
 Brass (non-magnetic): bearing wear



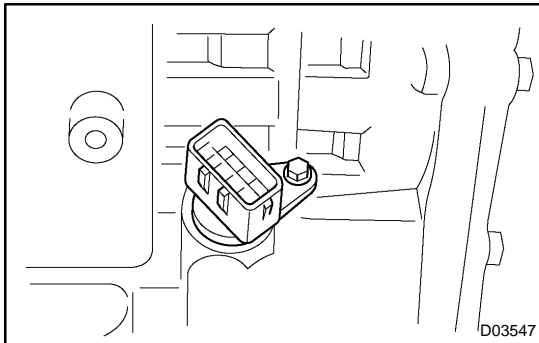
### 4. DISCONNECT TRANSMISSION WIRE

- (a) Disconnect the 7 shift solenoid valve connectors.
- (b) Remove the bolt and lock plate, and disconnect the ATF temperature sensor.



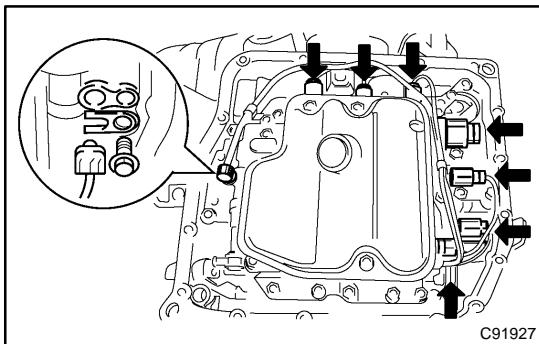
### 5. REMOVE TRANSMISSION WIRE

- (a) Disconnect the transmission wire connectors.
- (b) Remove the bolt and transmission wire.



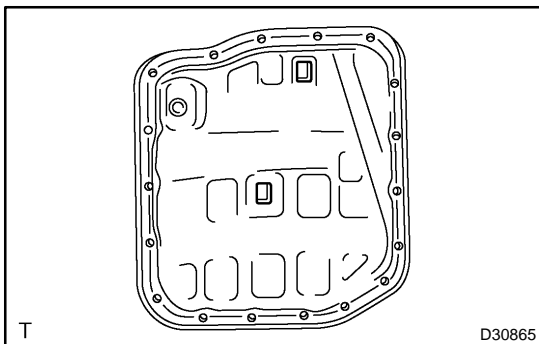
### 6. INSTALL TRANSMISSION WIRE

- (a) Coat a O-ring of the transmission wire connector with ATF.
- (b) Install the transmission wire with the bolt.  
**Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)**



### 7. CONNECT TRANSMISSION WIRE

- (a) Coat a O-ring of the ATF temperature sensor with ATF.
- (b) Install the ATF temperature sensor with the lock plate and bolt.  
**Torque: 6.6 N·m (67 kgf·cm, 58 in.-lbf)**
- (c) Connect the 7 shift solenoid valve connectors.

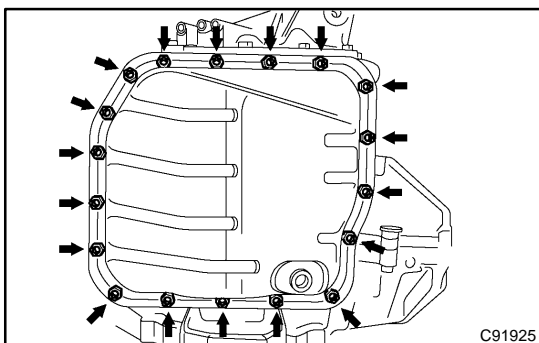


### 8. INSTALL AUTOMATIC TRANSAXLE OIL PAN SUB-ASSY

- (a) Install the 2 magnets in the oil pan.
- (b) Apply seal packing to the 18 bolts.

**Seal packing:**

**THREE BOND 2430 or equivalent**



- (c) Install a new gasket, oil pan and 18 bolts to the transaxle case.

**Torque: 7.8 N·m (80 kgf·cm, 69 in.-lbf)**

#### NOTICE:

Since the bolts should be seal bolts, apply seal packing to the bolts and tighten them within 10 minutes after applying.

9. ADD AUTOMATIC TRANSAXLE FLUID
10. INSPECT AUTOMATIC TRANSAXLE FLUID (SEE PAGE [40-1](#) )
11. INSTALL ENGINE UNDER COVER NO.1
12. RESET MEMORY (SEE PAGE [05-604](#) )

# TRANSMISSION VALVE BODY ASSY (U151E)

4010W-04

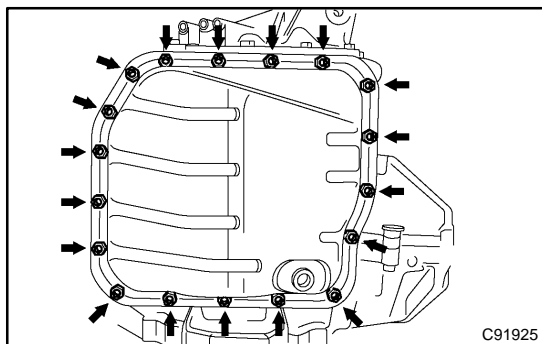
## REPLACEMENT

### 1. REMOVE ENGINE UNDER COVER NO.1

### 2. DRAIN AUTOMATIC TRANSAXLE FLUID

- (a) Remove the drain plug, gasket, and drain ATF.
- (b) Install a new gasket and drain plug.

**Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)**

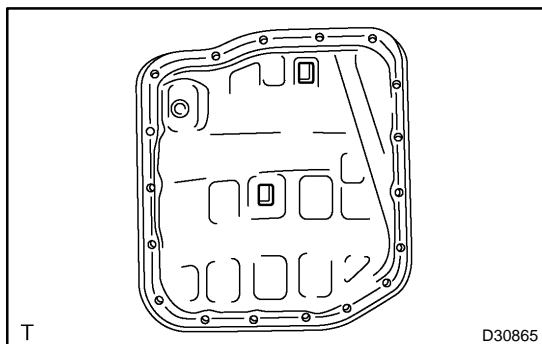


### 3. REMOVE AUTOMATIC TRANSAXLE OIL PAN SUB-ASSY

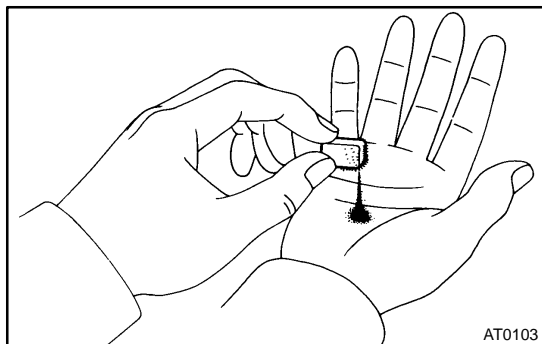
- (a) Remove the 18 bolts, oil pan and gasket.

#### NOTICE:

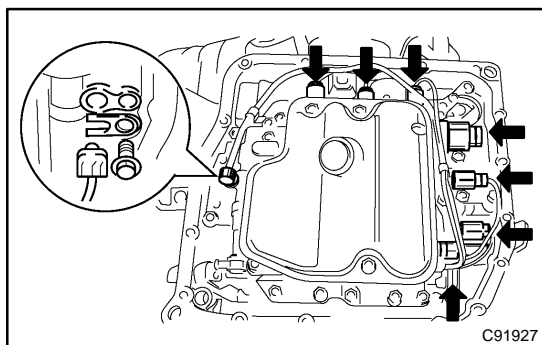
**Some fluid will remain in the oil pan. Remove all the pan bolts, and carefully remove the oil pan assembly.**



- (b) Remove the 2 magnets from the oil pan.



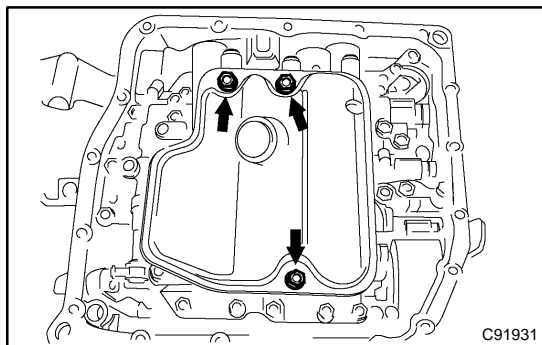
- (c) Examine particles in pan.
  - (1) Use the removed magnets to collect steel chips. Look carefully at the chips and particles in the pan and the magnet to anticipate the type of wear you will find in the transaxle.  
 Steel (magnetic): bearing, gear and plate wear  
 Brass (non-magnetic): bearing wear



### 4. DISCONNECT TRANSMISSION WIRE

- (a) Disconnect the 7 shift solenoid valve connectors.
- (b) Remove the bolt and lock plate, and disconnect the ATF temperature sensor.



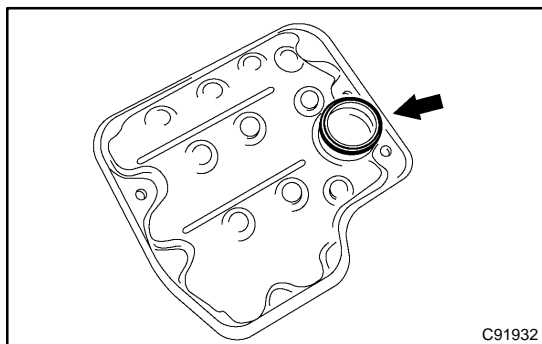


## 5. REMOVE VALVE BODY OIL STRAINER ASSY

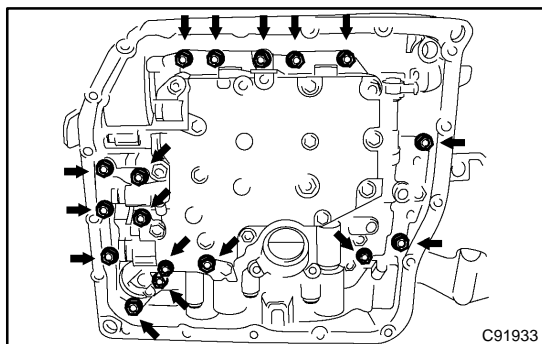
- (a) Remove the 3 bolts and oil strainer.

### NOTICE:

Be careful that some fluid will come out from the oil strainer.



- (b) Remove the O-ring from the oil strainer.

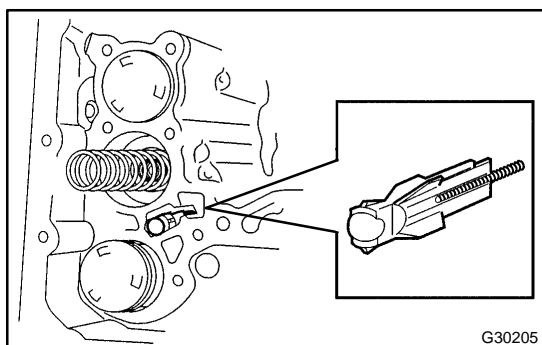


## 6. REMOVE TRANSMISSION VALVE BODY ASSY

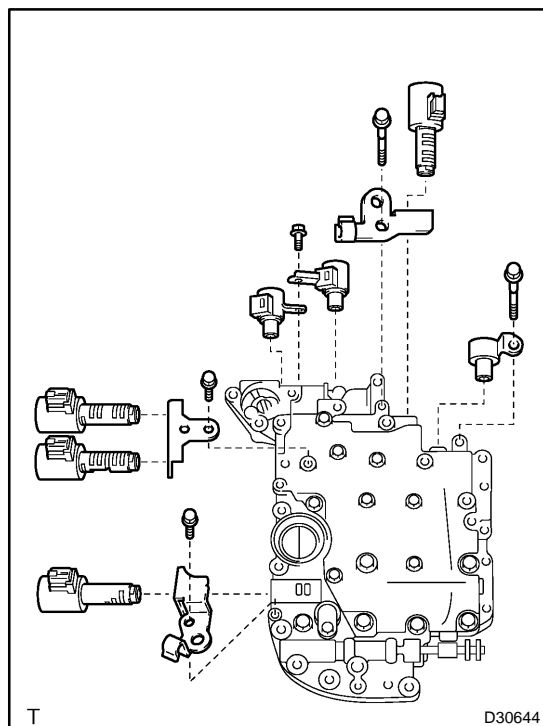
- (a) Support the valve body assy and remove the 17 bolts and the valve body assy.

### NOTICE:

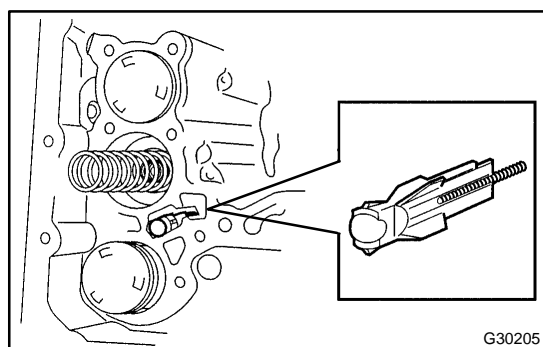
Be careful not to drop the check valve body, spring and accumulator piston.



- (b) Remove the check ball body and spring.

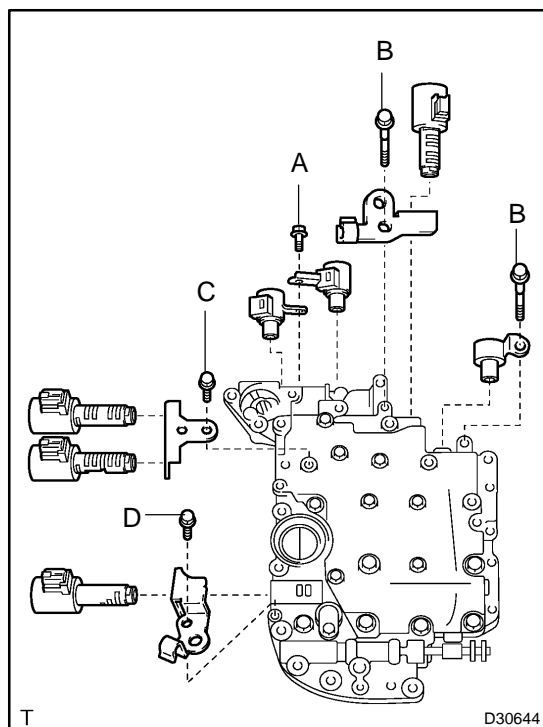


- (c) Remove the 5 bolts and 7 shift solenoid valves.



## 7. INSTALL TRANSMISSION VALVE BODY ASSY

- (a) Install the spring and check ball body.



- (b) Install the 7 shift solenoid valves with the 5 bolts.

### Torque:

**Bolt A, B: 11 N·m (110 kgf·cm, 8 ft·lbf)**

**Bolt C, D: 6.6 N·m (67 kgf·cm, 58 in. lbf)**

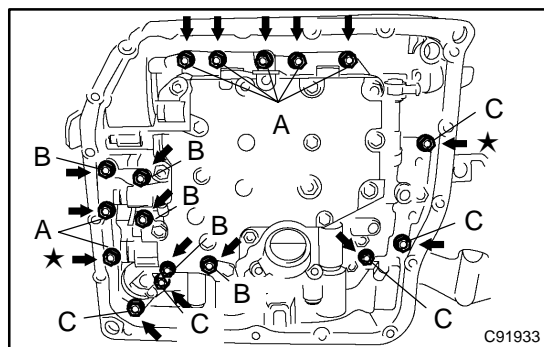
### Bolt length:

**Bolt A: 16 mm (0.63 in.)**

**Bolt B: 57 mm (2.2 in.)**

**Bolt C: 23 mm (0.9 in.)**

**Bolt D: 12 mm (0.47 in.)**



- (c) Align the groove of the manual valve with the pin of lever.
- (d) Install the 17 bolts.

**Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)**

**NOTICE:**

Push the valve body against the accumulator piston spring and the check ball body to install it.

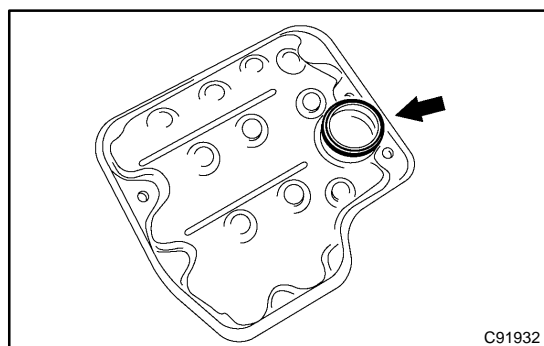
Temporarily tighten those bolts marked by ★ in the illustration first because they are positioning bolts.

**Bolt length:**

**Bolt A: 25 mm (0.984 in.)**

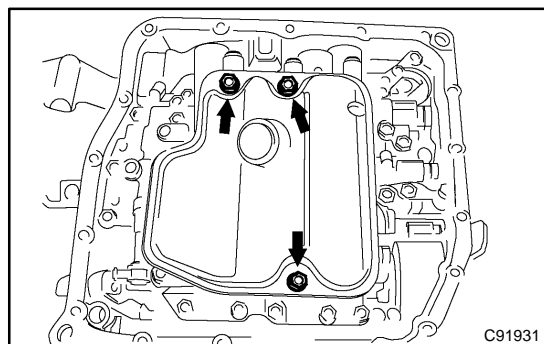
**Bolt B: 57 mm (2.244 in.)**

**Bolt C: 41 mm (1.614 in.)**

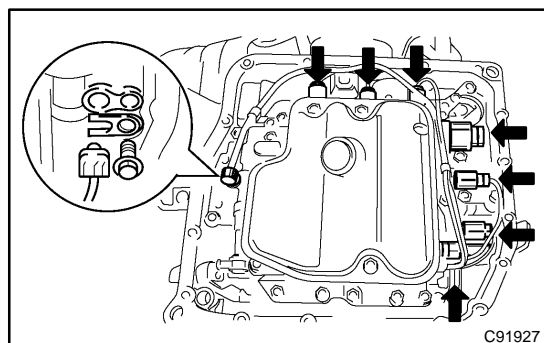


**8. INSTALL VALVE BODY OIL STRAINER ASSY**

- (a) Coat a new O-ring with ATF.
- (b) Install the O-ring to the oil strainer.

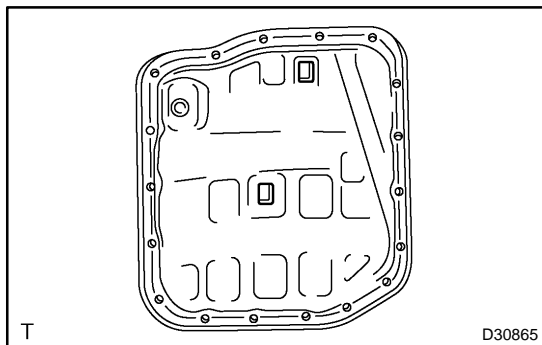


- (c) Install the oil strainer with the 3 bolts.
- Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)**



**9. INSTALL TRANSMISSION WIRE**

- (a) Coat a O-ring with ATF.
  - (b) Install the ATF temperature sensor with the lock plate and bolt.
  - (c) Connect the 7 shift solenoid valve connectors.
- Torque: 6.6 N·m (67 kgf·cm, 58 in·lbf)**

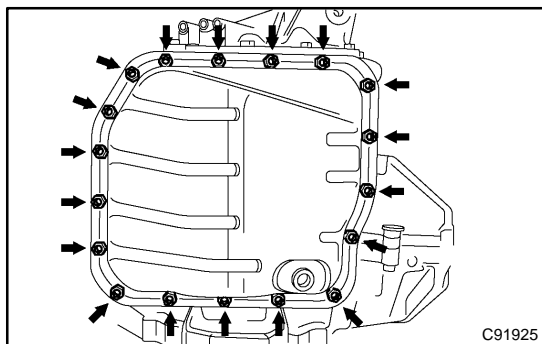


# 10. INSTALL AUTOMATIC TRANSAXLE OIL PAN SUB-ASSY

- (a) Install the 2 magnets in the oil pan.
- (b) Apply seal packing to 18 bolts.

**Seal packing:**

**THREE BOND 2430 or equivalent**



- (c) Install a new gasket, oil pan and 18 bolts to the transaxle case.

**Torque: 7.8 N·m (80 kgf·cm, 69 in.-lbf)**

## NOTICE:

Since the bolts should be seal bolts, apply seal packing to the bolts and tighten them within 10 minutes after applying.

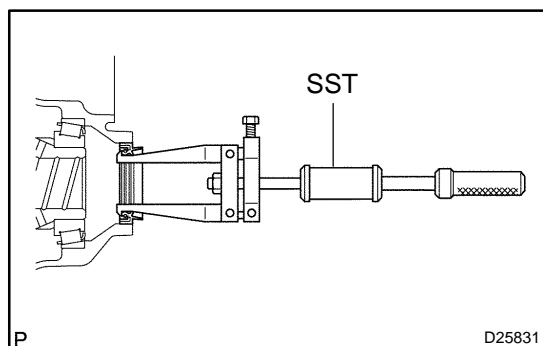
- 11. ADD AUTOMATIC TRANSAXLE FLUID
- 12. INSPECT AUTOMATIC TRANSAXLE FLUID (SEE PAGE [40-1](#) )
- 13. INSTALL ENGINE UNDER COVER NO.1
- 14. RESET MEMORY (SEE PAGE [05-604](#) )

# FRONT DIFFERENTIAL OIL SEAL (U151E)

## REPLACEMENT

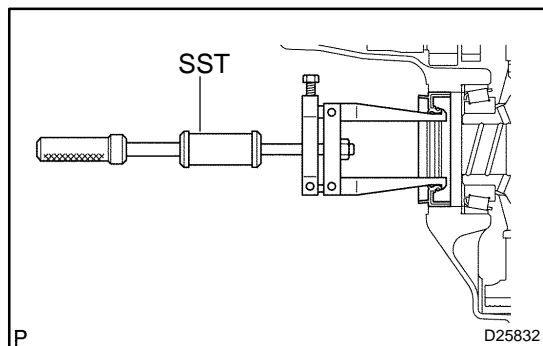
4010X-04

1. REMOVE FRONT WHEELS
2. REMOVE ENGINE UNDER COVER NO.1
3. DRAIN AUTOMATIC TRANSAXLE FLUID
  - (a) Remove the drain plug, gasket and drain ATF.
  - (b) Install a new gasket and drain plug.  
**Torque: 49 N·m (500 kgf·cm, 36 ft·lbf)**
4. REMOVE FRONT DRIVE SHAFT ASSY RH (SEE PAGE 30-8 )
5. REMOVE FRONT DRIVE SHAFT ASSY LH (SEE PAGE 30-8 )



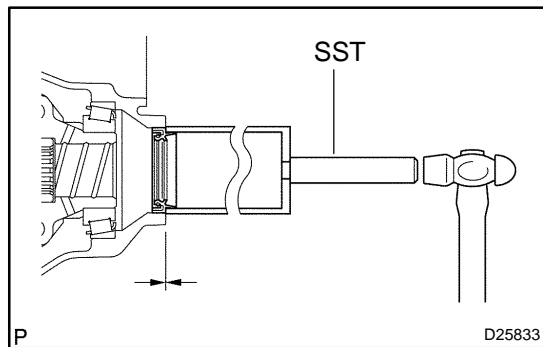
### 6. REMOVE TRANSAXLE HOUSING OIL SEAL

- (a) Using SST, pull out the oil seal.  
SST 09308-00010



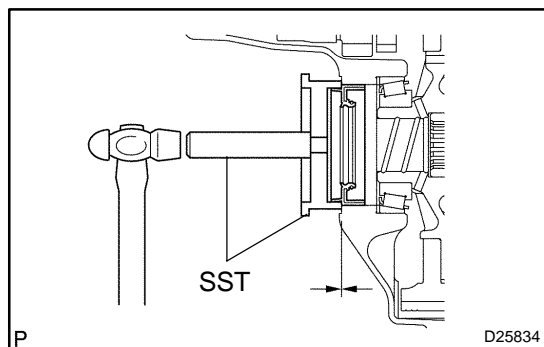
### 7. REMOVE DIFFERENTIAL SIDE BEARING RETAINER OIL SEAL

- (a) Using SST, pull out the oil seal.  
SST 09308-00010



### 8. INSTALL DIFFERENTIAL SIDE BEARING RETAINER OIL SEAL

- (a) Using SST and a hammer, drive in a new oil seal.  
SST 09316-6001 1 (09316-00011)  
**Oil seal drive in depth:**  
**0 ± 0.5 mm (0 ± 0.020 in.)**
- (b) Coat the lip of the oil seal with MP grease.  
SST 09316-6001 1 (09316-00011)

**9. INSTALL TRANSAXLE HOUSING OIL SEAL**

- (a) Using SST and a hammer, drive in a new oil seal.  
SST 09223-15020, 09950-70010 (09951-07150)

**Oil seal drive in depth:**

**0 ± 0.5 mm (0 ± 0.020 in.)**

- (b) Coat the lip of the oil seal with MP grease.

10. **INSTALL FRONT DRIVE SHAFT ASSY LH (SEE PAGE 30-8 )**
11. **INSTALL FRONT DRIVE SHAFT ASSY RH (SEE PAGE 30-8 )**
12. **INSTALL FRONT WHEELS**
13. **ADD AUTOMATIC TRANSAXLE FLUID**
14. **INSPECT AUTOMATIC TRANSAXLE FLUID (SEE PAGE 40-1 )**
15. **CHECK ABS SPEED SENSOR SIGNAL**  
w/ VSC (SEE PAGE 05-471 )  
w/o VSC (SEE PAGE 05-420 )

# SHIFT LOCK SYSTEM

40067-09

## ON-VEHICLE INSPECTION

### 1. CHECK SHIFT LOCK OPERATION

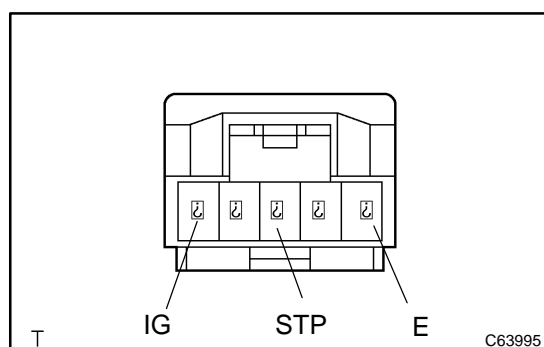
- Shift the shift lever to P position.
- Turn the ignition switch to LOCK.
- Check that the shift lever cannot be shifted to any other positions other than P.
- Turn the ignition switch to ON, depress the brake pedal and check that the shift lever can be shifted to any other positions.

### 2. CHECK SHIFT LOCK RELEASE BUTTON OPERATION

- Using a small screwdriver, remove the shift lock release cover.
- When operating the shift lever with the shift lock release button pressed, check that the lever can be shifted to any position other than P.

### 3. CHECK KEY INTERLOCK OPERATION

- Turn the ignition switch to ON.
- Depress the brake pedal and shift the shift lever to any other position other than P.
- Check that the ignition key cannot be turned to LOCK.
- Shift the shift lever to P position, turn the ignition key to LOCK and check that the ignition key can be removed.



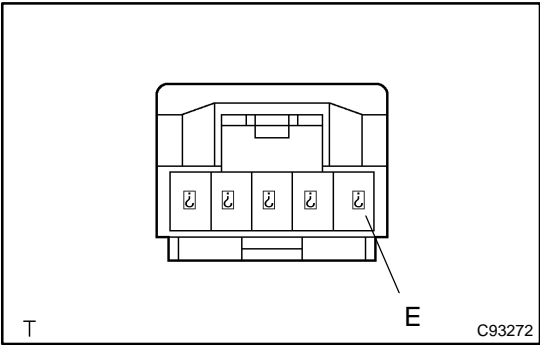
### 4. INSPECT SHIFT LOCK CONTROL UNIT ASSEMBLY

- Using a voltmeter, measure the voltage at each terminal.

HINT:

Do not disconnect the shift lock control unit assembly connector.

Terminal	Measuring Condition	Voltage (V)
3 (STP) - 1 (E)	Depress brake pedal	10 - 14
3 (STP) - 1 (E)	Release brake pedal	0
5 (IG) - 2 (E)	Ignition switch ON	10 - 14
5 (IG) - 2 (E)	Ignition switch OFF	0



- (b) Using an ohmmeter, measure the resistance at terminal E (1) and body ground.
- HINT:  
Do not disconnect the shift lock control unit assembly connector.

Terminal	Measuring Condition	Specified Value
1 (E) - Body ground	Always	Continuity

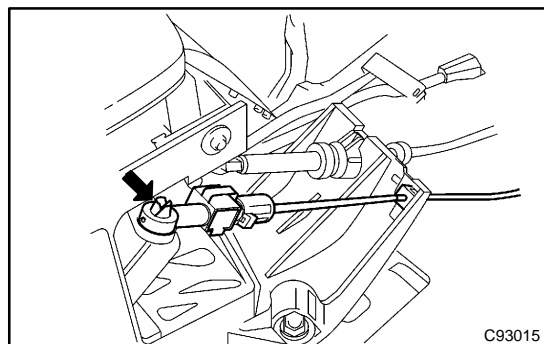


# FLOOR SHIFT ASSY

400FU-02

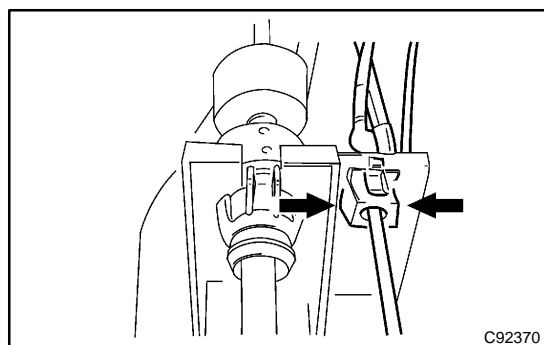
## OVERHAUL

1. REMOVE FRONT DOOR SCUFF PLATE LH (SEE PAGE 71-1 1)
2. REMOVE FRONT DOOR SCUFF PLATE RH (SEE PAGE 71-1 1)
3. REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (SEE PAGE 71-1 1)
4. REMOVE INSTRUMENT PANEL SUB-ASSY LOWER (SEE PAGE 71-1 1)
5. REMOVE INSTRUMENT PANEL SUB-ASSY UPPER (SEE PAGE 71-1 1)
6. REMOVE INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH (SEE PAGE 71-1 1)
7. REMOVE CONSOLE BOX ASSY (SEE PAGE 71-1 1)
8. REMOVE CONSOLE BOX CARPET
9. REMOVE CONSOLE BOX ASSY (SEE PAGE 71-1 1)
10. REMOVE INSTRUMENT PANEL FINISH PANEL END RH (SEE PAGE 71-1 1)
11. REMOVE INSTRUMENT PANEL FINISH PANEL END LH (SEE PAGE 71-1 1)
12. REMOVE AIR DUCT REAR NO.1 (SEE PAGE 55-17 )
13. REMOVE AIR DUCT REAR NO.2 (SEE PAGE 55-17 )
14. REMOVE CONSOLE BOX DUCT NO.1 (SEE PAGE 55-17 )

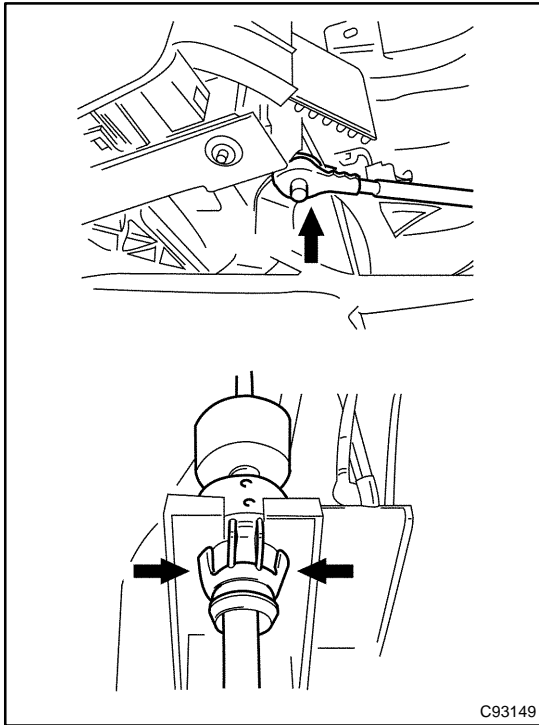


### 15. DISCONNECT FLOOR SHIFT PARKING LOCK CABLE ASSY

- (a) Disconnect the parking lock cable end from the lever pin of the floor shift assembly.

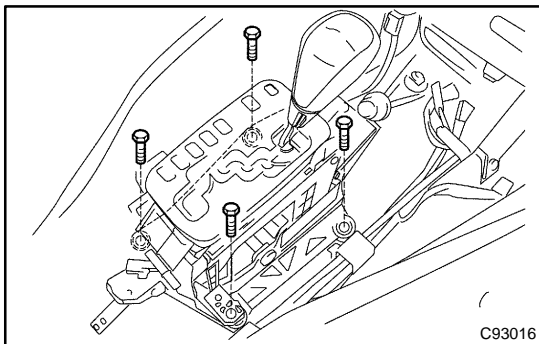


- (b) Using a screwdriver, disconnect the parking lock cable from the floor shift assembly and clamp.
- (c) Disconnect the cable clamp.



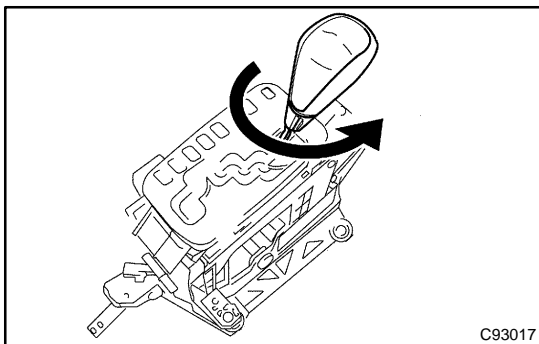
## 16. DISCONNECT TRANSMISSION CONTROL CABLE ASSY

- (a) Disconnect the floor shift transmission control cable from the rod of the floor shift assy.



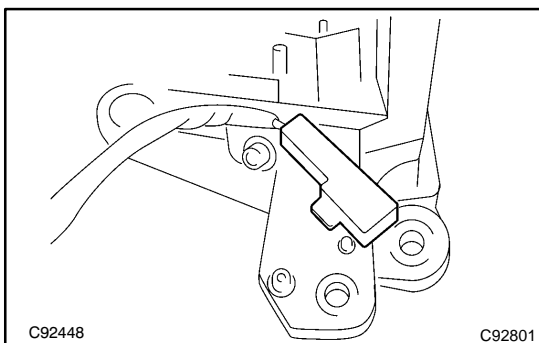
## 17. REMOVE FLOOR SHIFT ASSY

- (a) Disconnect the shift lock control computer connector.
- (b) Disconnect the indicator lamp wire connector.
- (c) Remove the 4 bolts and transmission floor shift assy.



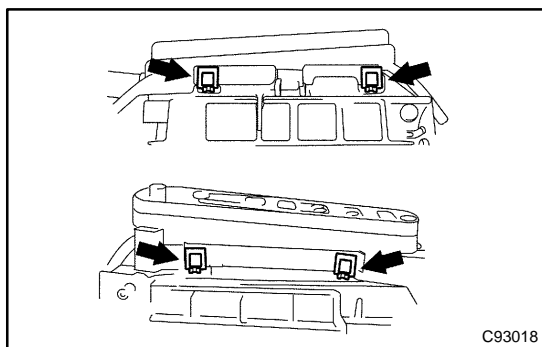
## 18. REMOVE SHIFT LEVER KNOB SUB-ASSY

- (a) Remove the floor shift lever knob from the shift lever.

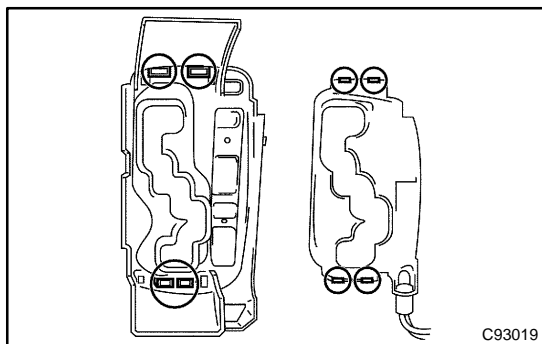


## 19. REMOVE FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSY

- (a) Disconnect the wire harness from the clamp.

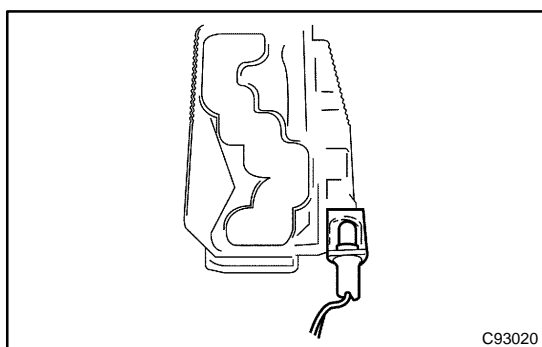


- (b) Using a screwdriver, release the 4 claws and remove the position indicator housing.



## 20. REMOVE POSITION INDICATOR LIGHT GUIDE

- (a) Using a screwdriver, release the 4 claws and remove the position indicator light guide.



## 21. REMOVE INDICATOR LAMP WIRE SUB-ASSY

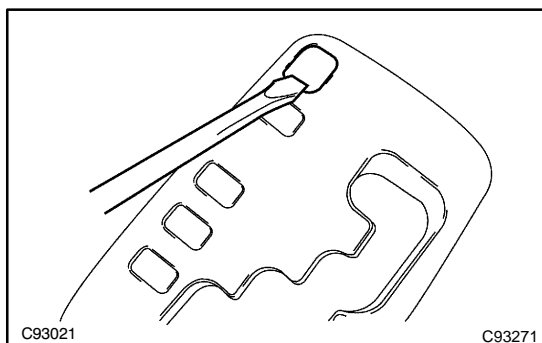
- (a) Remove the indicator lamp wire from the position indicator light guide.

## 22. REMOVE POSITION INDICATOR LAMP CAP

- (a) Remove the floor shift position indicator lamp cap from the floor shift position indicator lamp bulb.

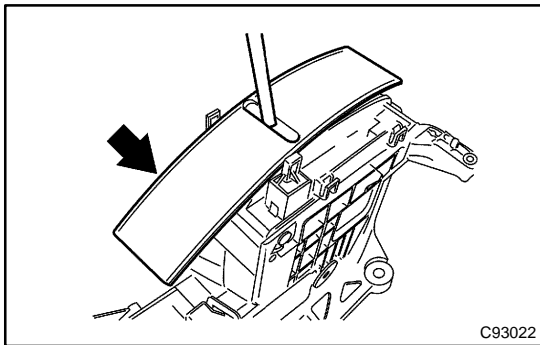
## 23. REMOVE POSITION INDICATOR LAMP BULB

- (a) Remove the floor shift position indicator lamp bulb from the indicator lamp wire.

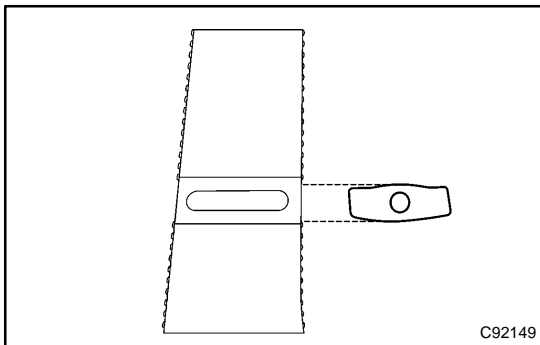


## 24. REMOVE SHIFT LOCK RELEASE BUTTON COVER

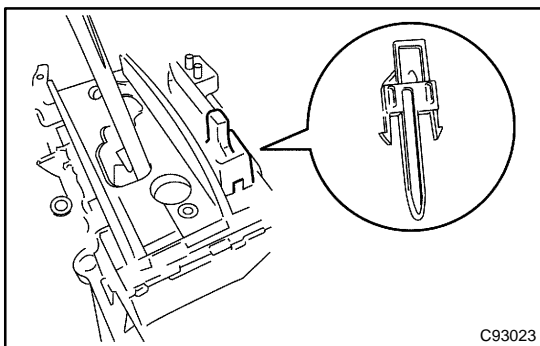
- (a) Using a screwdriver, remove the shift lock release button cover.

**25. REMOVE POSITION INDICATOR SLIDE COVER**

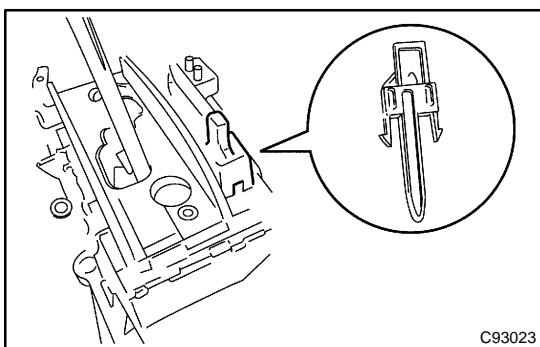
- (a) Remove the position indicator slide cover from the shift lever.

**26. REMOVE POSITION INDICATOR SLIDE COVER**

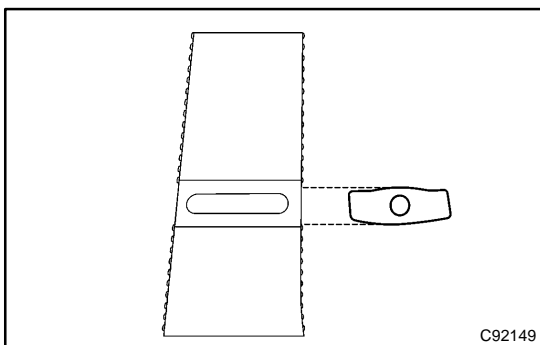
- (a) Remove the position indicator slide cover from the position indicator slide cover.

**27. REMOVE SHIFT LOCK RELEASE BUTTON**

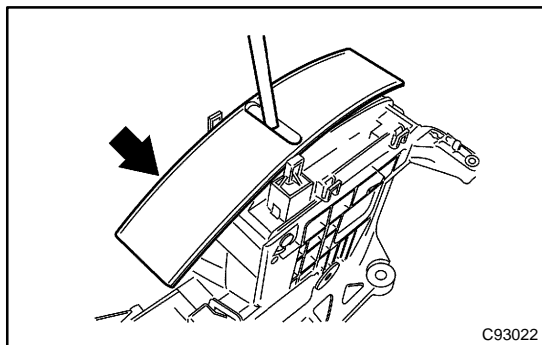
- (a) While pressing the 2 claws, remove the shift lock release button and shift lock release spring.

**28. INSTALL SHIFT LOCK RELEASE BUTTON**

- (a) Apply MP grease to the shift lock release spring and shift lock release button.  
 (b) Install the shift lock release button and shift lock release spring to the shift lever.

**29. INSTALL POSITION INDICATOR SLIDE COVER**

- (a) Install the position indicator slide cover to the position indicator slide cover.



### 30. INSTALL POSITION INDICATOR SLIDE COVER

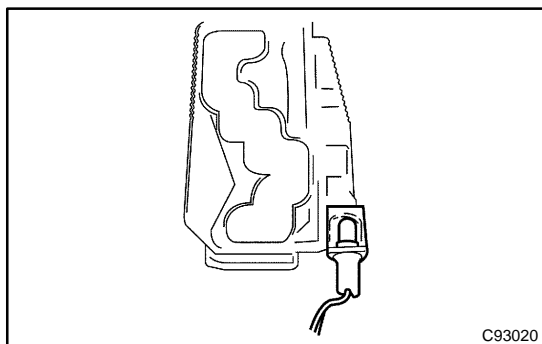
- (a) Install the position indicator slide cover to the shift lever.

### 31. INSTALL POSITION INDICATOR LAMP BULB

- (a) Install the floor shift position indicator lamp bulb to the indicator lamp wire.

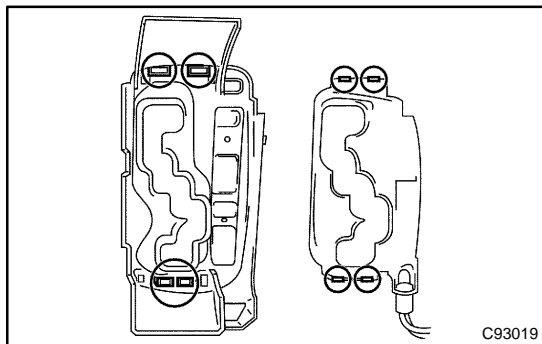
### 32. INSTALL POSITION INDICATOR LAMP CAP

- (a) Install the floor shift position indicator lamp cap to the floor shift position indicator lamp bulb.



### 33. INSTALL INDICATOR LAMP WIRE SUB-ASSY

- (a) Install the indicator lamp wire to the position indicator light guide.

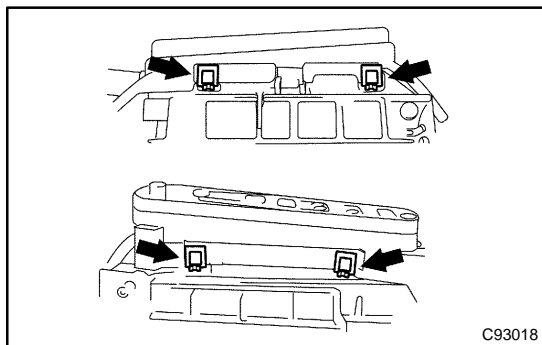


### 34. INSTALL POSITION INDICATOR LIGHT GUIDE

- (a) Install the position indicator light guide to the floor shift position indicator housing.

HINT:

Fit the claws securely.

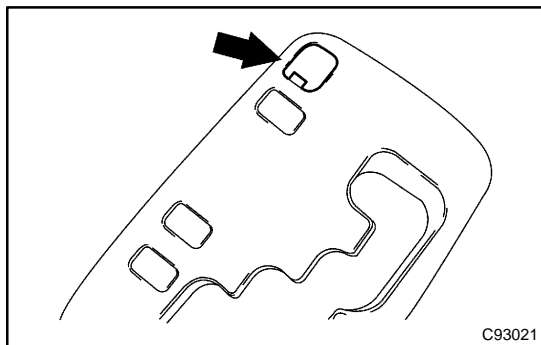


### 35. INSTALL FLOOR SHIFT POSITION INDICATOR HOUSING SUB-ASSY

- (a) Install the floor shift position indicator housing to the shift lever.

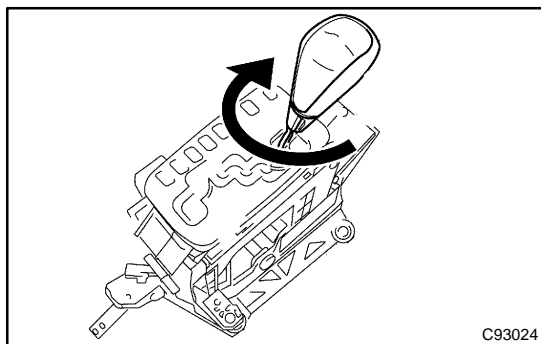
HINT:

Fit the claws securely.



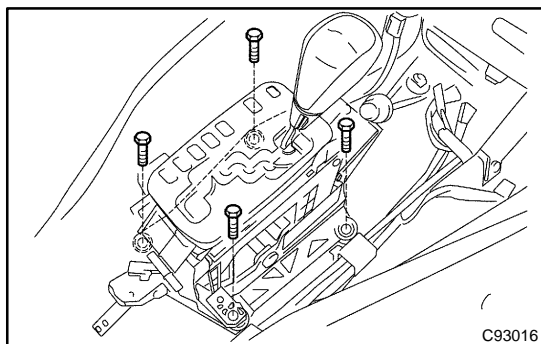
### 36. INSTALL SHIFT LOCK RELEASE BUTTON COVER

- (a) Install the shift lock release button cover to the position in indicator housing.



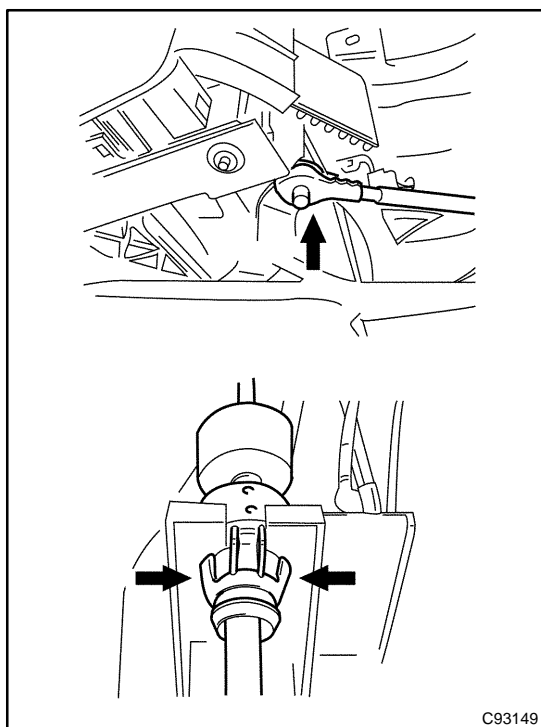
### 37. INSTALL SHIFT LEVER KNOB SUB-ASSY

- (a) Install the floor shift lever knob to the shift lever.



### 38. INSTALL FLOOR SHIFT ASSY

- (a) Install the floor shift assy to the vehicle with the 4 bolts.  
**Torque: 11.8 N·m (122 kgf·cm, 9 ft·lbf)**  
 (b) Connect the shift lock control computer.  
 (c) Connect the indicator lamp wire connector.

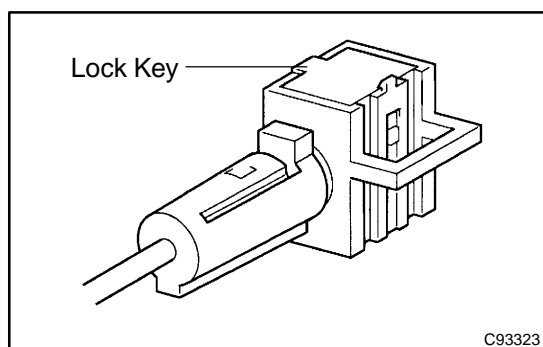


### 39. INSTALL TRANSMISSION CONTROL CABLE ASSY

- (a) Install the floor shift transmission control cable to the shift lever.

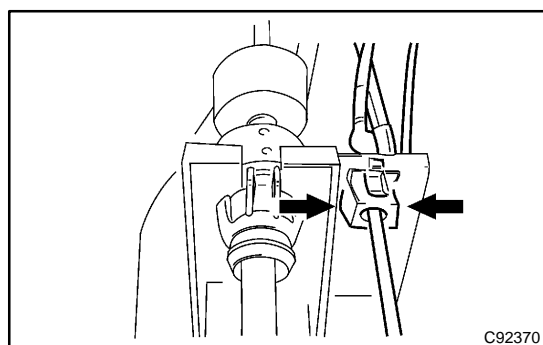
**HINT:**

Install it with the uneven surface facing up.

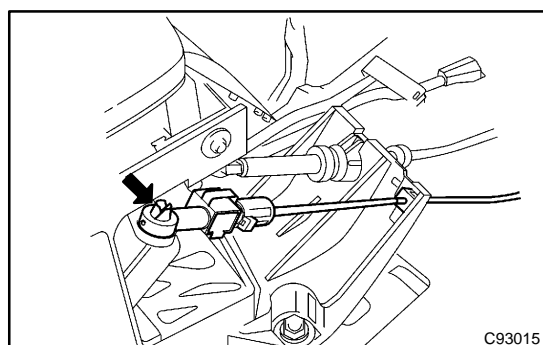


#### 40. INSTALL FLOOR SHIFT PARKING LOCK CABLE ASSY

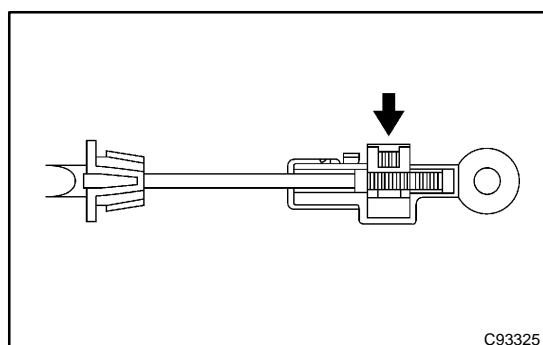
- (a) Using a screwdriver, unlock the claw of the lock key of automatic adjustment part.



- (b) Insert the slide cap into the through hole and install.  
(c) Shift the shift lever to P position and turn the ignition switch to Lock.



- (d) Insert the lever pin into the hole of the parking lock cable.



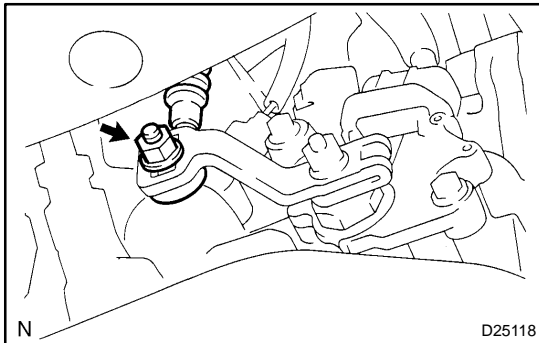
- (e) Lock the lock key.

41. INSTALL BATTERY
42. ADJUST SHIFT LEVER POSITION(SEE PAGE 40-40 )
43. INSPECT SHIFT LEVER POSITION(SEE PAGE 40-40 )
44. INSPECT CHECK KEY INTERLOCK OPERATION(SEE PAGE 40-31 )
45. INSPECT CHECK SHIFT LOCK OPERATION(SEE PAGE 40-31 )
46. INSPECT CHECK SHIFT LOCK RELEASE BUTTON OPERATION(SEE PAGE 40-31 )
47. INSTALL CONSOLE BOX DUCT NO.1(SEE PAGE 55-17 )
48. INSTALL AIR DUCT REAR NO.2(SEE PAGE 55-17 )
49. INSTALL AIR DUCT REAR NO.1(SEE PAGE 55-17 )

## ADJUSTMENT

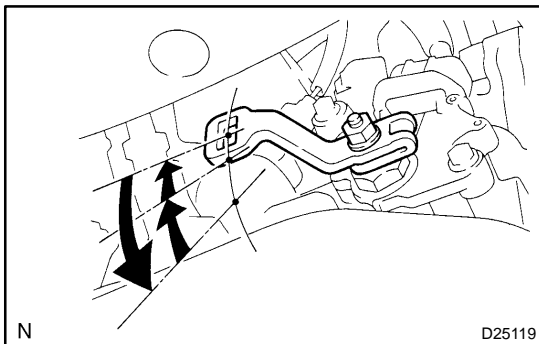
### 1. INSPECT SHIFT LEVER POSITION

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



### 2. ADJUST SHIFT LEVER POSITION

- (a) Loosen the nut on the control shaft lever.



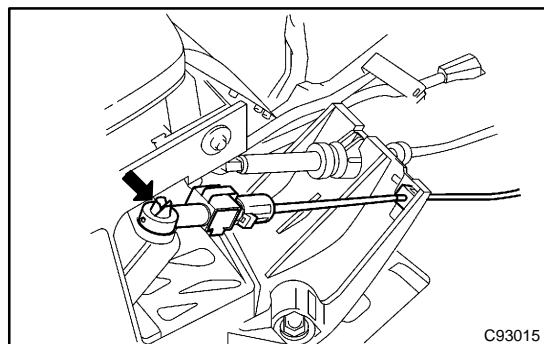
- (b) Push the control shaft fully downward.
  - (c) Return the control shaft lever 2 notches to N position.
  - (d) Set the shift lever to N position.
  - (e) While holding the shift lever lightly toward the R position side, tighten the shift lever nut.
- Torque: 14.7 N·m (150 kgf·cm, 10 ft·lbf)**
- (f) Start the engine and make sure that the vehicle moves forward when shifting the lever from N to D position and moves rearward when shifting it to R position.



# FLOOR SHIFT PARKING LOCK CABLE ASSY REPLACEMENT

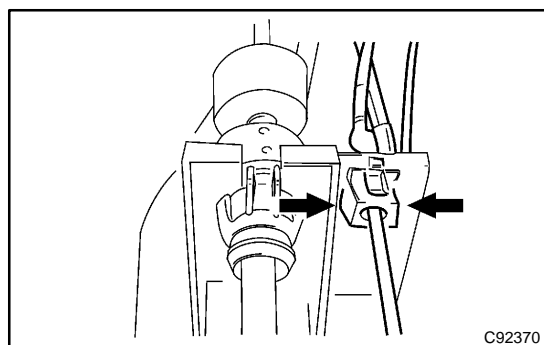
400FV-02

1. REMOVE FRONT DOOR SCUFF PLATE LH (SEE PAGE 71-1 1)
2. REMOVE FRONT DOOR SCUFF PLATE RH (SEE PAGE 71-1 1)
3. REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (SEE PAGE 71-1 1)
4. REMOVE INSTRUMENT PANEL SUB-ASSY LOWER (SEE PAGE 71-1 1)
5. REMOVE INSTRUMENT PANEL SUB-ASSY UPPER (SEE PAGE 71-1 1)
6. REMOVE INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH (SEE PAGE 71-1 1)
7. REMOVE CONSOLE PANEL UPPER REAR (SEE PAGE 71-1 1)
8. REMOVE CONSOLE BOX CARPET
9. REMOVE CONSOLE BOX ASSY (SEE PAGE 71-1 1)
10. REMOVE INSTRUMENT PANEL FINISH PANEL END LH (SEE PAGE 71-1 1)
11. REMOVE INSTRUMENT PANEL FINISH PANEL END RH (SEE PAGE 71-1 1)
12. REMOVE AIR DUCT REAR NO.1 (SEE PAGE 55-17 )
13. REMOVE AIR DUCT REAR NO.2 (SEE PAGE 55-17 )
14. REMOVE CONSOLE BOX DUCT NO.1 (SEE PAGE 55-17 )

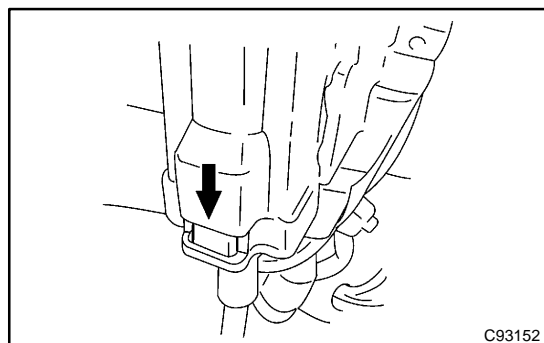


## 15. REMOVE FLOOR SHIFT PARKING LOCK CABLE ASSY

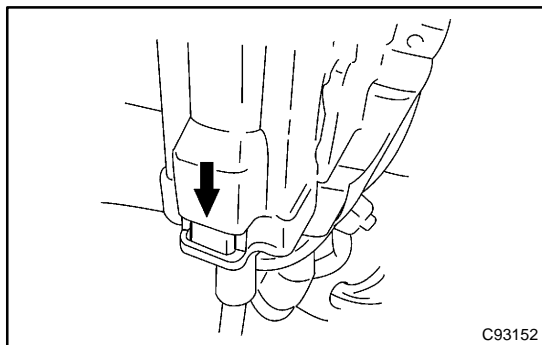
- (a) Disconnect the parking lock cable end from the lever pin of the floor shift assembly.



- (b) Using a screwdriver, disconnect the parking lock cable from the floor shift assembly and clamp.
- (c) Disconnect the cable clamp.
- (d) Turn the ignition switch to ACC or ON.

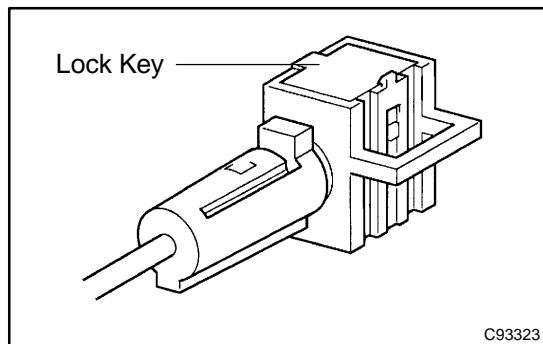


- (e) Using a screwdriver, remove the cable from the upper bracket.

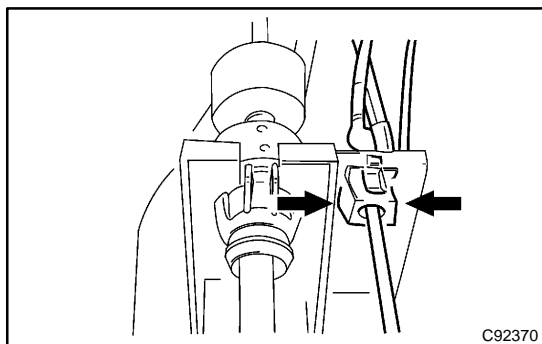


## 16. INSTALL FLOOR SHIFT PARKING LOCK CABLE ASSY

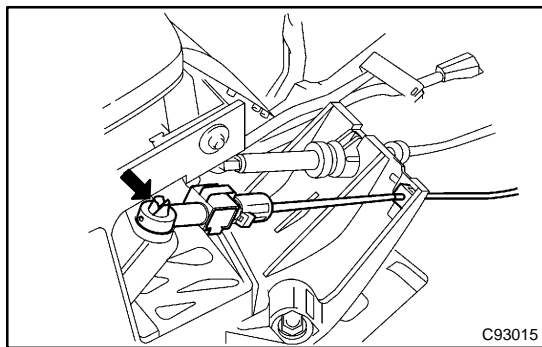
- (a) Turn the ignition switch to ACC or ON.
- (b) Connect the cable to the upper bracket.
- (c) Connect the cable clamp.
- (d) Shift the shift lever to P range and turn the ignition switch to LOCK.



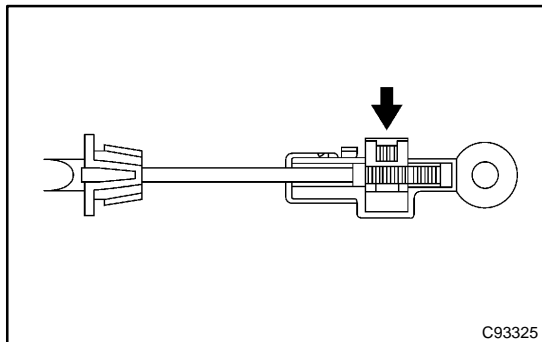
- (e) Using a screwdriver, unlock the claw of the lock key of automatic adjustment part.



- (f) Insert the slide cap into the through hole and install.



- (g) Insert the lever pin into the hole of the parking lock cable.



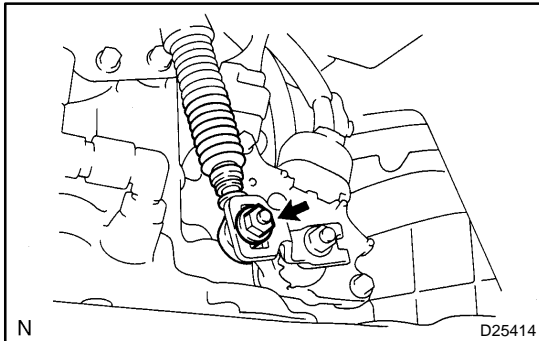
- (h) Lock the lock key.

17. INSPECT CHECK KEY INTERLOCK OPERATION(See page 40-31 )
18. INSTALL CONSOLE BOX DUCT NO.1
19. INSTALL AIR DUCT REAR NO.2
20. INSTALL AIR DUCT REAR NO.1
21. INSTALL INSTRUMENT PANEL FINISH PANEL END RH
22. INSTALL INSTRUMENT PANEL FINISH PANEL END LH
23. INSTALL CONSOLE BOX ASSY
24. INSTALL CONSOLE BOX CARPET
25. INSTALL CONSOLE PANEL UPPER REAR
26. INSTALL INSTRUMENT PANEL INSERT SUB-ASSY LOWER LH
27. INSTALL INSTRUMENT PANEL SUB-ASSY UPPER
28. INSTALL INSTRUMENT PANEL SUB-ASSY LOWER
29. INSTALL INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1
30. INSTALL FRONT DOOR SCUFF PLATE RH
31. INSTALL FRONT DOOR SCUFF PLATE LH

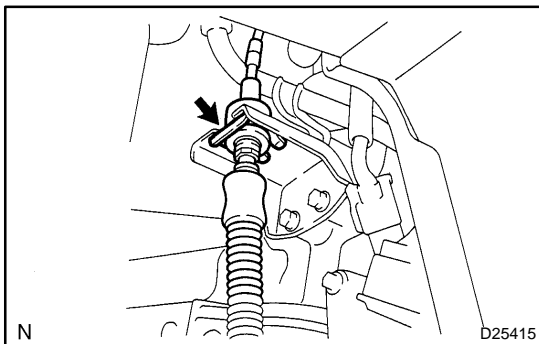
# TRANSMISSION CONTROL CABLE ASSY REPLACEMENT

400FW-02

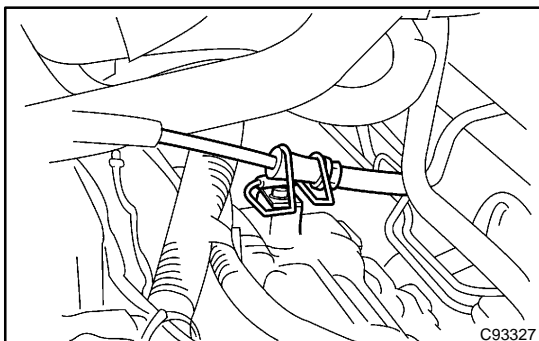
1. REMOVE INSTRUMENT PANEL SAFETY PAD SUB-ASSY (SEE PAGE 71-1 1)
2. REMOVE AIR CONDITIONING RADIATOR ASSY (SEE PAGE 55-17 )
3. REMOVE AIR BAG SENSOR ASSY CENTER (SEE PAGE 60-55 )
4. REMOVE BATTERY
5. REMOVE AIR CLEANER ASSY
6. REMOVE AIR CLEANER HOSE NO.1
7. REMOVE INTAKE AIR RESONATOR SUB-ASSY



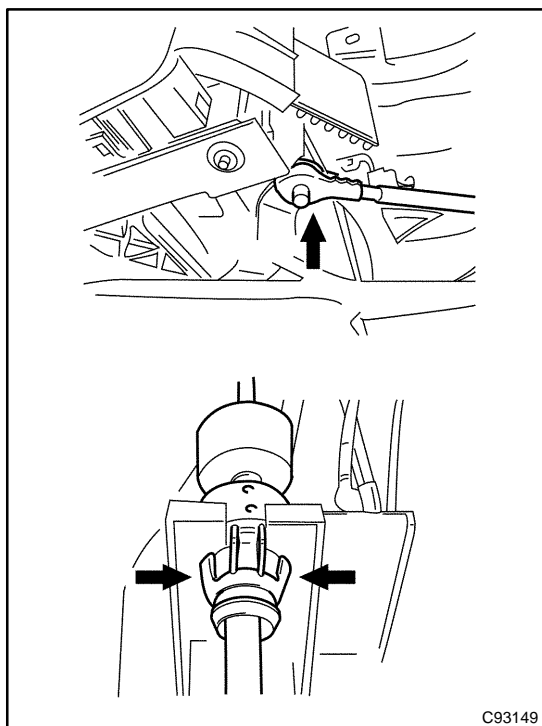
8. REMOVE TRANSMISSION CONTROL CABLE ASSY
  - (a) Remove the nut from the control shaft lever.
  - (b) Disconnect the control cable from the control shaft lever.



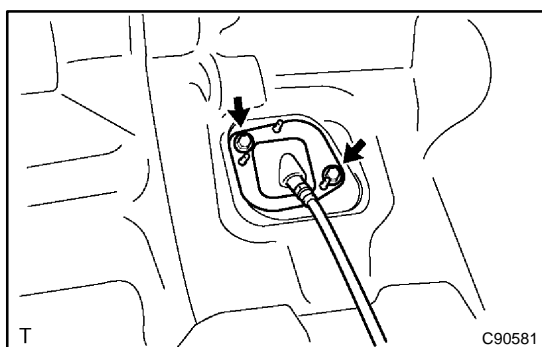
- (c) Remove the clip and disconnect the control cable from the control cable bracket.



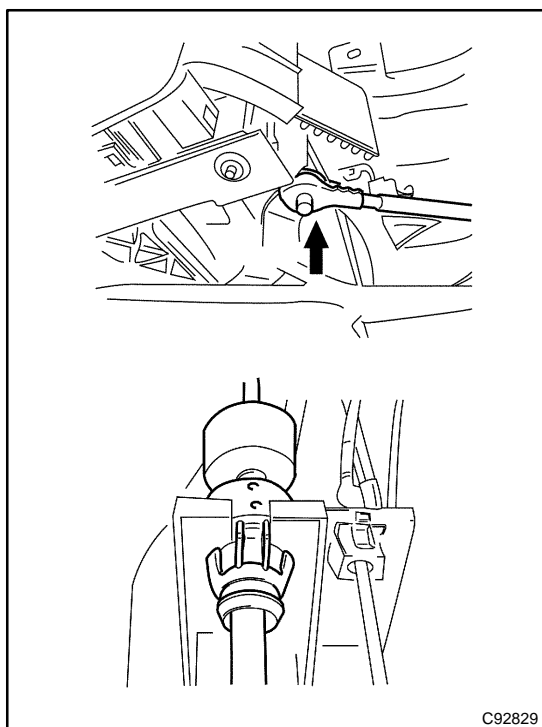
- (d) Disconnect the control cable from the control cable clamp.



- (e) Disconnect the floor shift cable from the rod of the floor shift assy.



- (f) Remove the 2 bolts and shift cable grommet retainer No.2.  
(g) Pull out the control cable from the body.

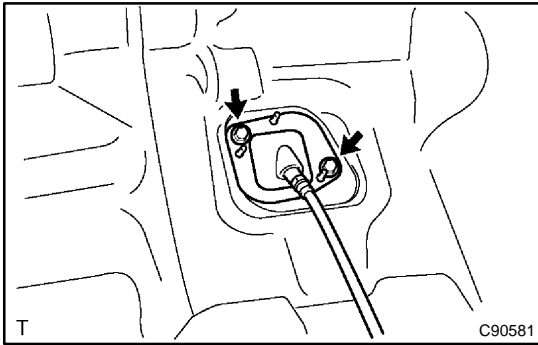


## 9. INSTALL TRANSMISSION CONTROL CABLE ASSY

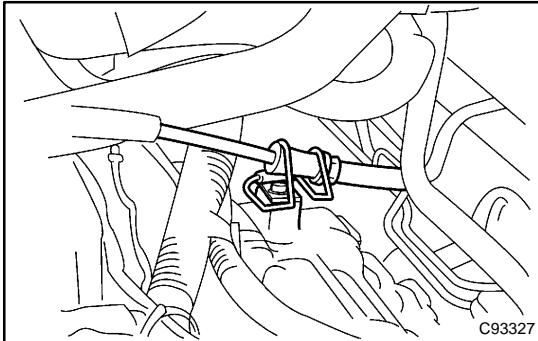
- (a) put in the control cable to the body.  
(b) Install the shift cable grommet retainer No.2 to the floor shift cable.  
(c) Install the floor shift cable, as shown in the illustration.

HINT:

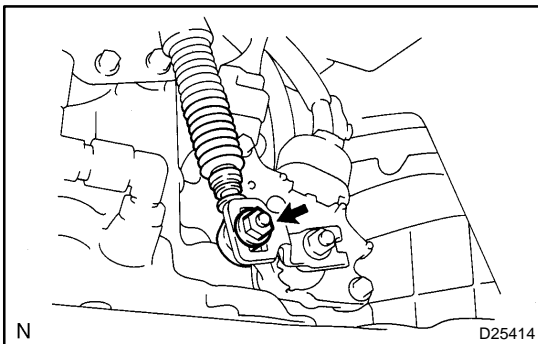
Install it with the uneven surface facing up.



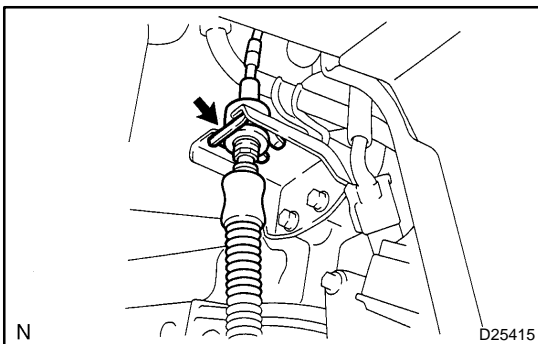
- (d) Install the shift cable grommet retainer No.2 with the 2 bolts.  
**Torque: 4.9 N·m (50 kgf·cm, 43 in·lbf)**



- (e) Connect the control cable to the control cable clamp.



- (f) Temporarily install the control cable to the control shaft lever with nuts.



- (g) Install the control cable and a new clip to the bracket.

10. INSTALL INTAKE AIR RESONATOR SUB-ASSY
11. INSTALL AIR CLEANER HOSE NO.1
12. INSTALL AIR CLEANER ASSY
13. INSTALL AIR BAG SENSOR ASSY CENTER (SEE PAGE 60-55 )
14. INSTALL AIR CONDITIONING RADIATOR ASSY (SEE PAGE 55-17 )
15. INSTALL INSTRUMENT PANEL SAFETY PAD SUB-ASSY (SEE PAGE 71-1 1)
16. INSTALL BATTERY
17. ADJUST SHIFT LEVER POSITION (SEE PAGE 40-40 )
18. INSPECT SHIFT LEVER POSITION (SEE PAGE 40-40 )