

Automatic Transmission - Trans - LS430

AUTOMATIC TRANSMISSION ASSY

PRECAUTION

1. The automatic transmission is composed of highly precision-finished parts which need careful inspection before reassembly because even a small nick could cause fluid leakage or affect performance. The instructions here are organized so that you work on only one component group at a time. This will help avoid confusion from similar-looking parts of different sub-assemblies being on your workbench at the same time. The component groups should be inspected and repaired from the converter housing side. Inspect, repair and reassemble 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: ATF WS
2. All disassembled parts should be washed clean and any fluid passages and holes should be blown through with compressed air.
3. Dry all parts with compressed air. Never use shop rags.
4. When using compressed air, be careful not to aim at yourself to prevent accidentally spraying ATF or kerosene on your face.
5. Only 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 or 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. When replacing a worn bushing, the sub-assembly containing the bushing must also be replaced.
14. Check thrust bearings and races for wear or damage. Replace them as necessary.
15. Use petroleum jelly to keep parts in place.
16. When working with FIPG material, 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 any 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.

AUTOMATIC TRANSMISSION FLUID

ADJUSTMENT

1. BEFORE TRANSMISSION FILL

- This transmission requires Toyota Genuine ATF WS transmission fluid.
- After servicing the transmission, you must refill the transmission with the correct amount of fluid.

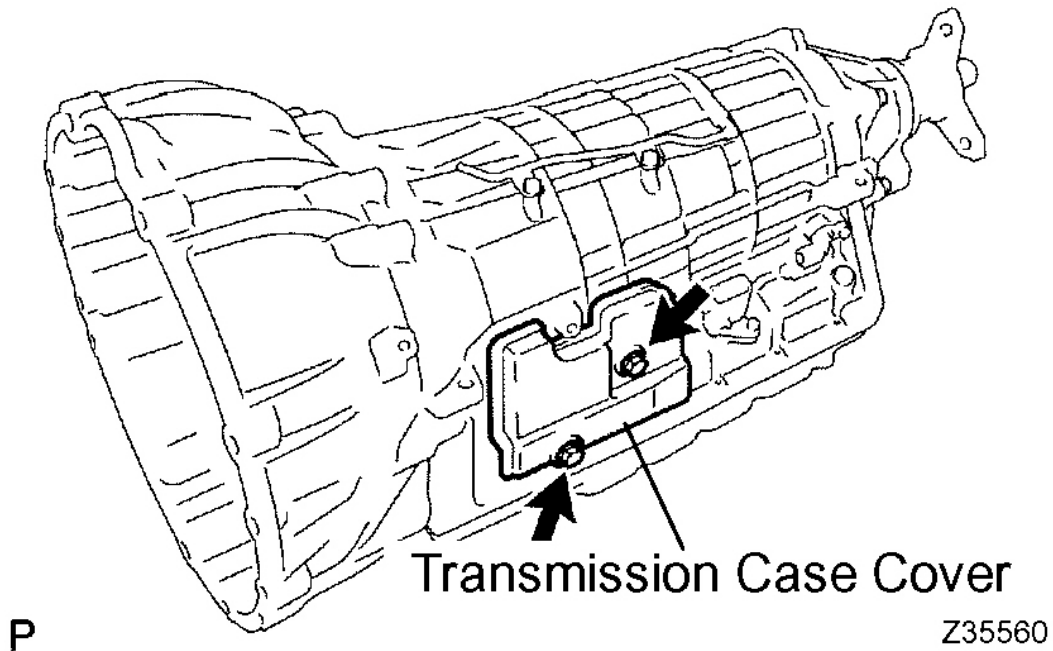
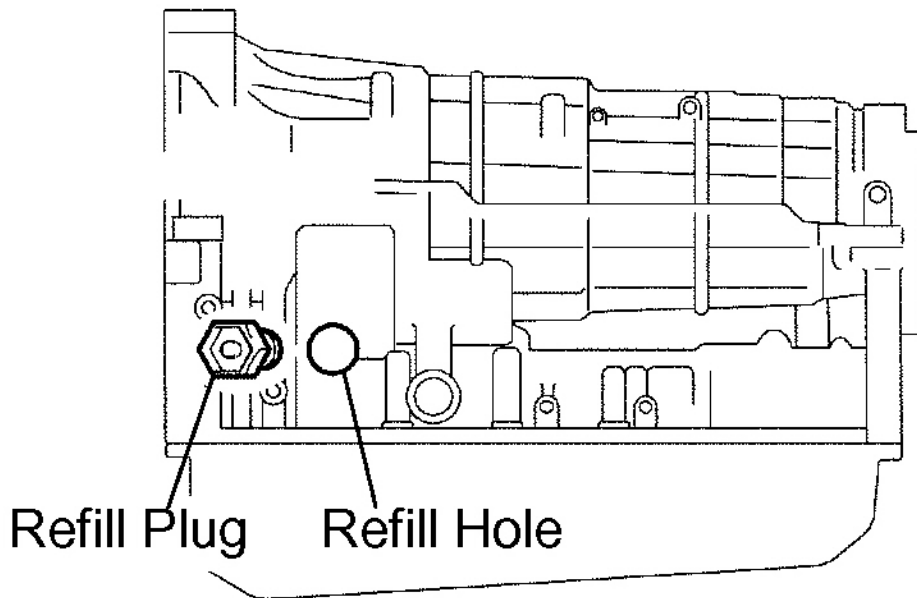


Fig. 1: Identifying Transmission Case Cover Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

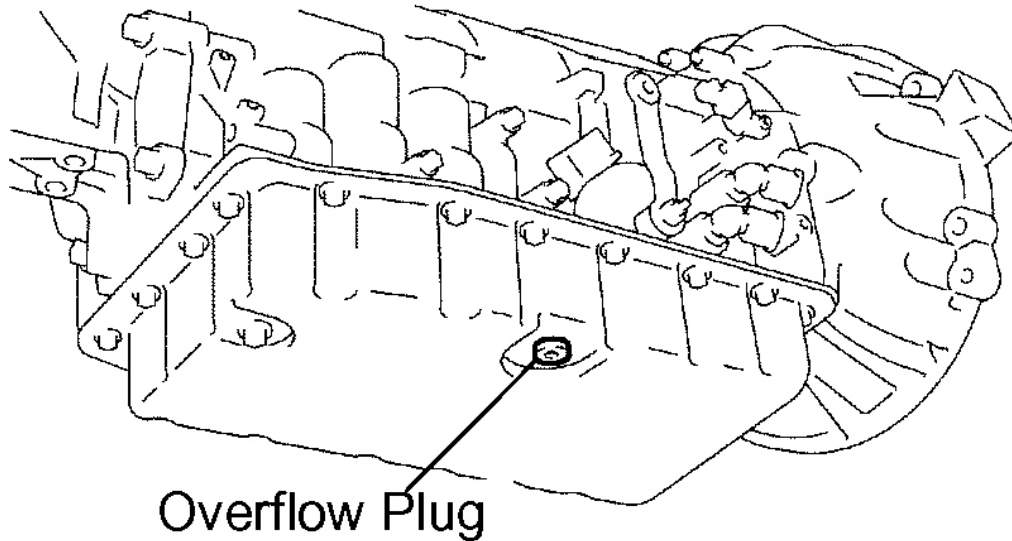
- Maintain the vehicle in a horizontal position while adjusting fluid level.
- Proceed to step 2 if you replaced the transmission pan, drain plug, valve body and/or torque converter.
- Proceed to step 3 after removing the two bolts, transmission case cover and refill plug if you replaced the transmission hose, output shaft oil seal and/or radiator.



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Fig. 2: Removing Refill Plug
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



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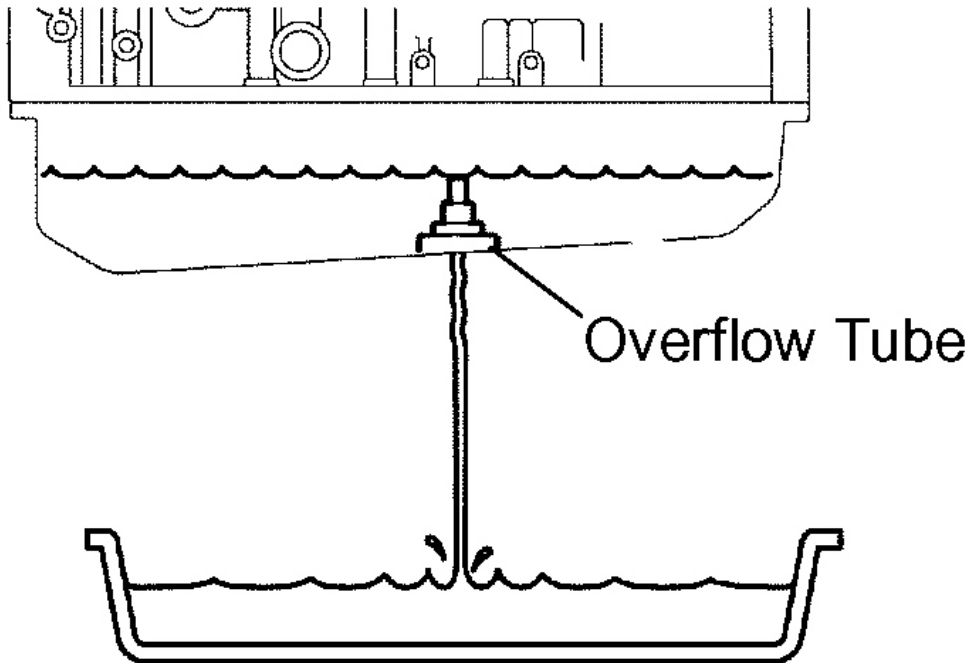
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Fig. 3: Identifying Overflow Plug

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. TRANSMISSION PAN FILL

- a. Remove the refill plug and overflow plug.
- b. Fill the transmission through the refill hole until fluid begins to trickle out of the overflow tube.
- c. Reinstall the overflow plug.



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Fig. 4: Identifying Overflow Tube

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. TRANSMISSION FILL

- a. Fill the transmission with the correct amount of fluid as listed in the table below.
- b. Reinstall the refill plug to avoid fluid splash.

TRANSMISSION FLUID REFERENCE

Performed Repair	Fill Amount
Radiator removal	0.7 liters (0.74 US qts, 0.61 Imp. qts)
Transmission hose and pipe removal	0.6 liters (0.63 US qts, 0.53 Imp. qts)

Output shaft oil seal replacement	0.4 liters (0.42 US qts, 0.35 Imp. qts)
Transmission pan and drain plug removal	1.3 liters (1.37 US qts, 1.14 Imp. qts)
Transmission valve body removal	3.9 liters (4.12 US qts, 3.43 Imp. qts)
Torque converter replacement	5.3 liters (5.60 US qts, 4.66 Imp. qts)
Entire transmission assembly	7.2 liters (7.61 US qts, 6.34 Imp. qts)

HINT:

If you cannot add the listed amount of fluid, do the following:

1. Install the refill plug.
2. Allow the engine to idle with air conditioning OFF.
3. Move the shift lever through entire gear range to circulate fluid.
4. Wait for 30 seconds with the engine idling.
5. Stop the engine.
6. Remove the refill plug and add fluid.
7. Reinstall the refill plug.

4. FLUID CIRCULATION

- a. Allow the engine to idle with the air conditioning OFF.
- b. Move the shift lever through entire gear range to circulate fluid.

5. FLUID TEMPERATURE CHECK

NOTE: **On vehicles with air suspension, perform step c if you jack up the vehicle while the engine is running.**

- a. With hand-held tester
 1. Connect the hand-held tester to the DLC3.

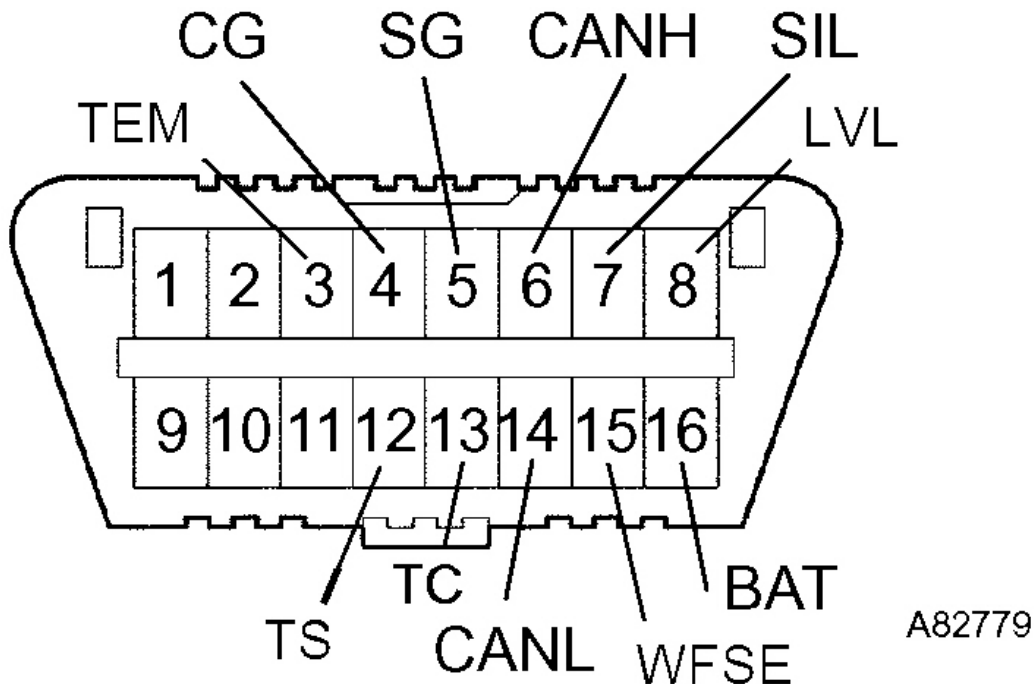


Fig. 5: Identifying DLC3 Terminals

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Select the tester menus: OBD/MOBD, ENGINE, DATA LIST and A/T.
 3. Check A/T OIL TEMP.
 4. Allow the engine to idle until the fluid temperature reaches 46°C (115°F).
- b. Without hand-held tester (Using D shift indicator)
1. Create a short circuit between CG (4) and TC (13) of the DLC3 terminals using SST (09843-18040).
 2. Move the shift lever back and forth between N and D at 1.5 seconds interval for six seconds.
 3. The D shift indicator on the combination meter comes on for two seconds when the combination meter begins to detect the fluid temperature.
 4. The D shift indicator comes on again when the fluid temperature reaches 46°C (115°F) and blinks when it exceeds 56°C (130°F).
- c. For vehicles with air suspension (Using D shift indicator)
1. Create a short circuit between CG (4), OPA (11) and TC (13) of the DLC3 terminals using SST (09843-18040).
 2. Move the shift lever back and forth between N and D at 1.5 seconds interval for six seconds.
 3. The D shift indicator on the combination meter comes on for two seconds when the combination meter begins to detect the fluid temperature.

4. The D shift indicator comes on again when the fluid temperature reaches 46°C (115°F) and blinks when it exceeds 56°C (130°F).
5. Allow the engine to idle until the fluid temperature reaches 46°C (115°F).

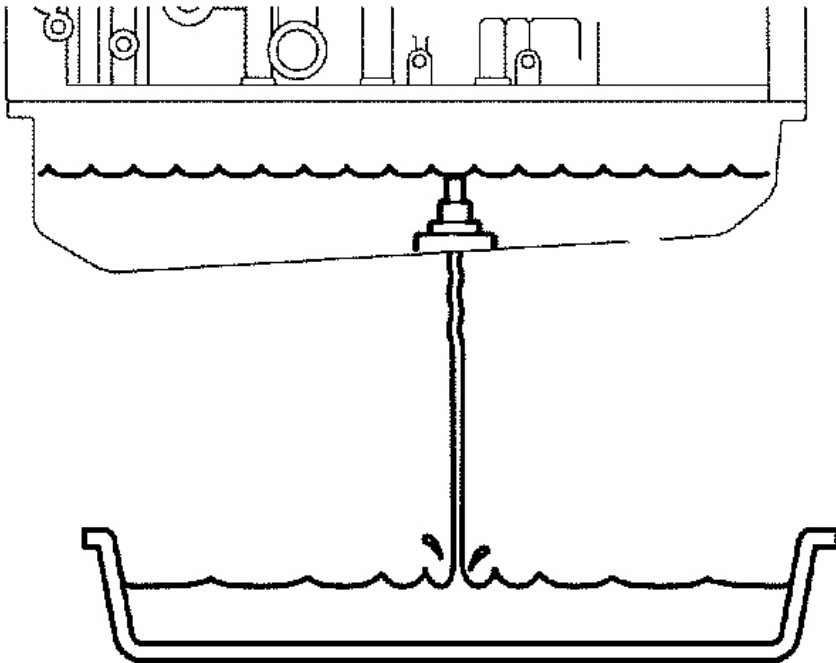
HINT:

The fluid temperature should be less than 30°C (86°F) before check the fluid temperature.

6. FLUID LEVEL CHECK

NOTE: The fluid temperature must be between 46°C (115°F) and 56°C (130°F) to check the fluid level.

- a. Remove the overflow plug with the engine idling.
- b. Check that the fluid comes out of the overflow tube.
 - If fluid does not come out, proceed to step 7
 - If fluid comes out, wait until the over-flow slows to a trickle and proceed to step 8.



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Fig. 6: Removing Overflow Plug
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. TRANSMISSION

- a. Install the overflow plug.
- b. Stop the engine.
- c. Remove the refill plug.
- d. Add 0.4 liters (0.42 US qts, 0.35 Imp. qts) of fluid.
- e. Allow the engine to idle and wait for 10 seconds.
- f. Proceed to next step.

8. COMPLETE

- a. Install the overflow plug with a new gasket.
- b. Stop the engine.
- c. Install the refill plug with a new gasket.
- d. Install the transmission case cover with the two bolts.

Torque:

20 N.m (204 kgf.cm, 15 ft.lbf) for overflow plug

39 N.m (400 kgf.cm, 53 ft.lbf) for refill plug

PARK/NEUTRAL POSITION SWITCH ASSY

REPLACEMENT

1. **DISCONNECT BATTERY NEGATIVE TERMINAL**
2. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.2 (SEE REPLACEMENT)**
3. **REMOVE INSTRUMENT PANEL GARNISH SUB-ASSY LH (SEE REPLACEMENT)**
4. **REMOVE INSTRUMENT PANEL FINISH PANEL (SEE REPLACEMENT)**
5. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (SEE REPLACEMENT)**
6. **REMOVE SWITCH BRACE HOLE COVER (SEE REPLACEMENT)**
7. **REMOVE INSTRUMENT PANEL SAFETY PAD SUB-ASSY NO.1 (SEE REPLACEMENT)**
8. **REMOVE INSTRUMENT PANEL CUP HOLDER ASSY (SEE REPLACEMENT)**
9. **REMOVE CONSOLE UPPER REAR PANEL SUB-ASSY (SEE REPLACEMENT)**
10. **REMOVE CONSOLE BOX CARPET (SEE REPLACEMENT)**
11. **REMOVE REAR CONSOLE ARMREST ASSY (SEE REPLACEMENT)**
12. **REMOVE INSTRUMENT PANEL FINISH PANEL LOWER CENTER (SEE REPLACEMENT)**
13. **REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY CENTER (SEE REPLACEMENT)**
14. **REMOVE CONSOLE PANEL SUB-ASSY UPPER (SEE REPLACEMENT)**
15. **REMOVE CONSOLE BOX (SEE REPLACEMENT)**
16. **SEPARATE OXYGEN SENSOR (SEE REPLACEMENT)**

17. **REMOVE FRONT FLOOR BRACE CENTER (SEE REPLACEMENT)**
18. **REMOVE EXHAUST PIPE ASSY (SEE REPLACEMENT)**
19. **REMOVE FRONT FLOOR HEAT INSULATOR NO.1 (SEE REPLACEMENT)**
20. **REMOVE PROPELLER W/CENTER BEARING SHAFT ASSY (SEE OVERHAUL)**
SST 09922-10010
21. **SEPARATE FLOOR SHIFT GEAR SHIFTING ROD SUB-ASSY**
 - a. Remove the nut and separate the floor shift gear shifting rod.

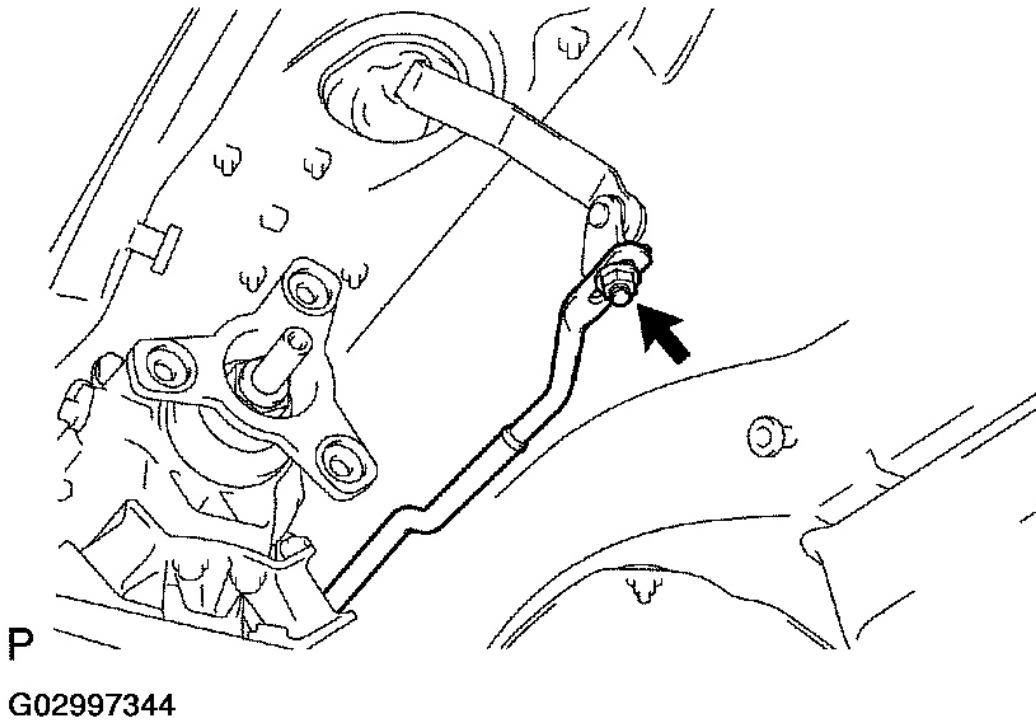
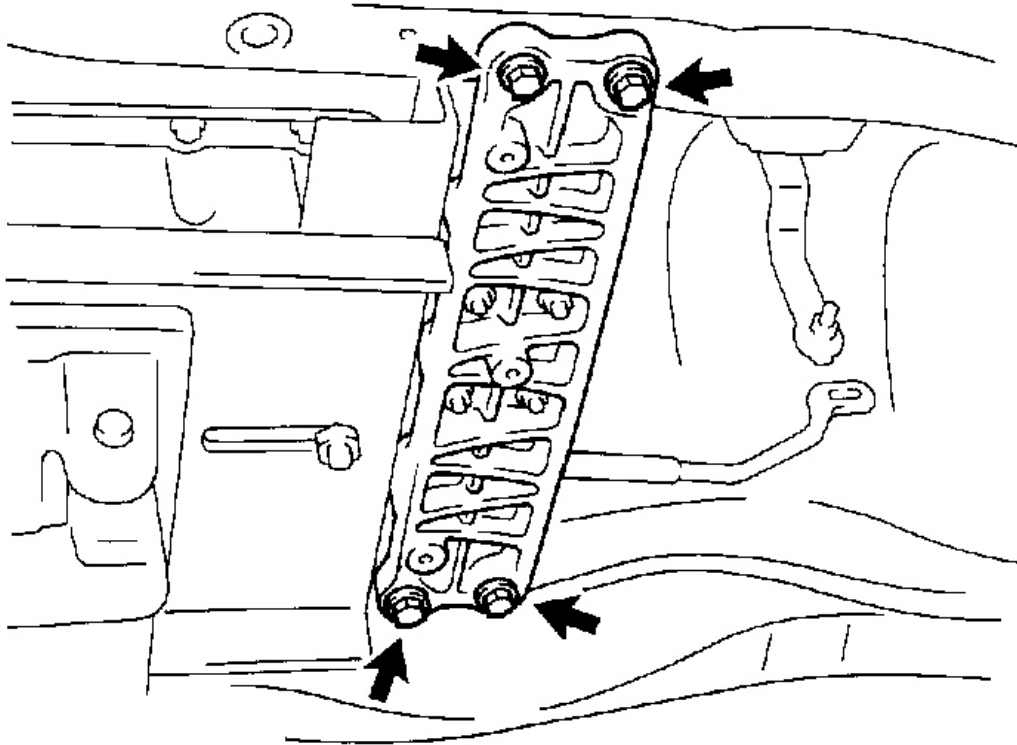


Fig. 7: Removing Nut And Separating Floor Shift Gear Shifting Rod
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

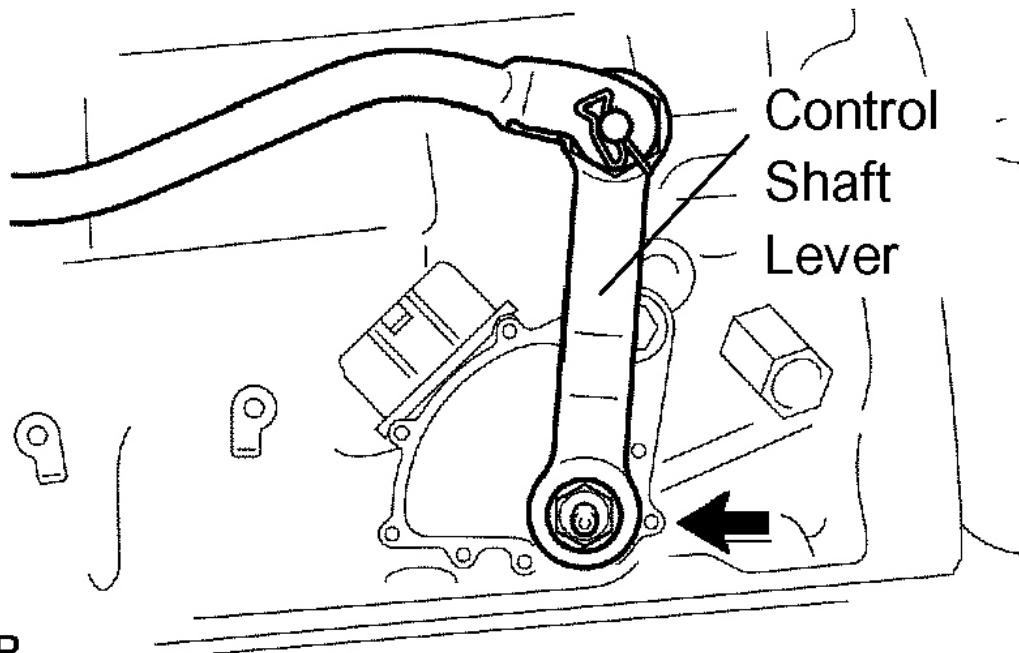
22. **SUPPORT AUTOMATIC TRANSMISSION ASSY**
 - a. Support the automatic transmission assy with a transmission jack.
23. **SEPARATE ENGINE REAR MOUNTING MEMBER**
 - a. Remove the 4 bolts and separate the engine rear mounting member.



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Fig. 8: Removing 4 Bolts And Separating Engine Rear Mounting Member
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

24. **REMOVE TRANSMISSION CONTROL SHAFT LEVER RH**
 - a. Remove the nut and transmission control shaft lever RH.



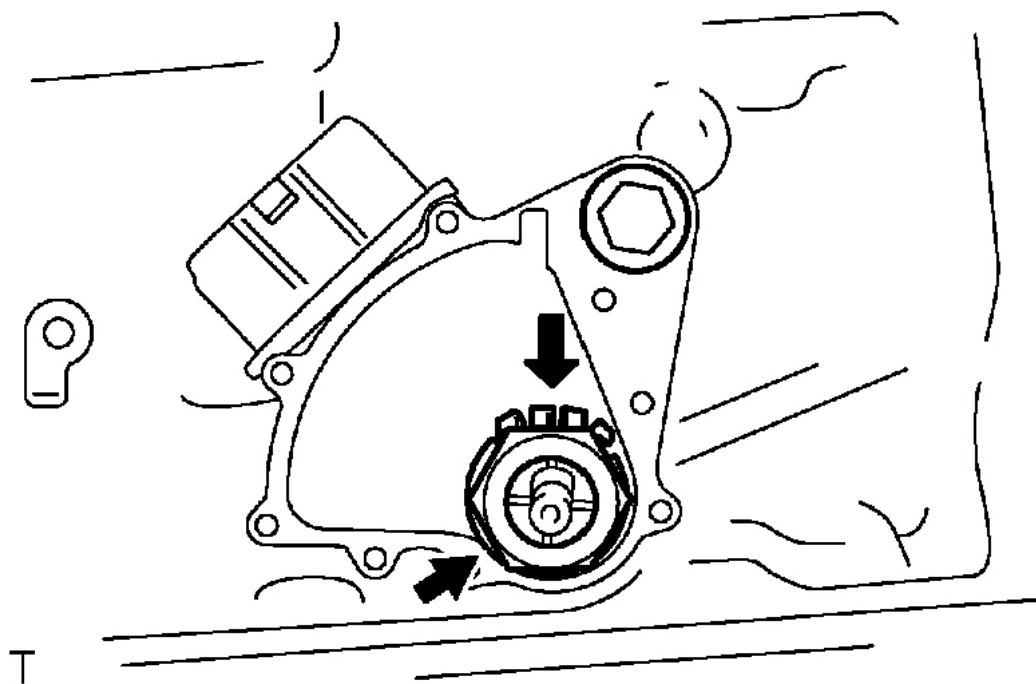
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Fig. 9: Removing Nut And Transmission Control Shaft Lever RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

25. REMOVE PARK/NEUTRAL POSITION SWITCH ASSY

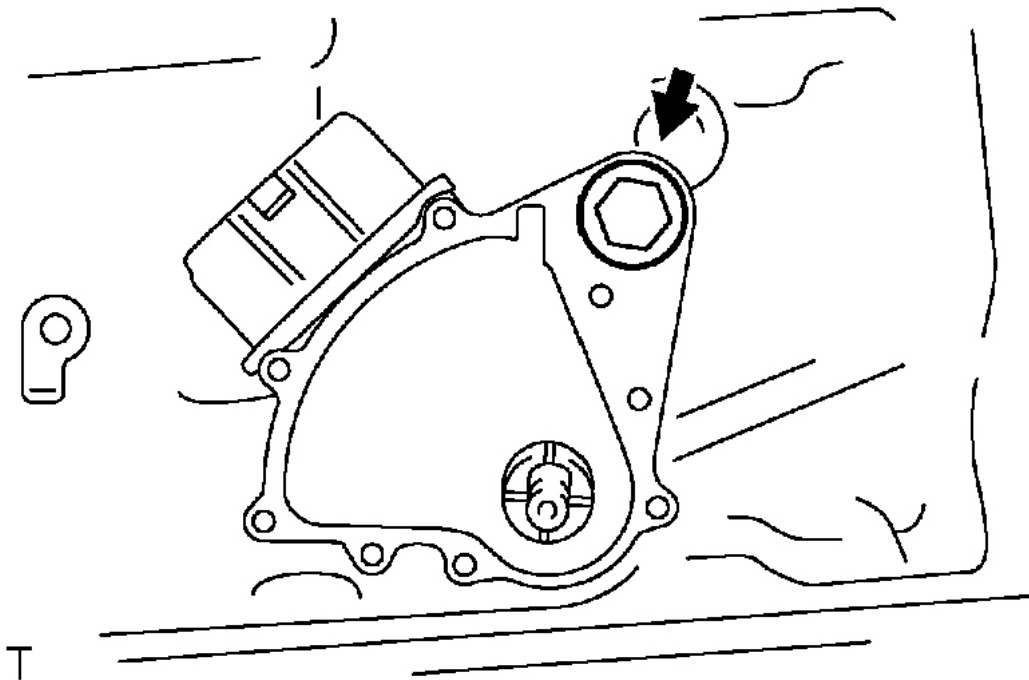
- a. Disconnect the park/neutral position switch connector.
- b. Using a screwdriver, pry out the lock washer.
- c. Remove the lock nut and lock washer.



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Fig. 10: Removing Lock Nut And Lock Washer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

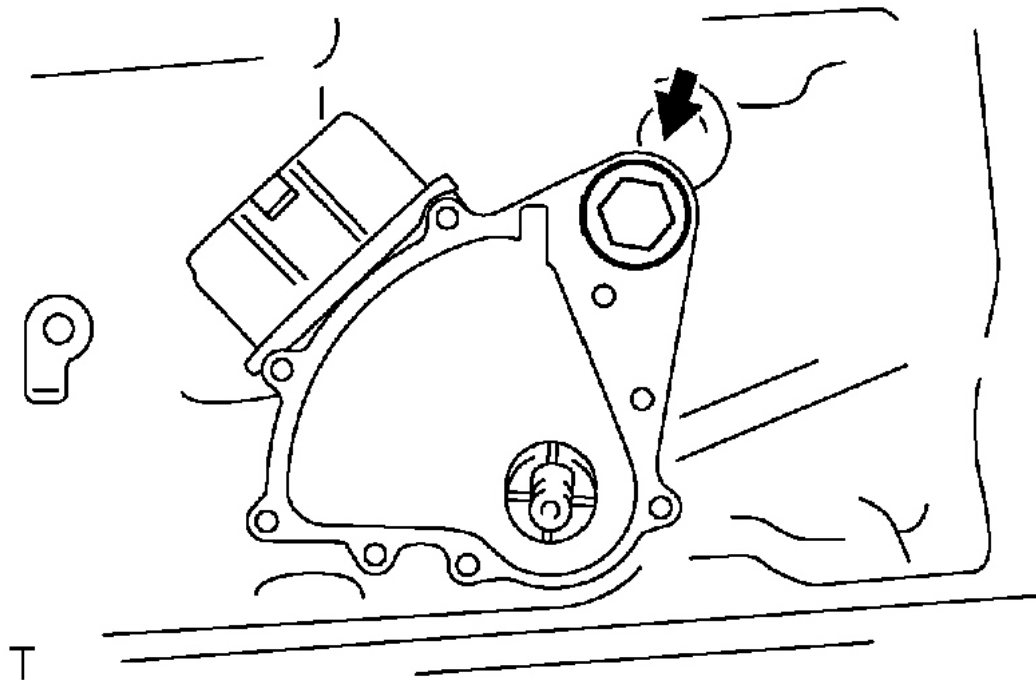
- d. Remove the bolt and park/neutral position switch.



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Fig. 11: Removing Bolt And Park/Neutral Position Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

26. **INSTALL PARK/NEUTRAL POSITION SWITCH ASSY**
- a. Install the park/neutral position switch to the manual valve shaft.
 - b. Temporarily install the bolt.



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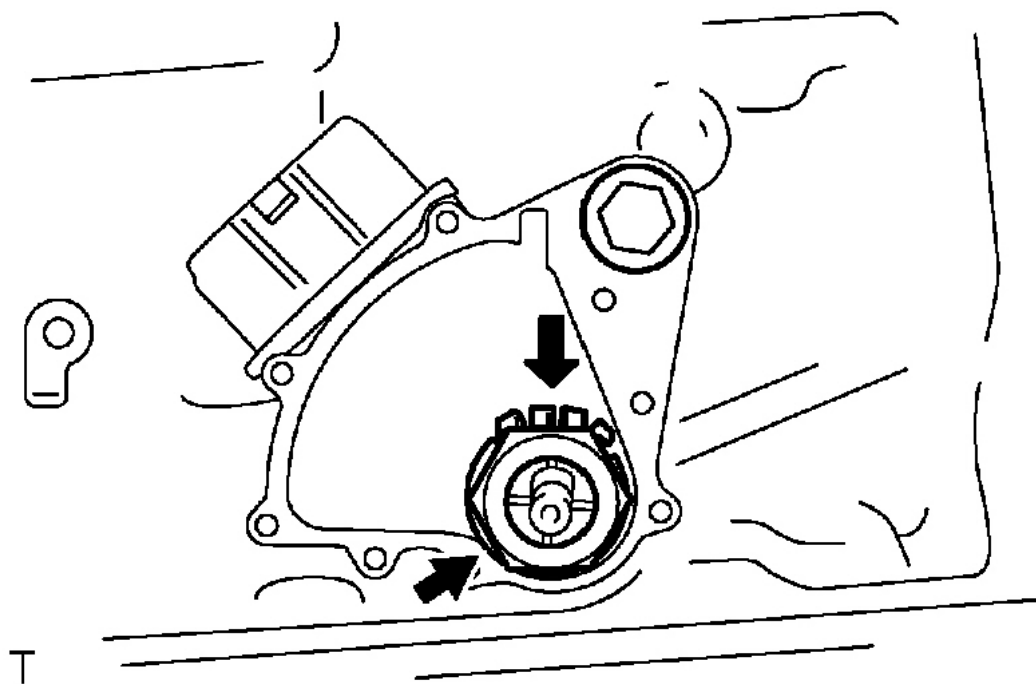
Fig. 12: Installing Bolt

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Install a new lock plate and the nut.

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

- d. Temporarily install the control shaft lever.

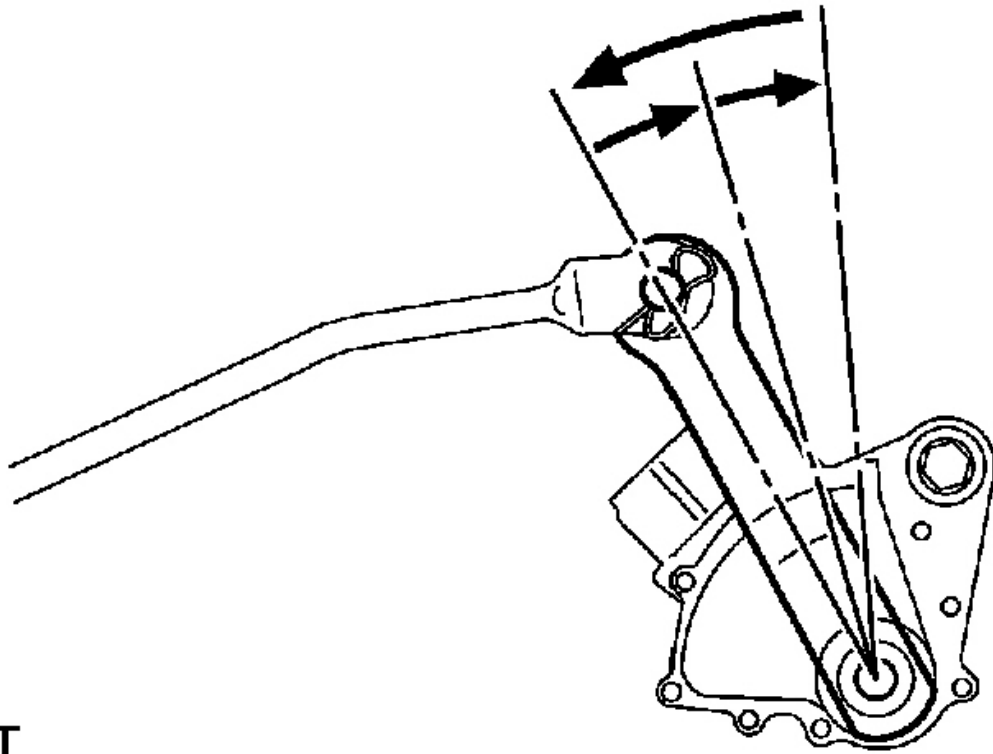


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Fig. 13: Installing Control Shaft Lever

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- e. Turn the control shaft lever counterclockwise until it stops, and turn it clockwise 2 notches to set it to the N position.
- f. Remove the transmission control shaft lever.

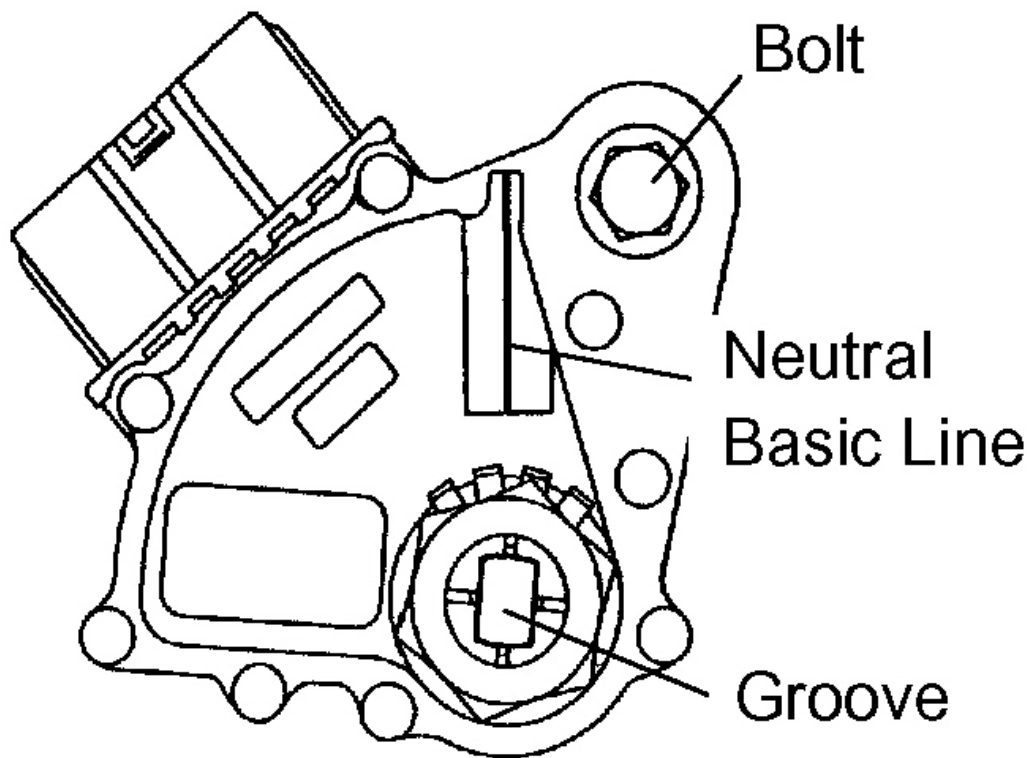


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Fig. 14: Removing Transmission Control Shaft Lever
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

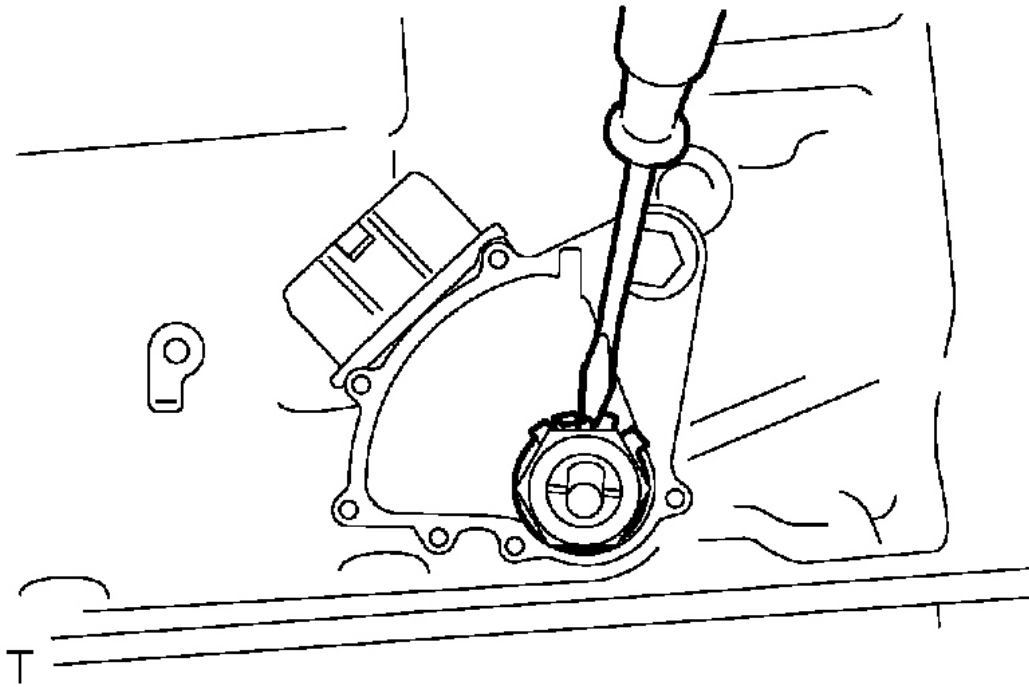
- g. Align the neutral basic line with the switch groove, and tighten the adjusting bolt.
Torque: 13 N.m (130 kgf.cm, 9 ft.lbf)



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Fig. 15: Aligning Neutral Basic Line With Switch Groove
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

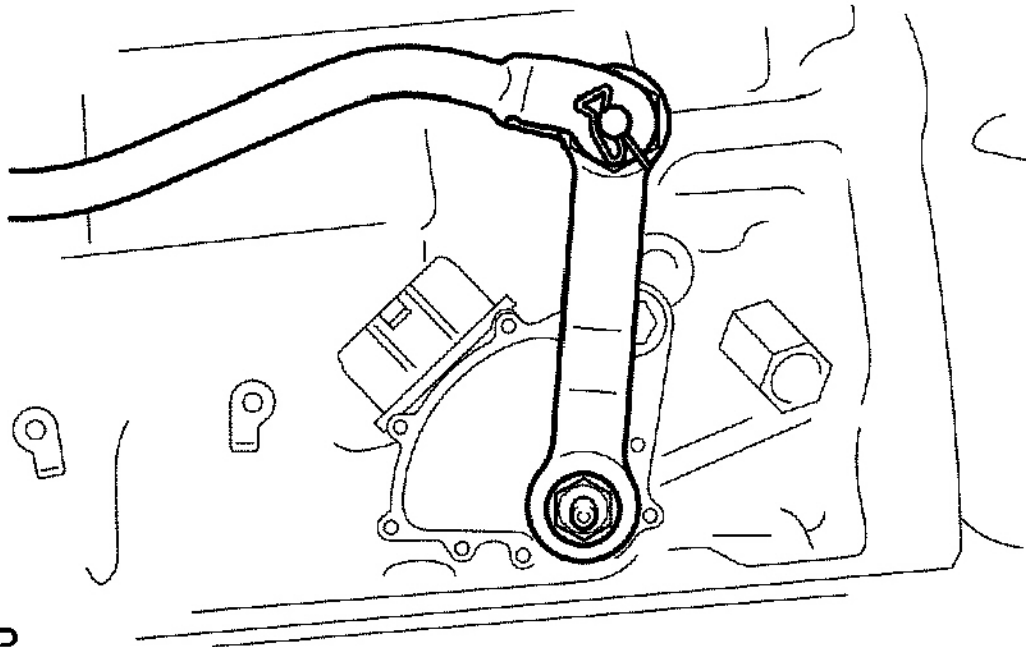
- h. Using a screwdriver, bend the tabs of the lock washer.



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Fig. 16: Bending Tabs Of Lock Washer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

27. **INSTALL TRANSMISSION CONTROL SHAFT LEVER RH**
 - a. Install the transmission control shaft lever RH with the nut.
Torque: 16 N.m (160 kgf.cm, 12 ft.lbf)

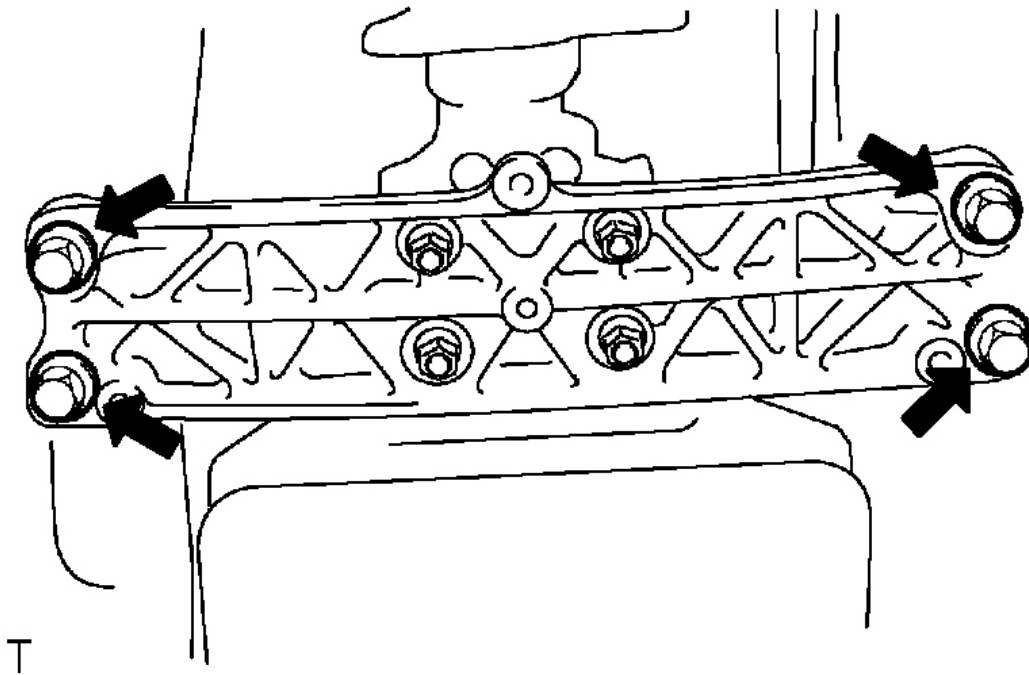


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Fig. 17: Installing Transmission Control Shaft Lever RH With Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Connect the park/neutral position switch connector.
28. **INSTALL ENGINE REAR MOUNTING MEMBER**
- a. Install the engine rear mounting member with the 4 bolts.
Torque: 26 N.m (270 kgf.cm, 20 ft.lbf)



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Fig. 18: Installing Engine Rear Mounting Member With 4 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

29. CONNECT FLOOR SHIFT GEAR SHIFTING ROD SUB-ASSY

- a. Connect the floor shift gear shifting rod sub-assy with the nut.

Torque: 13 N.m (130 kgf.cm, 9 ft.lbf)

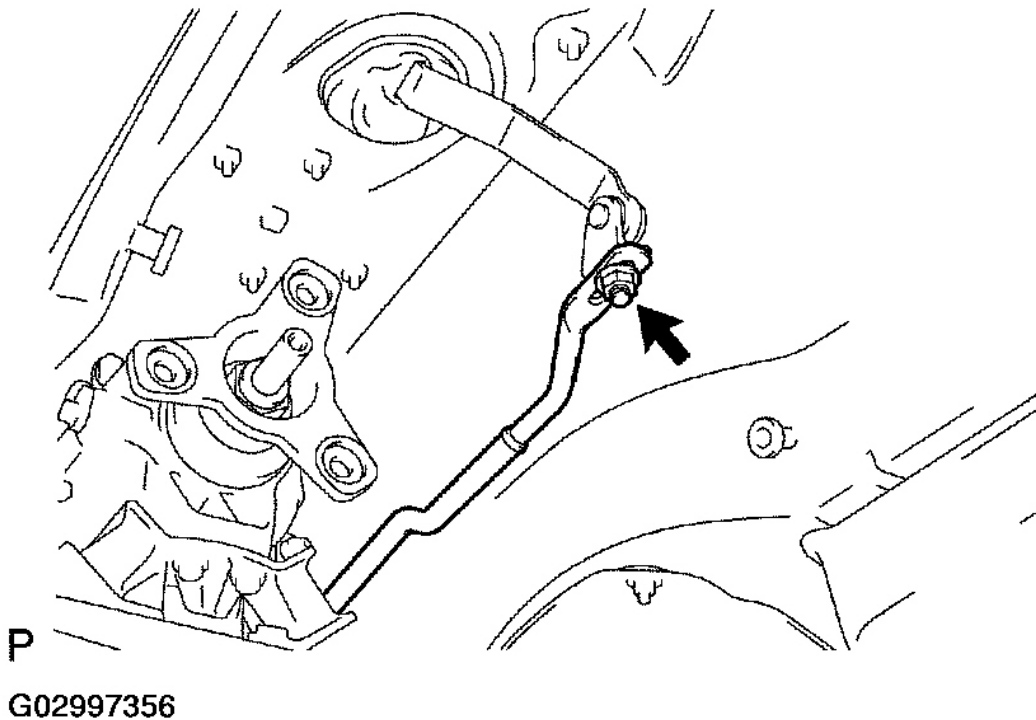


Fig. 19: Connecting Floor Shift Gear Shifting Rod Sub-Assy With Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

30. **CONNECT BATTERY NEGATIVE TERMINAL**
31. **ADJUST SHIFT LEVER POSITION (SEE ADJUSTMENT)**
32. **INSPECT SHIFT LEVER POSITION (SEE ADJUSTMENT**
33. **INSPECT PARK/NEUTRAL POSITION SWITCH ASSY (SEE ADJUSTMENT)**
34. **INSTALL PROPELLER W/CENTER BEARING SHAFT ASSY (SEE OVERHAUL)**
35. **INSTALL EXHAUST PIPE ASSY (SEE REPLACEMENT)**
36. **PERFORM INITIALIZATION (SEE INITIALIZATION)**

ADJUSTMENT

1. **INSPECT PARK/NEUTRAL POSITION SWITCH ASSY**
 - a. Apply the parking brake and turn the ignition switch to the ON position.
 - b. Depress the brake pedal and check that the engine starts when the shift lever is set in the N or P position, but does not start in other positions.
 - c. Check that the back-up light comes on and the reverse warning buzzer sounds when the shift lever is set in the R position, but do not function in other positions.

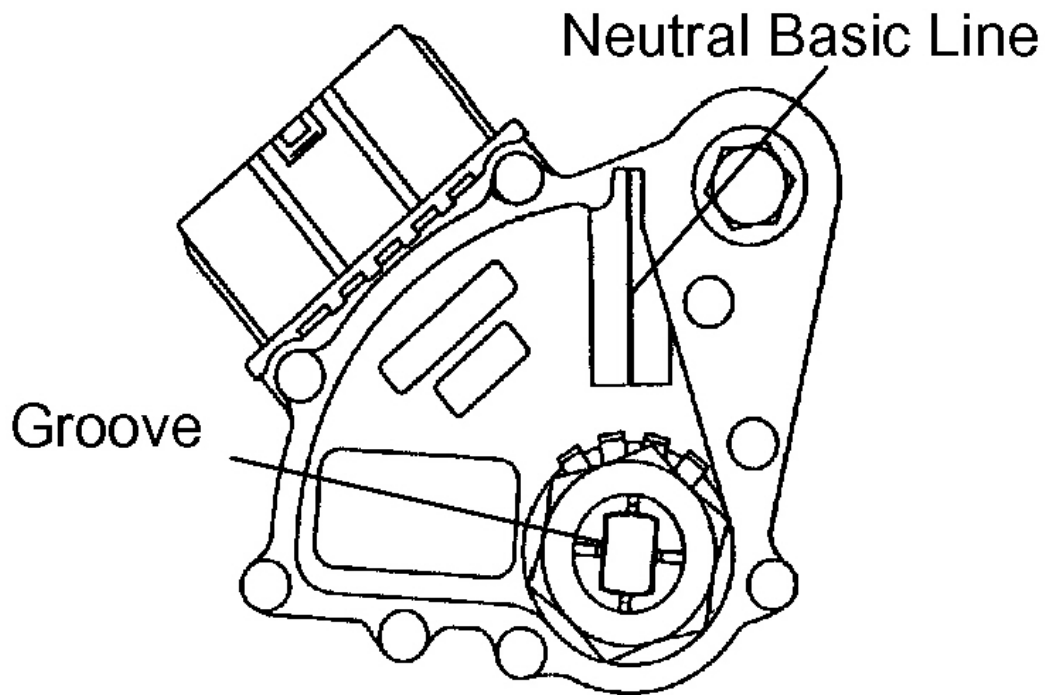
If a failure is found, check the park/neutral position switch for continuity.

2. ADJUST PARK/NEUTRAL POSITION SWITCH ASSY

- a. Loosen the bolt of the park/neutral position switch and move the shift lever to the N position.
- b. Align the groove and the neutral basic line.
- c. Hold the switch in position and tighten the bolt.

Torque: 13.0 N.m (130 kgf.cm, 9 ft.lbf)

- d. After adjustment, perform the inspection described in step 1.



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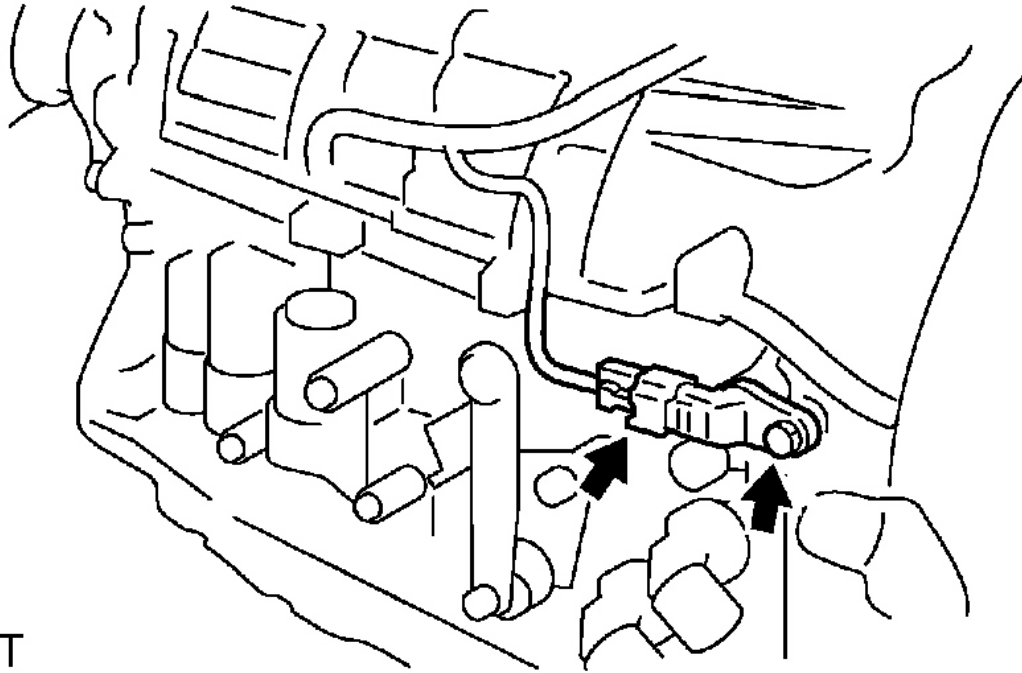
Fig. 20: Aligning Groove And Neutral Basic Line
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TRANSMISSION REVOLUTION SENSOR

REPLACEMENT

1. **REMOVE TRANSMISSION REVOLUTION SENSOR (NC0 SENSOR)**
 - a. Disconnect the transmission revolution sensor connector.
 - b. Remove the bolt and transmission revolution sensor.

- c. Remove the O-ring from the transmission revolution sensor.



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Fig. 21: Removing Bolt And Transmission Revolution Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. REMOVE TRANSMISSION REVOLUTION SENSOR (SP2 SENSOR)

- a. Disconnect the transmission revolution sensor connector.
- b. Remove the bolt and transmission revolution sensor.
- c. Remove the O-ring from the transmission revolution sensor.

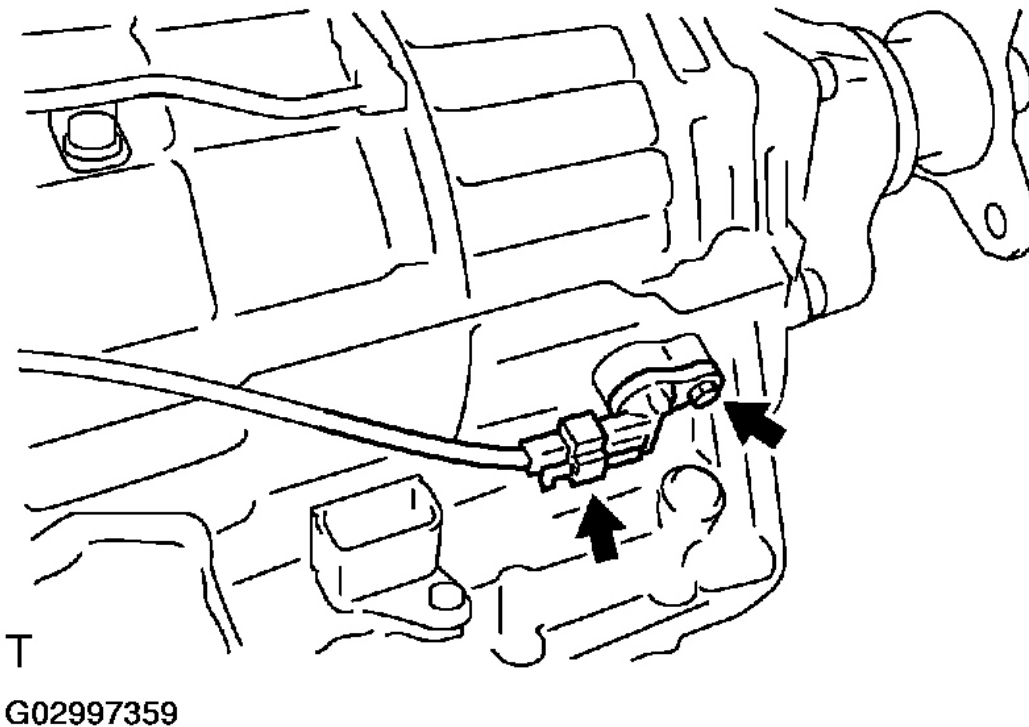


Fig. 22: Removing Bolt And Transmission Revolution Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. INSTALL TRANSMISSION REVOLUTION SENSOR (SP2 SENSOR)

- a. Coat a new O-ring with ATF and install it to the transmission revolution sensor.
- b. Install the transmission revolution sensor with the bolt.

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

- c. Connect the transmission revolution sensor connector.

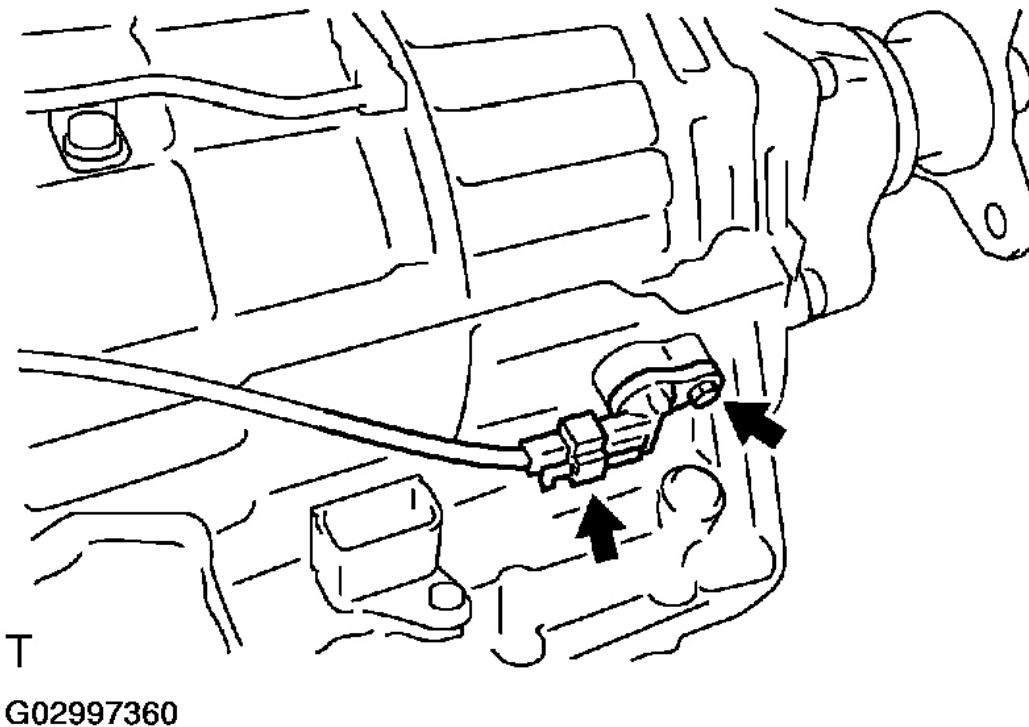


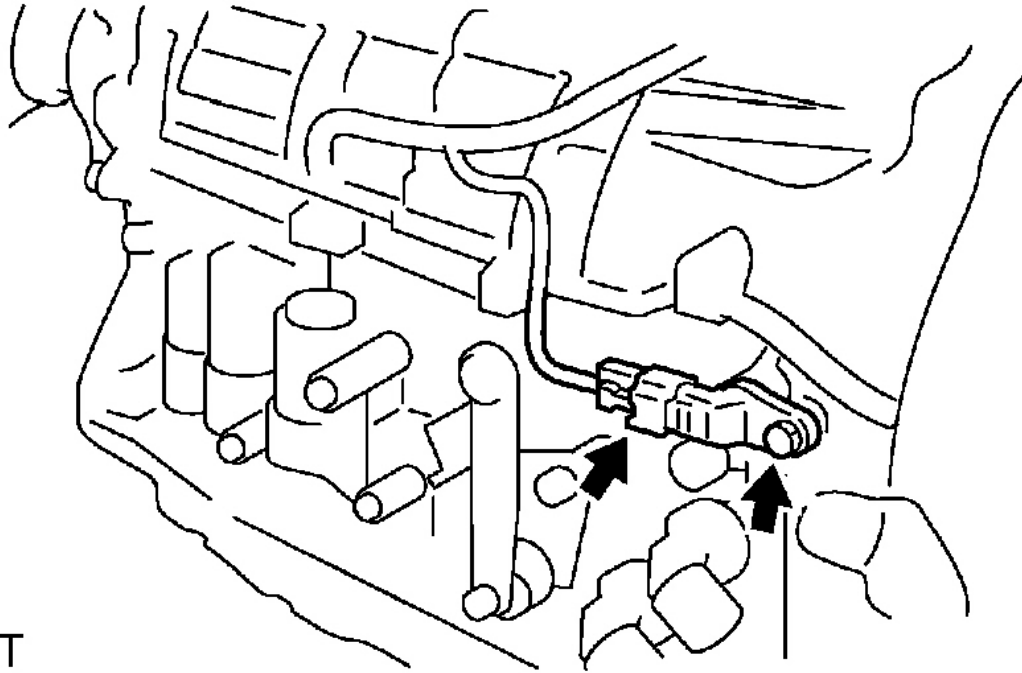
Fig. 23: Installing Transmission Revolution Sensor With Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. INSTALL TRANSMISSION REVOLUTION SENSOR (NC0 SENSOR)

- a. Coat a new O-ring with ATF and install it to the transmission revolution sensor.
- b. Install the transmission revolution sensor with the bolt.

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

- c. Connect the transmission revolution sensor connector.



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Fig. 24: Installing Transmission Revolution Sensor With Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

AUTOMATIC TRANSMISSION ASSY

COMPONENTS

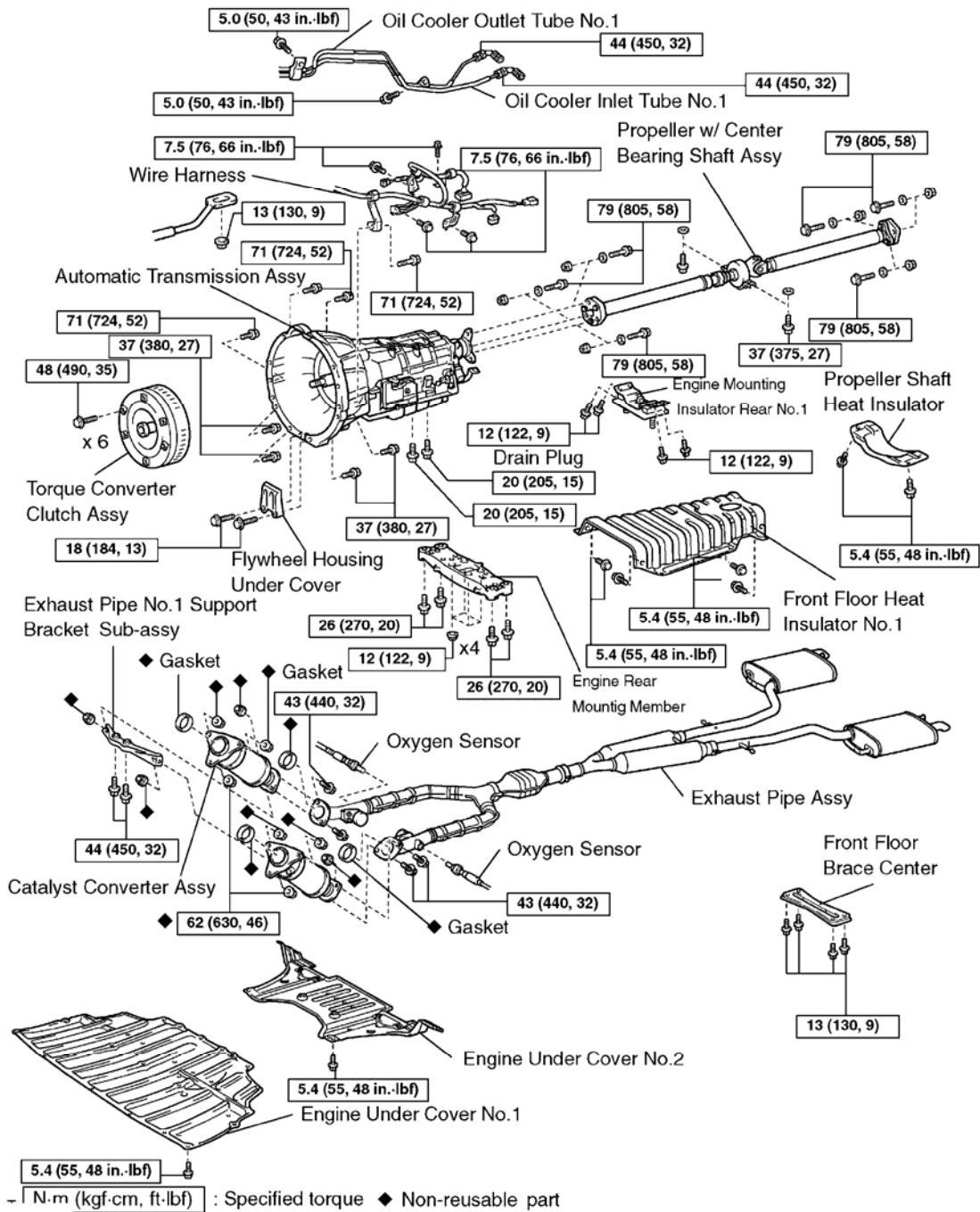


Fig. 25: Identifying Automatic Transmission Assy Components
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

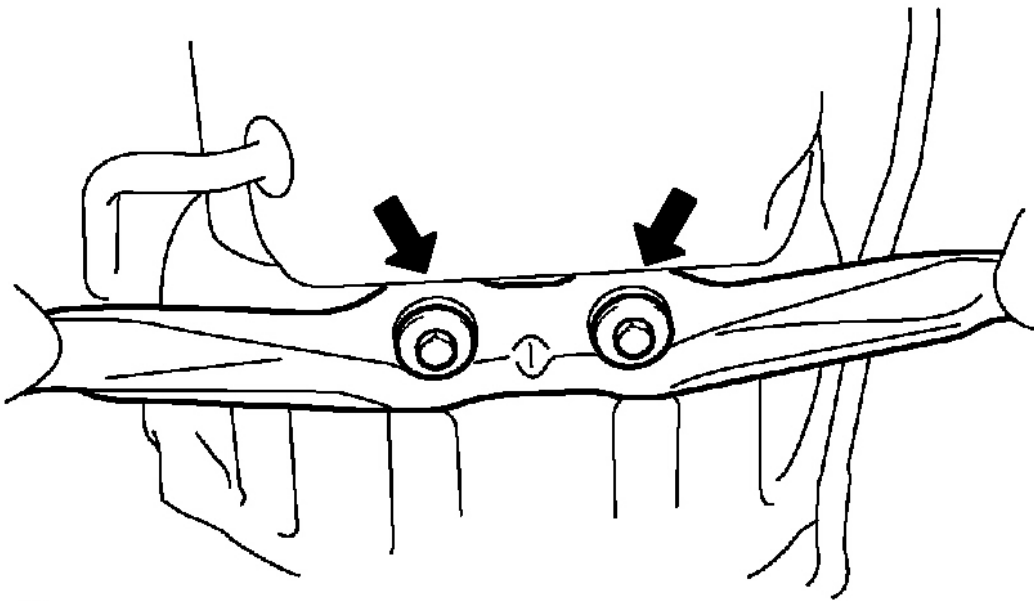
REPLACEMENT

1. **DISCONNECT BATTERY NEGATIVE TERMINAL**
2. **REMOVE ENGINE UNDER COVER NO.1**

3. **REMOVE ENGINE UNDER COVER NO.2**
4. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.2 (SEE REPLACEMENT)**
5. **REMOVE INSTRUMENT PANEL GARNISH SUB-ASSY LH (SEE REPLACEMENT)**
6. **REMOVE INSTRUMENT PANEL FINISH PANEL (SEE REPLACEMENT)**
7. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (SEE REPLACEMENT)**
8. **REMOVE SWITCH BRACE HOLE COVER (SEE REPLACEMENT)**
9. **REMOVE INSTRUMENT PANEL SAFETY PAD SUB-ASSY NO.1 (SEE REPLACEMENT)**
10. **REMOVE INSTRUMENT PANEL CUP HOLDER ASSY (SEE REPLACEMENT)**
11. **REMOVE CONSOLE UPPER REAR PANEL SUB-ASSY (SEE REPLACEMENT)**
12. **REMOVE CONSOLE BOX CARPET (SEE REPLACEMENT)**
13. **REMOVE REAR CONSOLE ARMREST ASSY (SEE REPLACEMENT)**
14. **REMOVE INSTRUMENT PANEL FINISH PANEL LOWER CENTER (SEE REPLACEMENT)**
15. **REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY CENTER (SEE REPLACEMENT)**
16. **REMOVE CONSOLE PANEL SUB-ASSY UPPER (SEE REPLACEMENT)**
17. **REMOVE CONSOLE BOX (SEE REPLACEMENT)**
18. **SEPARATE OXYGEN SENSOR (SEE REPLACEMENT)**
 - a. Separate the 2 heated oxygen sensors.
19. **REMOVE FRONT FLOOR BRACE CENTER (SEE REPLACEMENT)**
20. **REMOVE EXHAUST PIPE ASSY (SEE REPLACEMENT)**
21. **REMOVE FRONT FLOOR HEAT INSULATOR NO.1 (SEE OVERHAUL)**
22. **REMOVE PROPELLER W/CENTER BEARING SHAFT ASSY (SEE OVERHAUL)**

SST 09922-10010
23. **DRAIN AUTOMATIC TRANSMISSION FLUID**
 - a. Remove the drain plug, gasket and drain the ATF.
 - b. **Install a new gasket and the drain plug.**

Torque: 20 N.m (205 kgf.cm, 15 ft.lbf)
24. **REMOVE EXHAUST PIPE NO.1 SUPPORT BRACKET SUB-ASSY**
 - a. Remove the 2 bolts and exhaust pipe No.1 support bracket sub-assy.



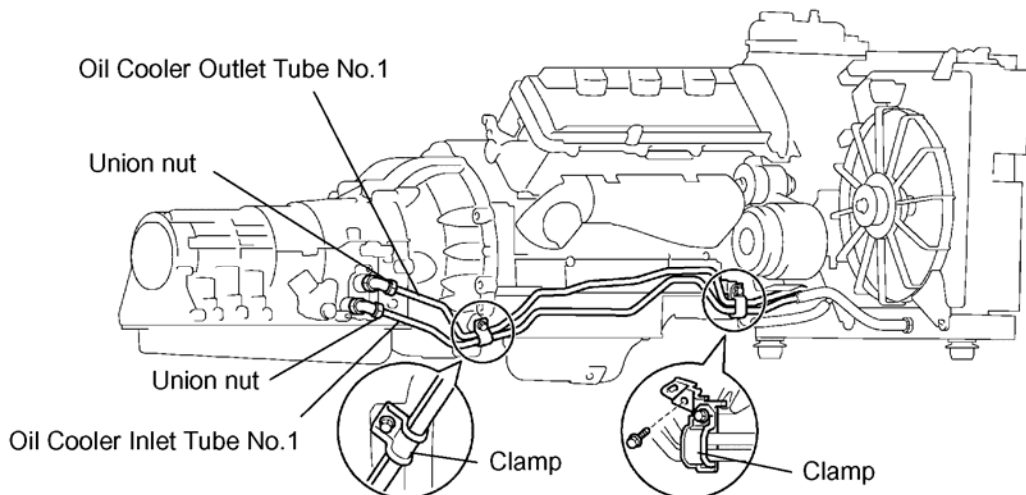
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Fig. 26: Removing 2 Bolts And Exhaust Pipe No.1 Support Bracket Sub-Assy
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

25. SEPARATE OIL COOLER INLET TUBE NO.1

- a. Remove the 2 bolts and clamps.



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Fig. 27: Removing 2 Bolts And Clamps

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Loosen the union nut and separate the oil cooler inlet tube No.1.
26. **SEPARATE OIL COOLER OUTLET TUBE NO.1**
- a. Loosen the union nut and separate the oil cooler outlet tube No.1
27. **SEPARATE FLOOR SHIFT GEAR SHIFTING ROD SUB-ASSY**
- a. Remove the nut and separate the floor shift gear shifting rod.

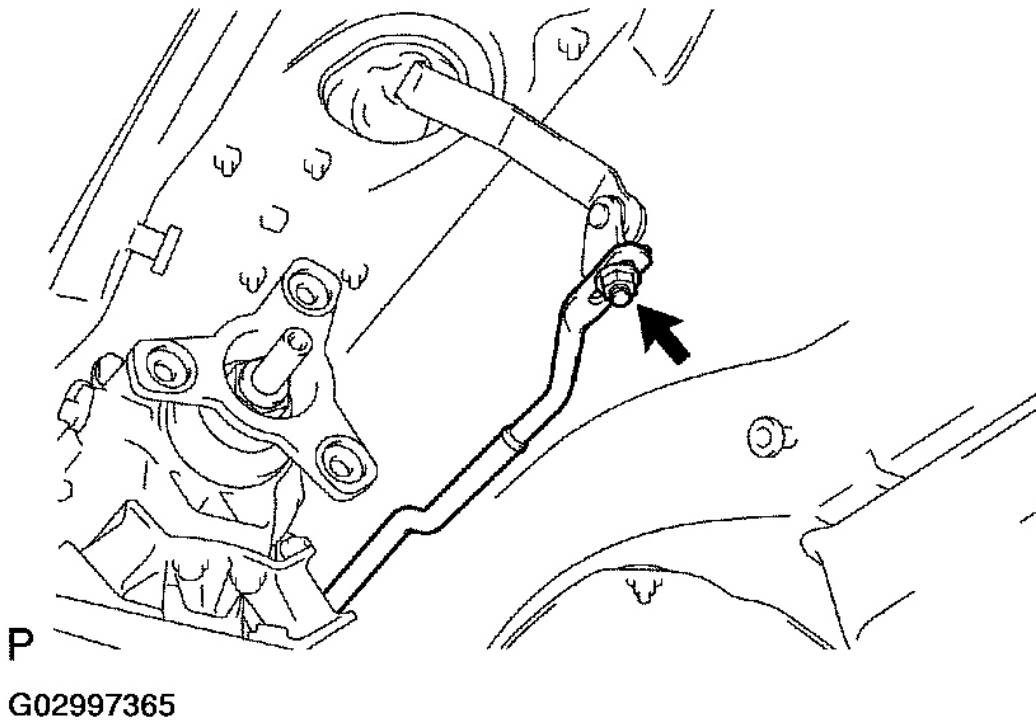
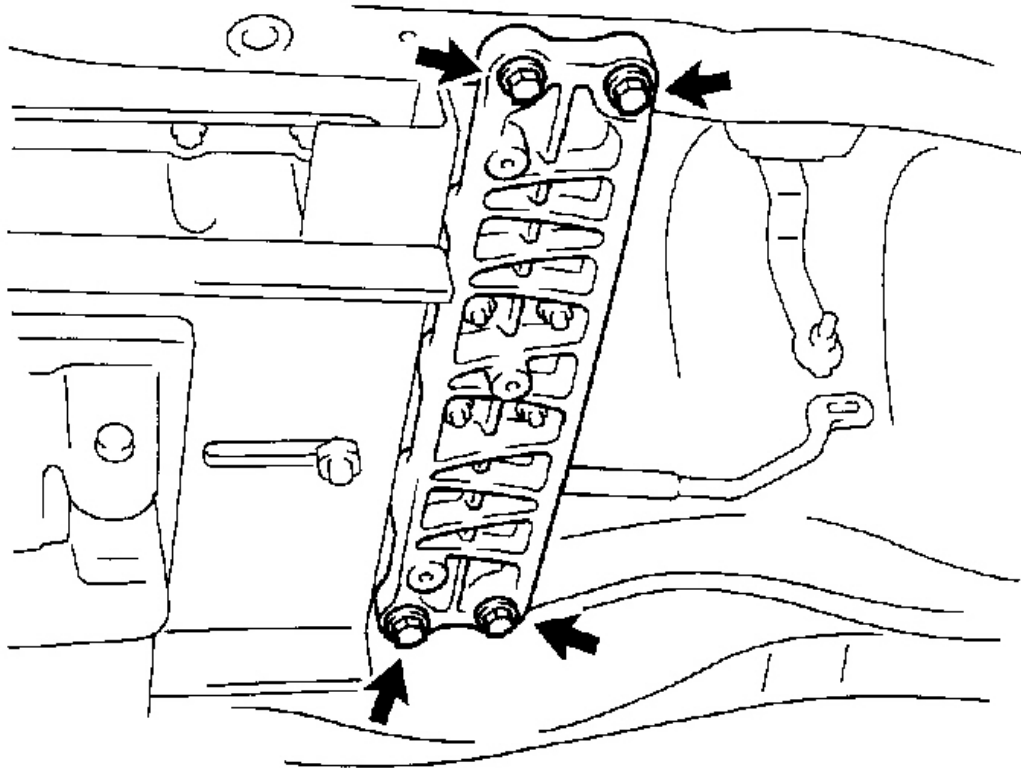


Fig. 28: Removing Nut And Separating Floor Shift Gear Shifting Rod

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

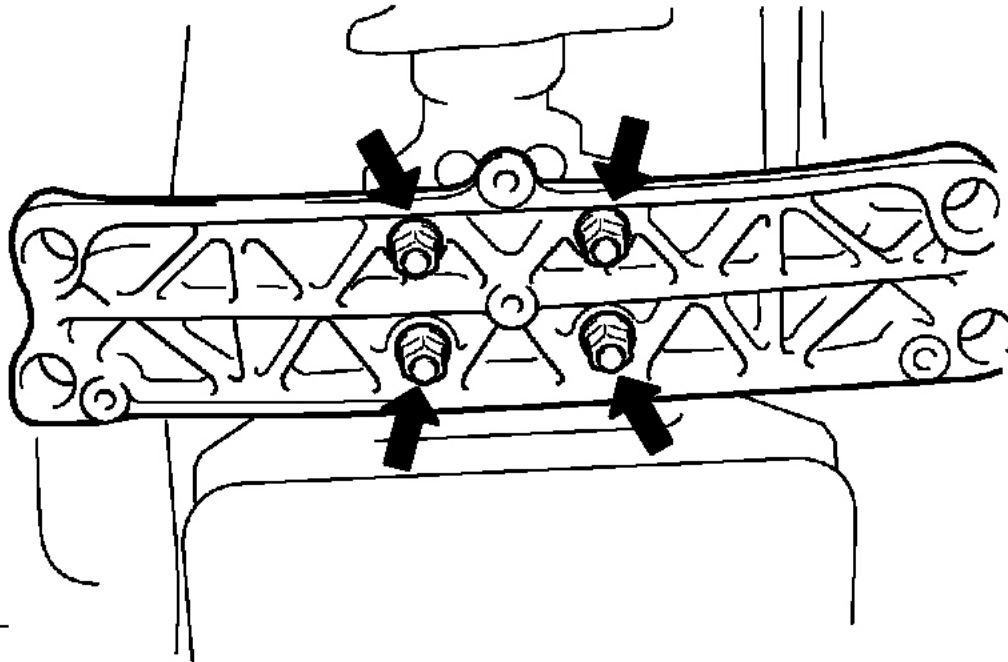
28. **SUPPORT AUTOMATIC TRANSMISSION ASSY**
- a. Support the automatic transmission assy with a transmission jack.
29. **REMOVE ENGINE REAR MOUNTING MEMBER**
- a. Remove the 4 bolts and separate the engine rear mounting member.



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Fig. 29: Removing 4 Bolts And Separating Engine Rear Mounting Member
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the 4 nuts and engine rear mounting member.



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Fig. 30: Removing 4 Nuts And Engine Rear Mounting Member
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

30. DISCONNECT CONNECTOR

- a. Tilt down the automatic transmission.

NOTE: Take care so that the cooling fan does not come into contact with the fan shroud.

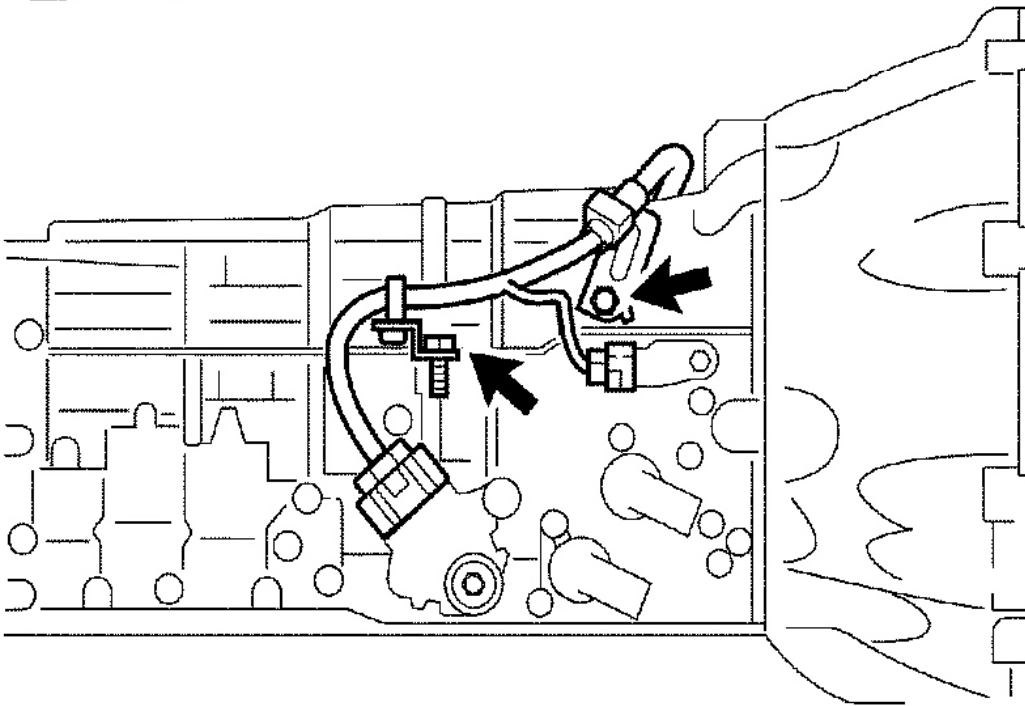
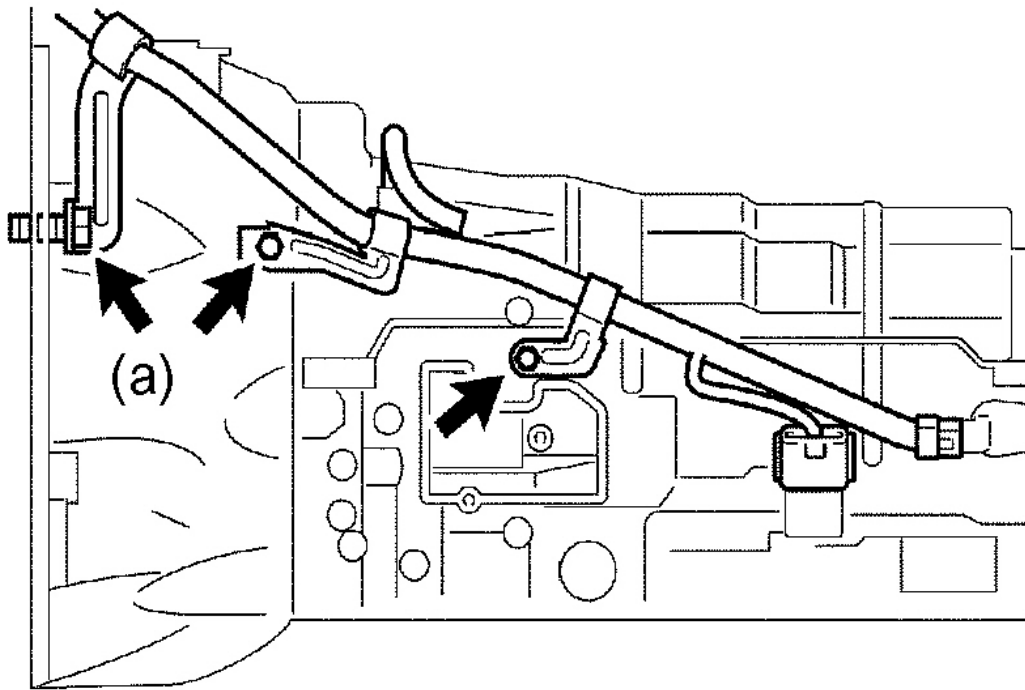
- b. Disconnect the park/neutral position switch connector.
- c. Disconnect the transmission wire connector.
- d. Disconnect the 2 speed sensor connectors.

31. DISCONNECT WIRE HARNESS

- a. Remove the 5 bolts and wire harness clamps.
- b. Separate the wire harness from the automatic transmission assy.

HINT:

Bolt (a) is tightened to the transmission housing.



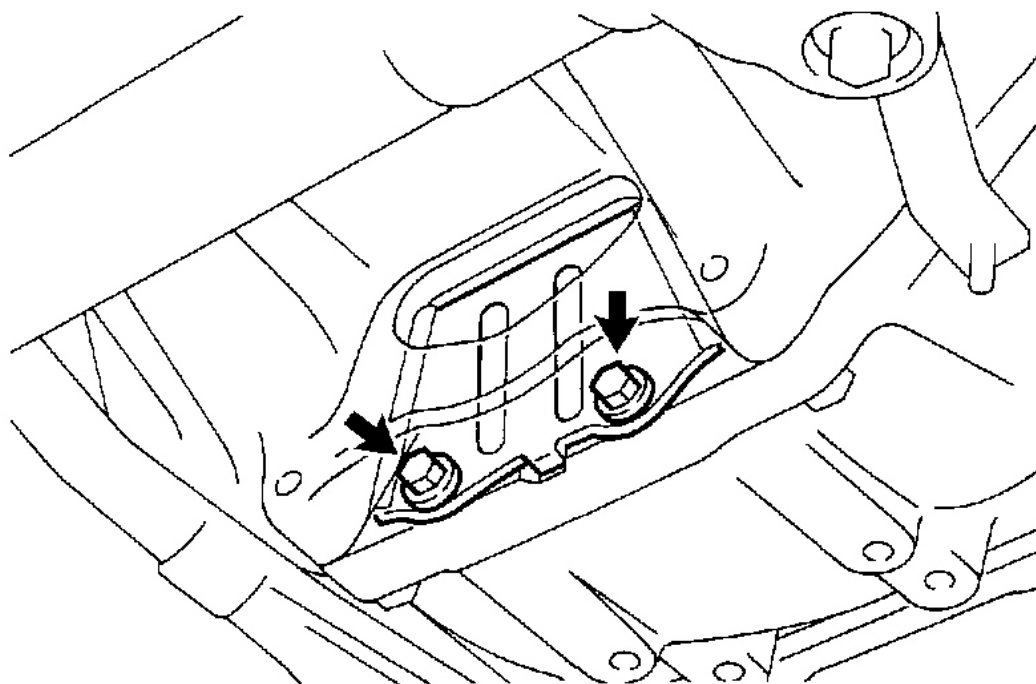
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Fig. 31: Removing 5 Bolts And Wire Harness Clamps
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

32. REMOVE FLYWHEEL HOUSING UNDER COVER

- a. Remove the 2 bolts and flywheel housing under cover.

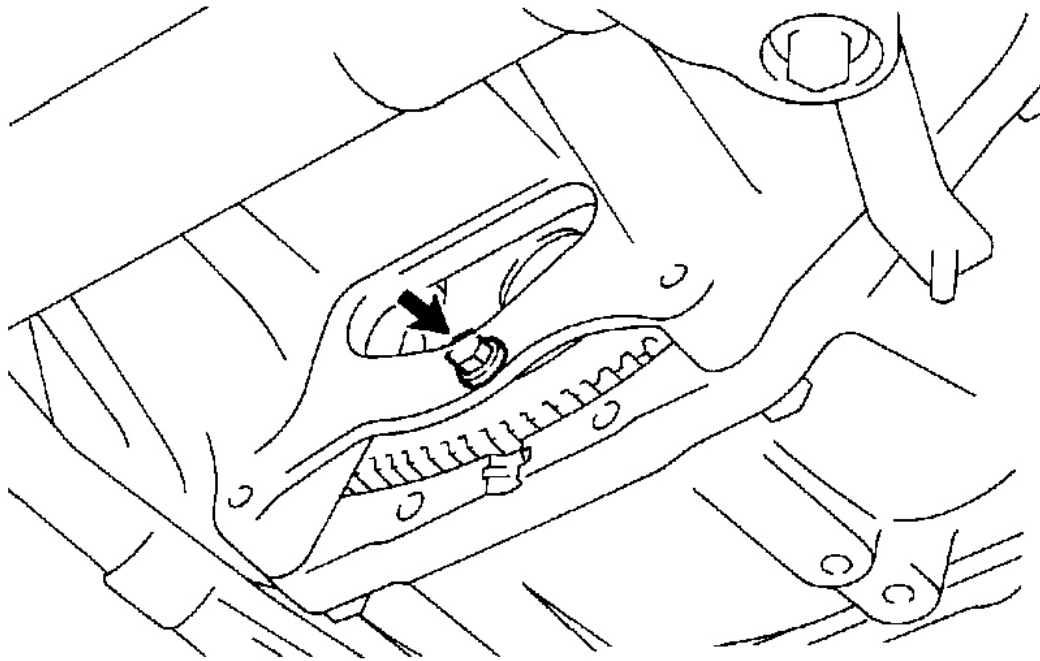


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Fig. 32: Removing 2 Bolts And Flywheel Housing Under Cover
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

33. REMOVE AUTOMATIC TRANSMISSION ASSY

- a. Turn the crankshaft to gain access to each bolt.
- b. Hold the crankshaft pulley nut with a wrench and remove the 6 bolts.



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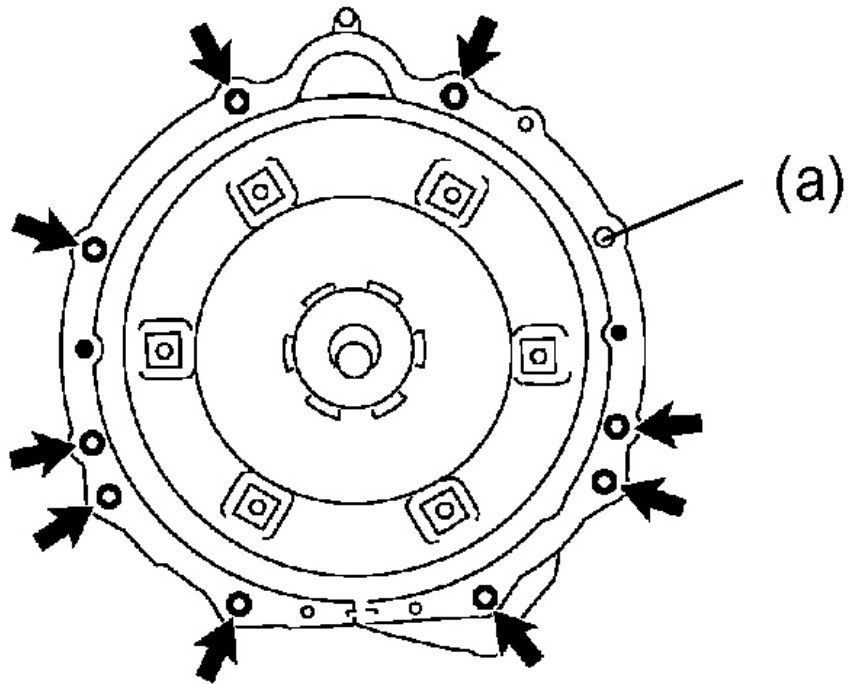
Fig. 33: Locating Bolts

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Remove the 9 bolts.
- d. Separate and remove the automatic transmission assy.

HINT:

- Bolt (a) is tightened to the transmission housing.
- At the time of installation, lift the engine front side as shown in illustration (A).



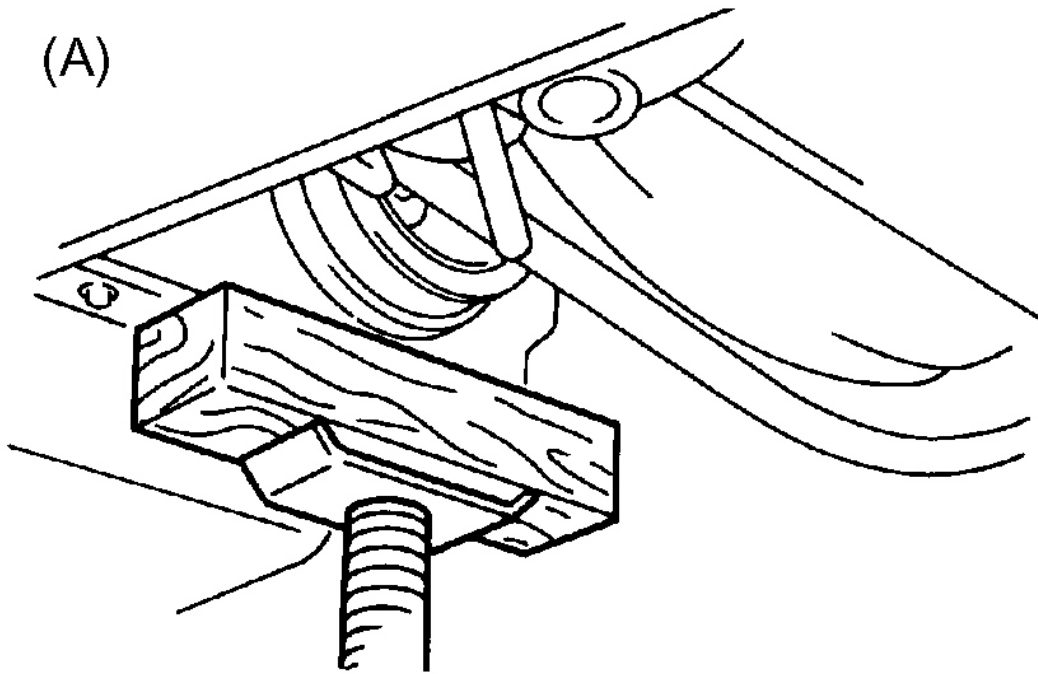
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Fig. 34: Removing 9 Bolts

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

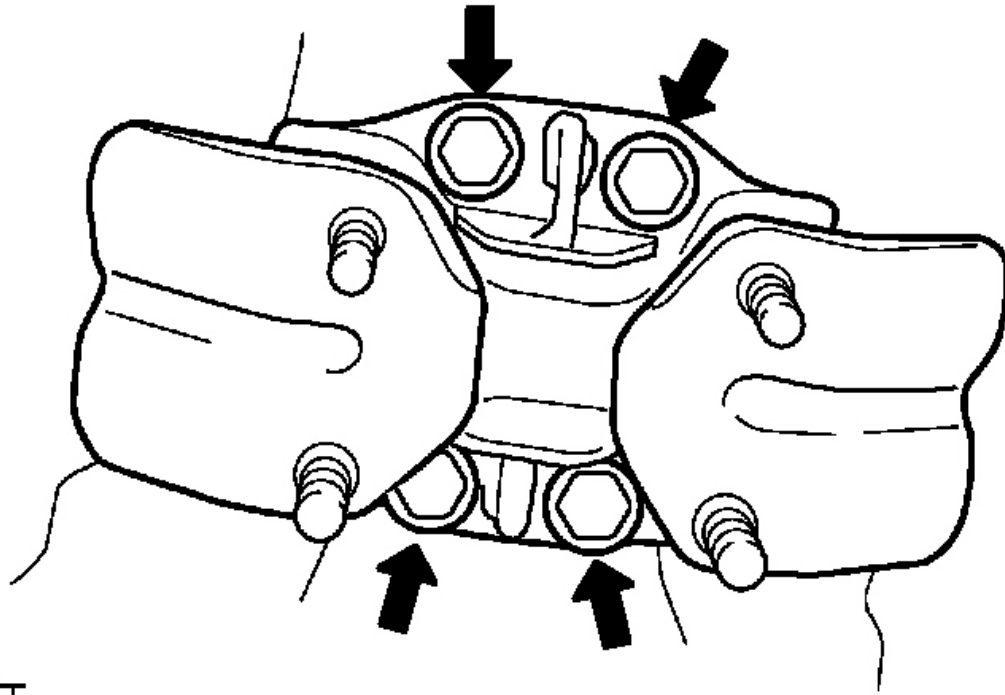
34. REMOVE ENGINE MOUNTING INSULATOR REAR NO.1



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Fig. 35: Lifting Engine Front Side
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- a. Remove the 4 bolts and engine mounting insulator rear No.1.

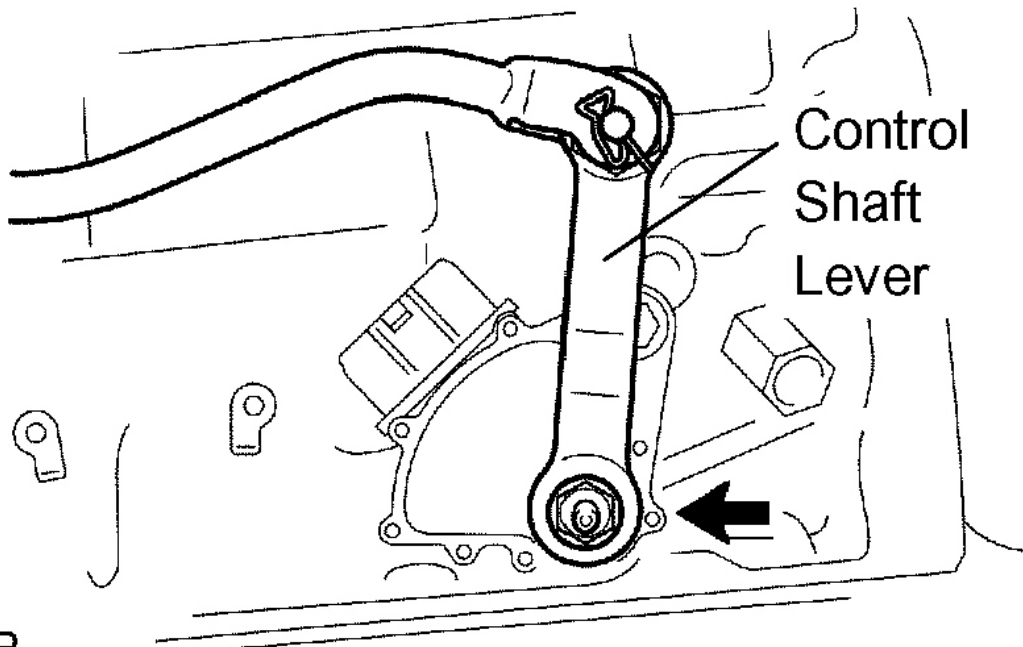


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Fig. 36: Removing 4 Bolts And Engine Mounting Insulator Rear No.1
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

35. **REMOVE TRANSMISSION CONTROL SHAFT LEVER RH**
 - a. Remove the nut and transmission control shaft lever RH.



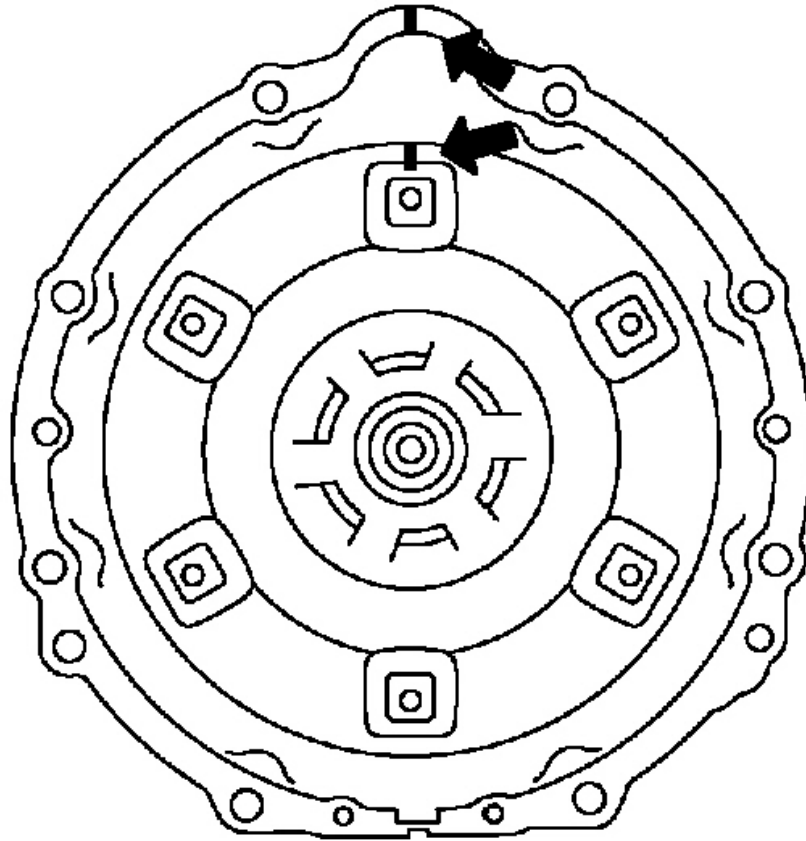
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Fig. 37: Removing Nut And Transmission Control Shaft Lever RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

36. **REMOVE TORQUE CONVERTER CLUTCH ASSY**

- a. Put matchmarks on the transmission case and torque converter clutch assy.
- b. Remove the torque converter clutch assy from the automatic transmission assy.



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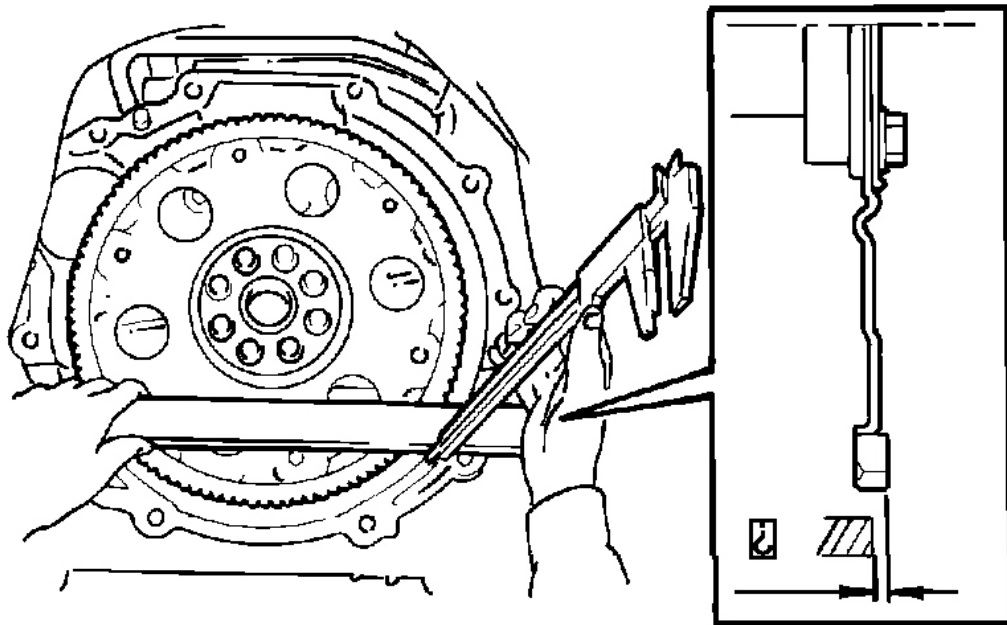
Fig. 38: Putting Matchmarks On Transmission Case And Torque Converter Clutch Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

37. INSPECT TORQUE CONVERTER CLUTCH ASSY (SEE INSPECTION)

SST 09350-32014 (09351-32010, 09351-32020)

38. INSTALL TORQUE CONVERTER CLUTCH ASSY

- a. Using calipers and a straight edge, measure dimension A between the transmission and the end surface of the drive plate.



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Fig. 39: Measuring Dimension A Between Transmission And End Surface Of Drive Plate
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Aligning the matchmarks on the transmission case and torque converter clutch assy, engage the splines of the input shaft and turbine runner.

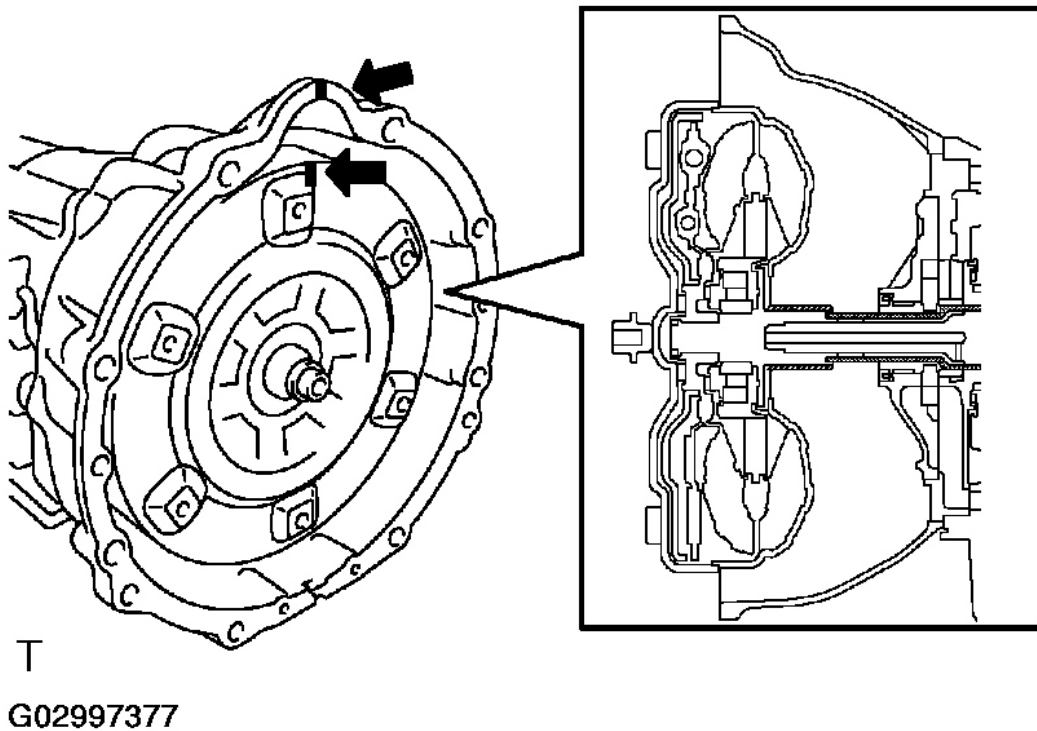
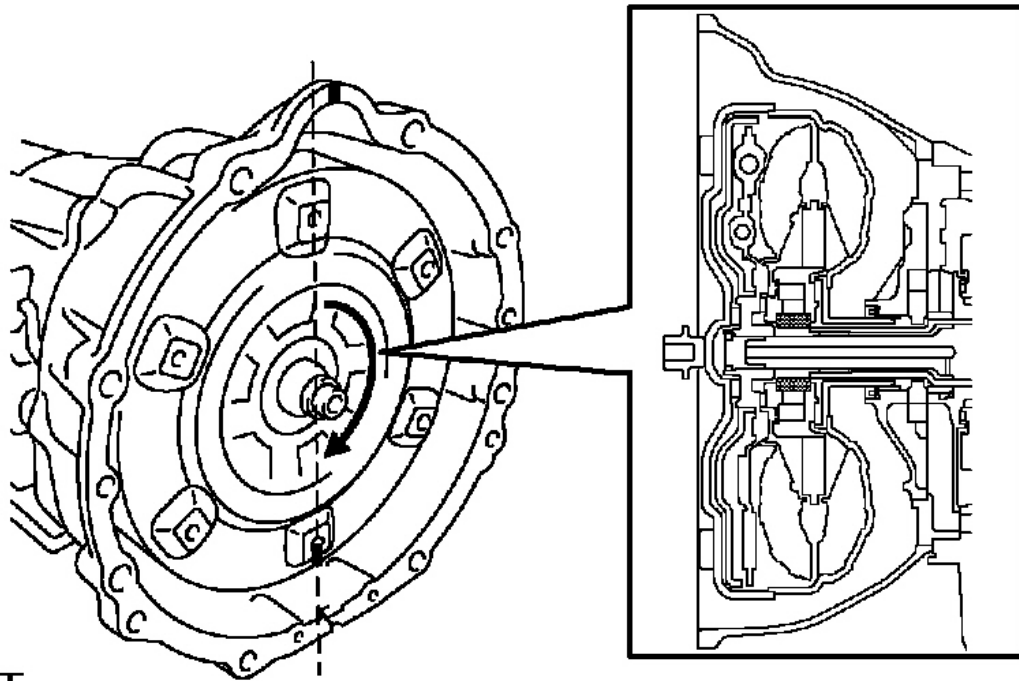


Fig. 40: Aligning Matchmarks On Transmission Case And Torque Converter Clutch Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Engage the splines of the stator shaft and stator while turning the torque converter clutch assy.

HINT:

Turn the torque converter clutch assy approximately 180°.



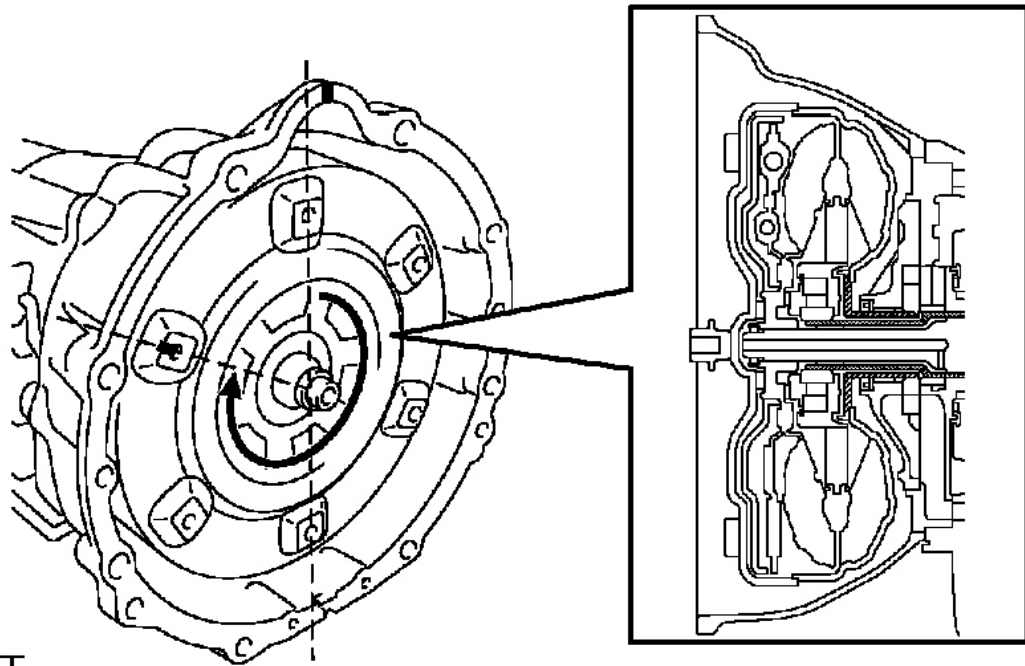
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Fig. 41: Engaging Splines Of Stator Shaft And Stator
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. Turn the torque converter clutch assy and align the matchmarks on the torque converter clutch assy and transmission case to engage the key of the oil pump drive gear into the slot on the torque converter clutch assy.

NOTE: Do not push on the torque converter when aligning the matchmarks.

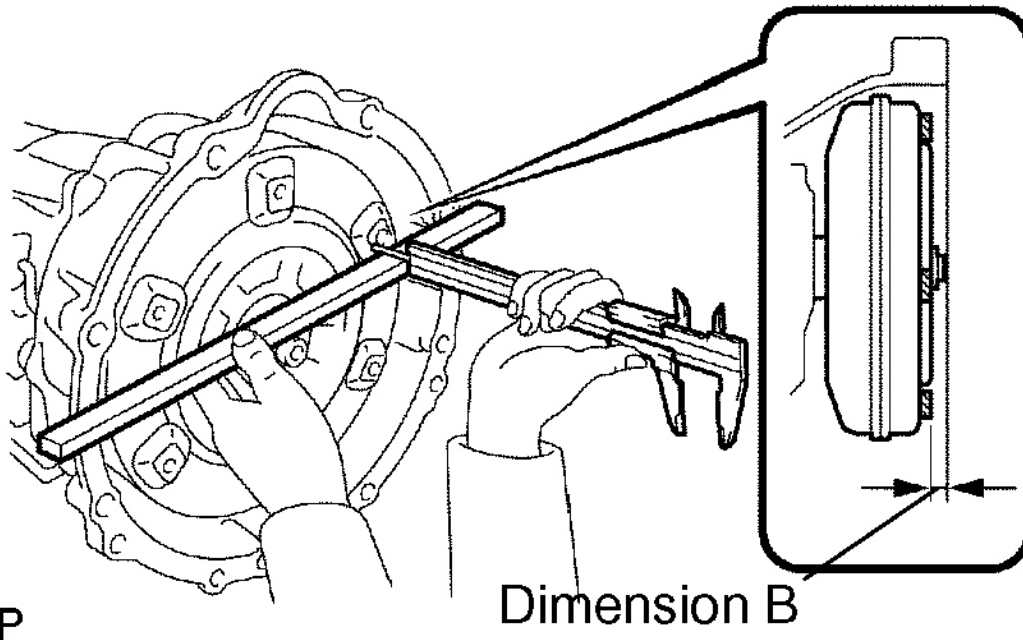


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Fig. 42: Aligning Matchmarks On Torque Converter Clutch Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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



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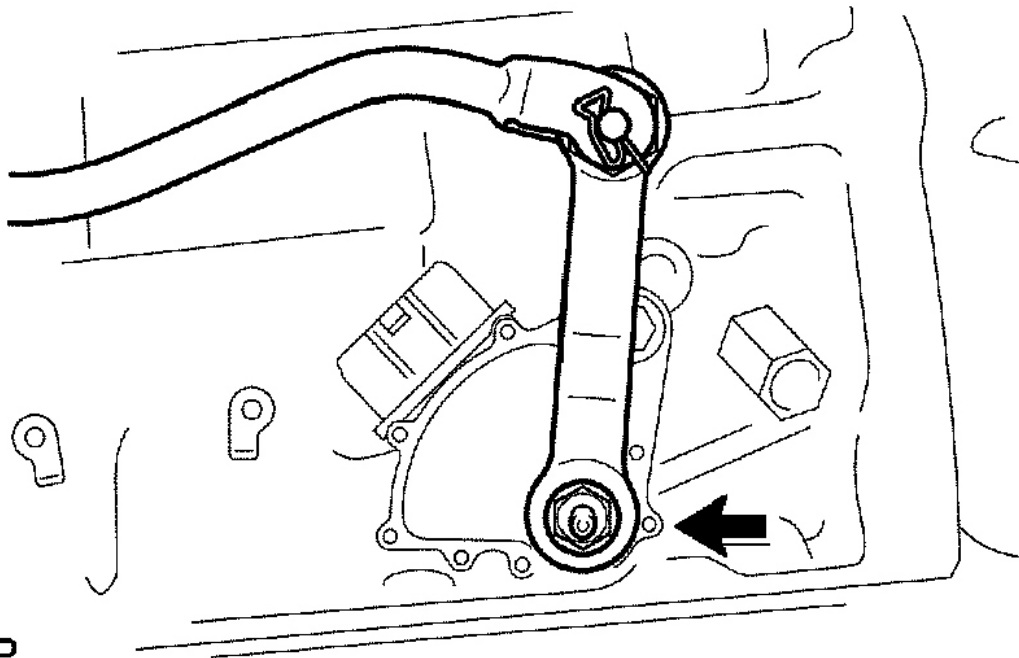
Dimension B

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Fig. 43: Measuring Dimension B

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

39. **INSTALL TRANSMISSION CONTROL SHAFT LEVER RH**
 - a. Install the transmission control shaft lever RH with the nut.
Torque: 16 N.m (160 kgf.cm, 12 ft.lbf)



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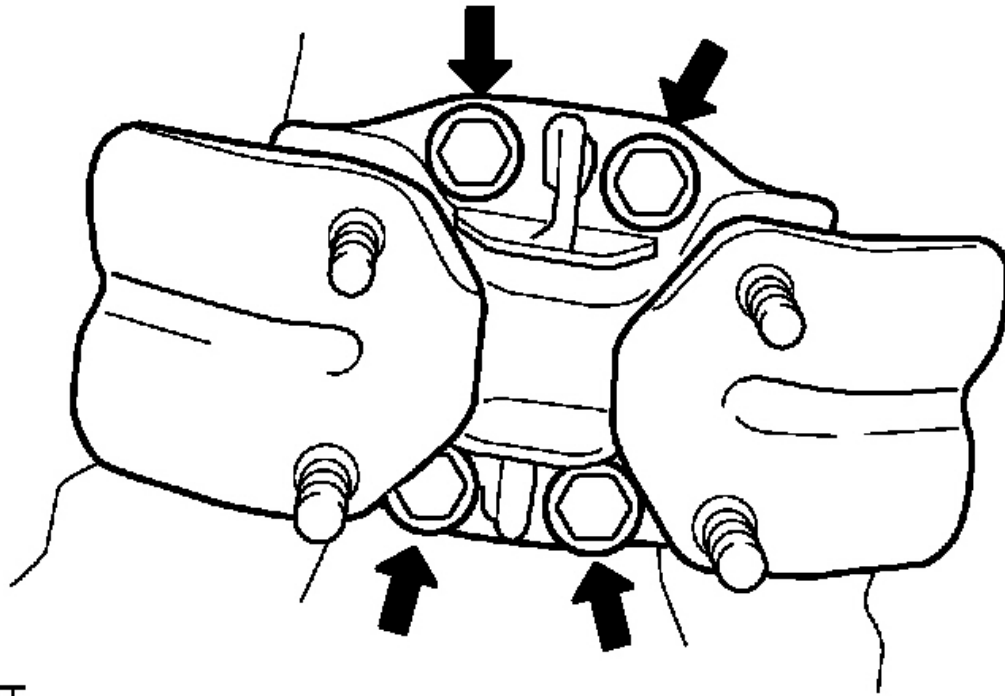
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Fig. 44: Installing Transmission Control Shaft Lever RH With Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

40. INSTALL ENGINE MOUNTING INSULATOR REAR NO.1

- a. Install the engine mounting insulator rear No.1 with the 4 bolts.

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



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Fig. 45: Installing Engine Mounting Insulator Rear No.1 With 4 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

41. INSTALL AUTOMATIC TRANSMISSION ASSY

- a. Install the automatic transmission assy to the engine with the 9 bolts.

Torque:

Bolt A: 14 mm head bolt: 37 N.m (380 kgf.cm, 27 ft.lbf)

Bolt B: 17 mm head bolt: 71 N.m (724 kgf.cm, 52 ft.lbf)

HINT:

- Bolt (a) is tightened to the wire harness clamp.

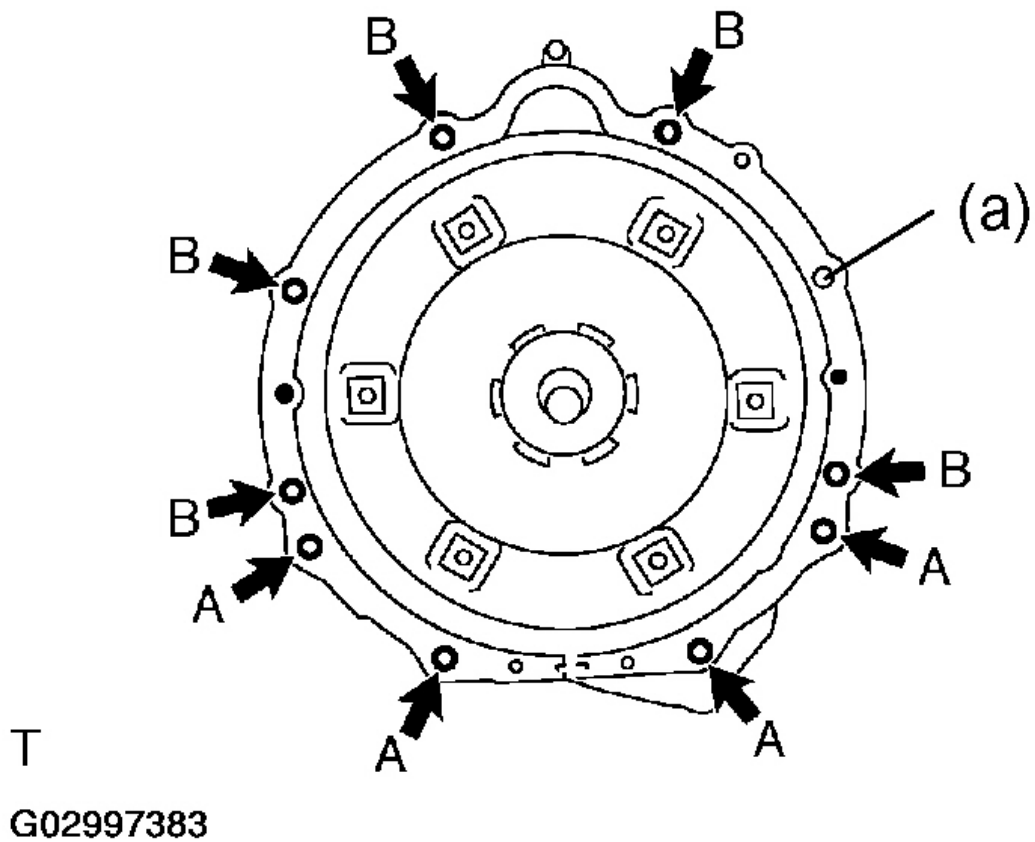
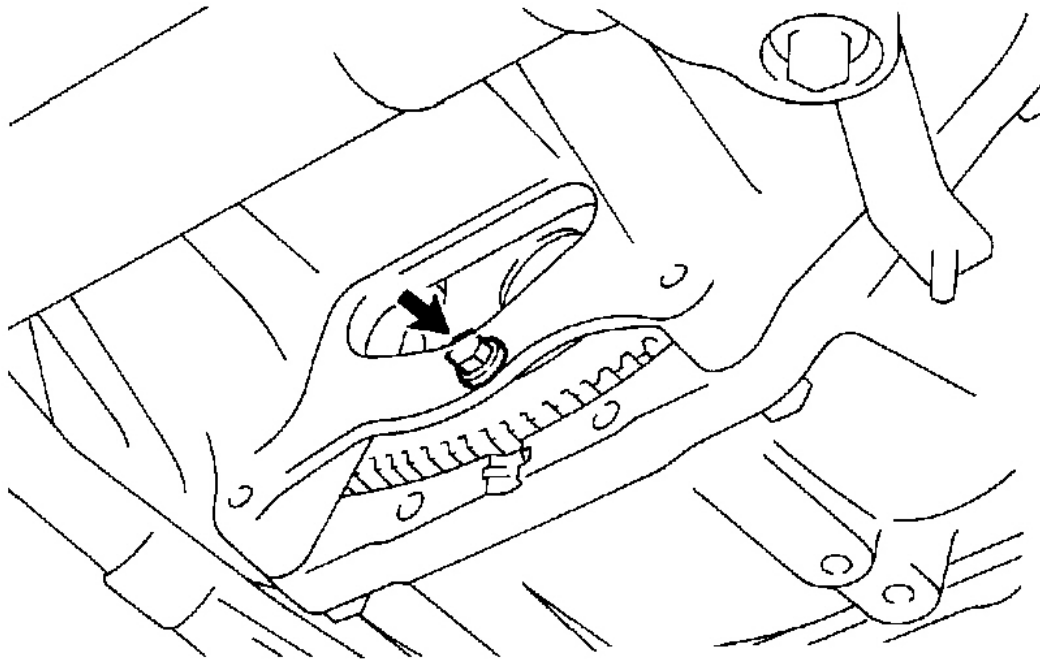


Fig. 46: Installing Automatic Transmission Assy To Engine With 9 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install the 6 torque converter clutch mounting bolts.
Torque: 48 N.m (490 kgf.cm, 35 ft.lbf)

HINT:

First install the black colored bolt and then the remaining 5 bolts.



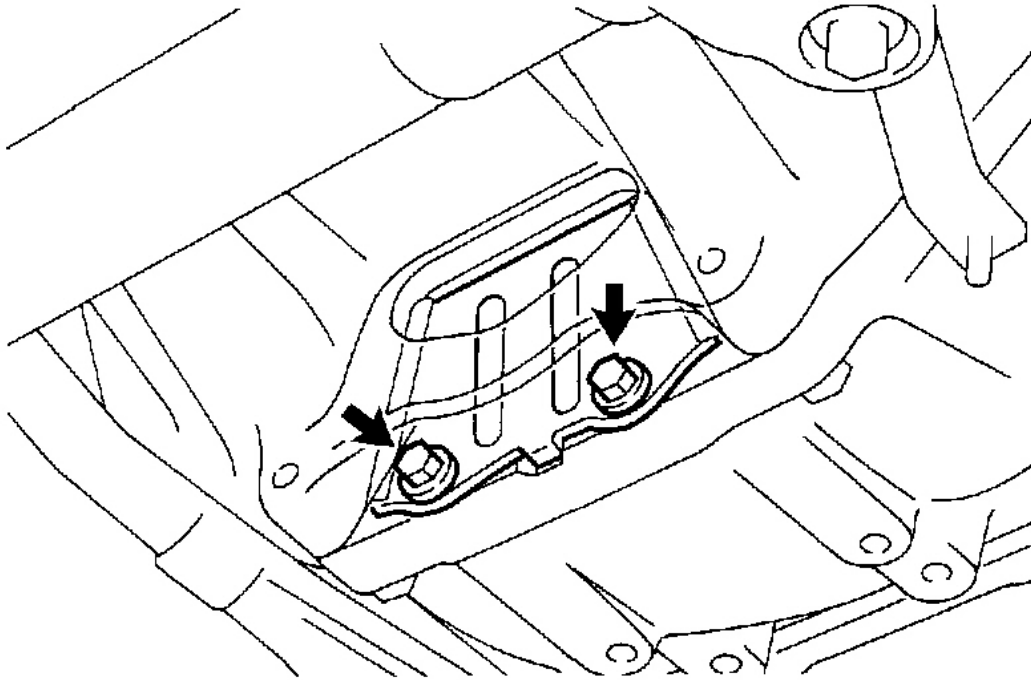
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Fig. 47: Installing 6 Torque Converter Clutch Mounting Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

42. INSTALL FLYWHEEL HOUSING UNDER COVER

- a. Install the fly wheel housing under cover with the 2 bolts.

Torque: 18 N.m (184 kgf.cm, 13 ft.lbf)



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Fig. 48: Installing Fly Wheel Housing Under Cover With 2 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

43. **INSTALL WIRE HARNESS**

- a. Install the wire harness clamps with the 5 bolts.

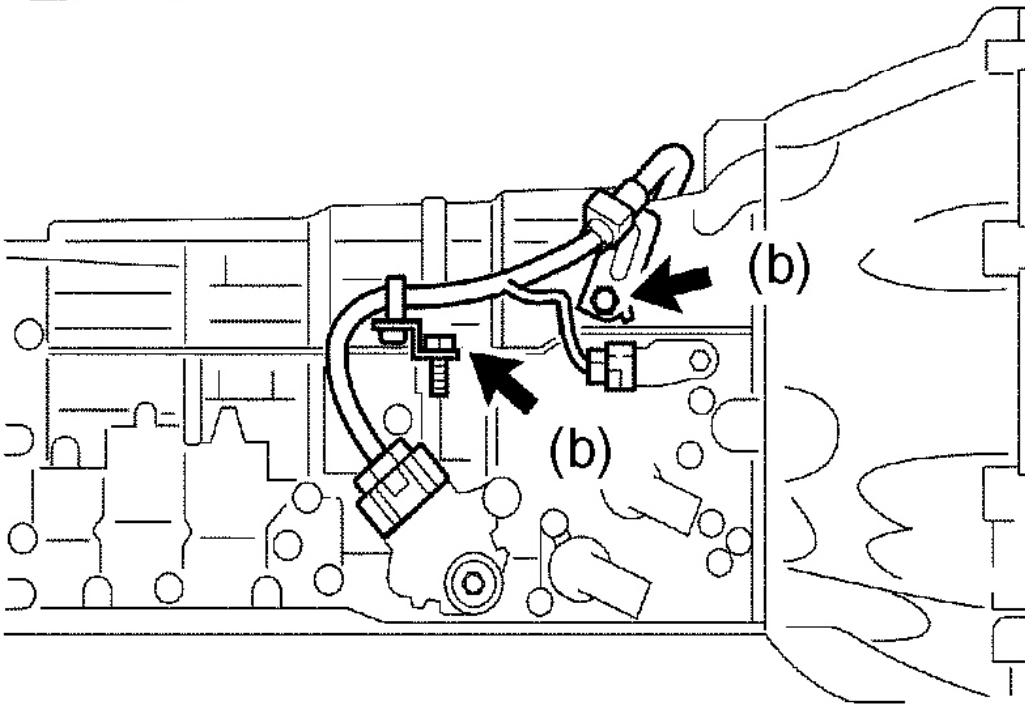
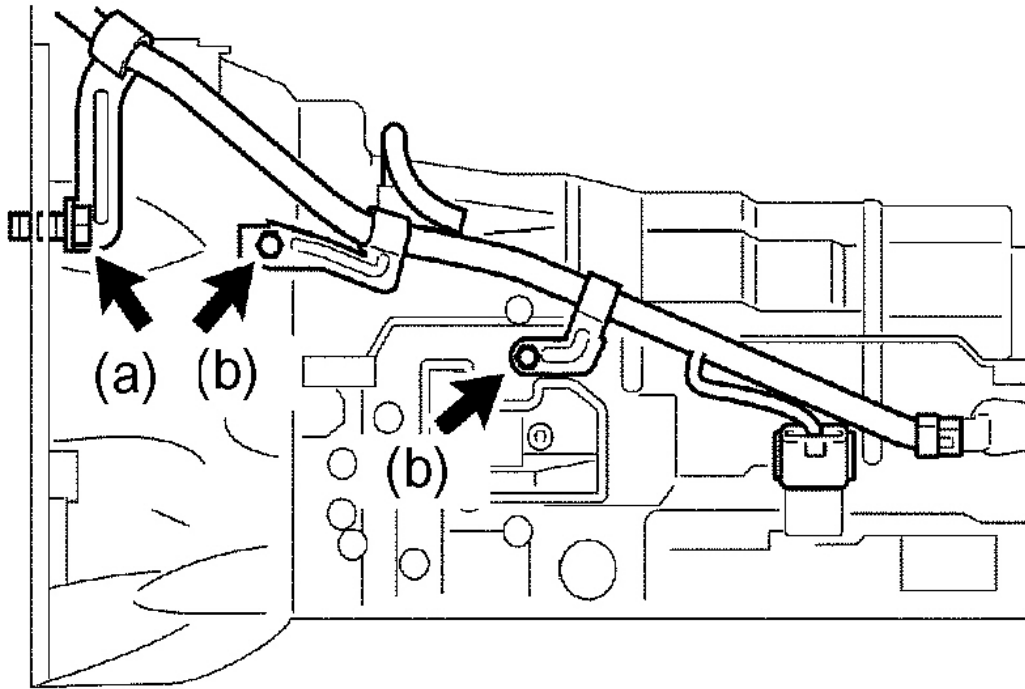
Torque:

Bolt (a): 68 N.m (694 kgf.cm, 51 ft.lbf)

Bolt (b): 7.5 N.m (76 kgf.cm, 66 in..lbf)

HINT:

Bolt (a) is tightened to the transmission housing.



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Fig. 49: Installing Wire Harness Clamps With 5 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

44. **INSTALL ENGINE REAR MOUNTING MEMBER**

- a. Install the engine rear mounting member with the 4 nuts.

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

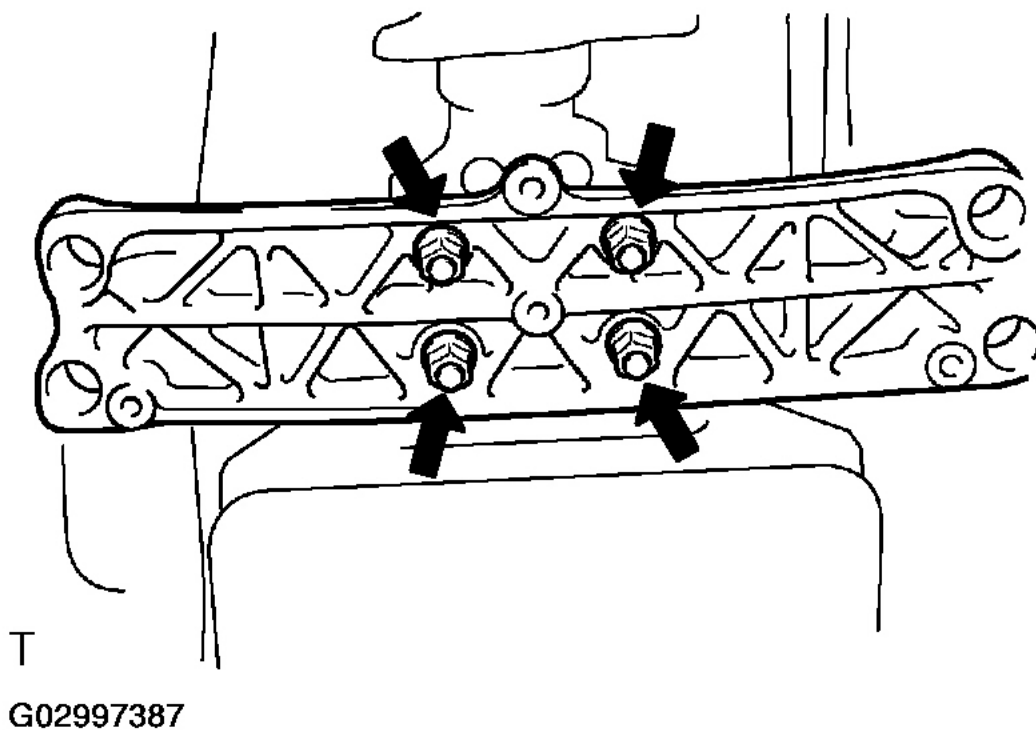
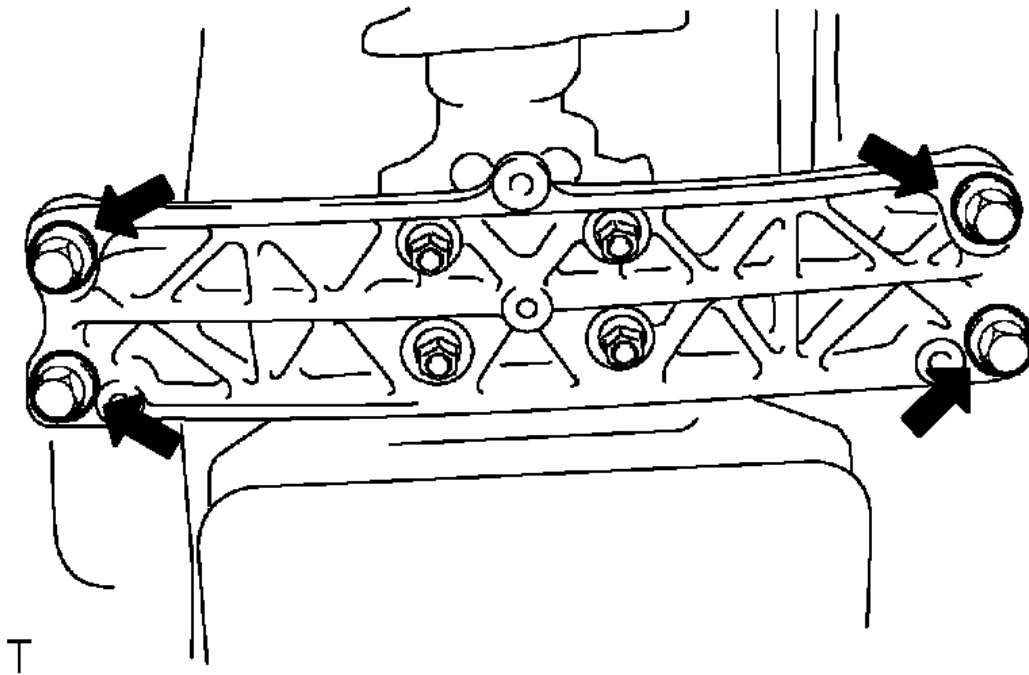


Fig. 50: Installing Engine Rear Mounting Member With 4 Nuts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install the engine rear mounting member with the 4 bolts.

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



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Fig. 51: Installing Engine Rear Mounting Member With 4 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

45. **CONNECT FLOOR SHIFT GEAR SHIFTING ROD SUB-ASSY**
 - a. Connect the floor shift gear shifting rod sub-assy with the nut.
Torque: 13 N.m (130 kgf.cm, 9 ft.lbf)

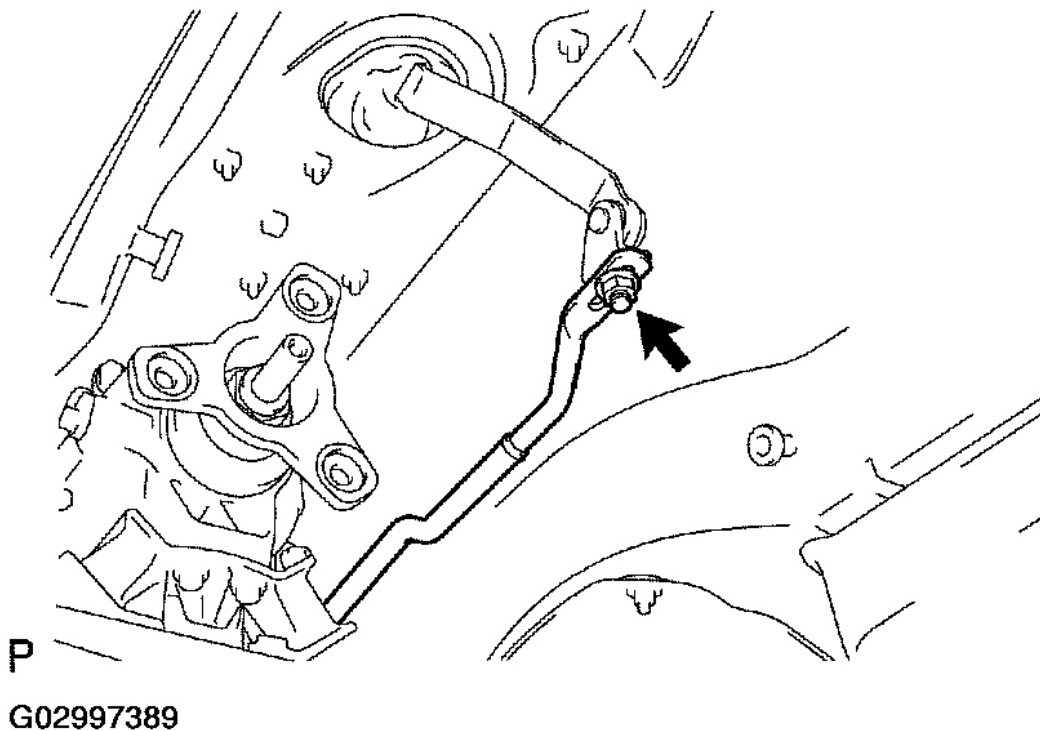


Fig. 52: Connecting Floor Shift Gear Shifting Rod Sub-Assy With Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

46. **INSTALL OIL COOLER OUTLET TUBE NO.1**
- Temporarily install the oil cooler outlet tube No.1.
 - Temporarily install the oil cooler inlet tube No.1.
 - Install the 2 clamps with the 2 bolts.

Torque: 5 N.m (51 kgf.cm, 43 in..lbf)

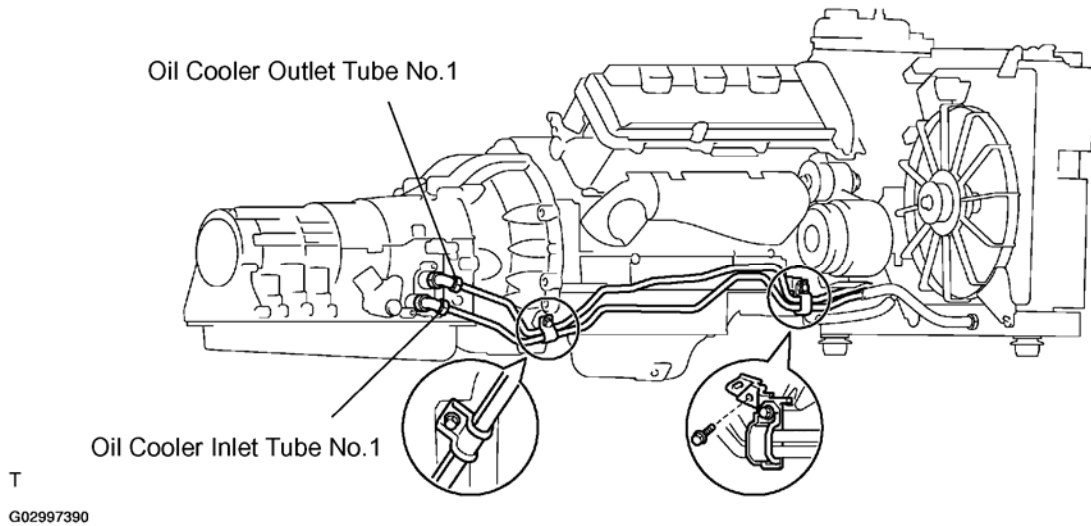
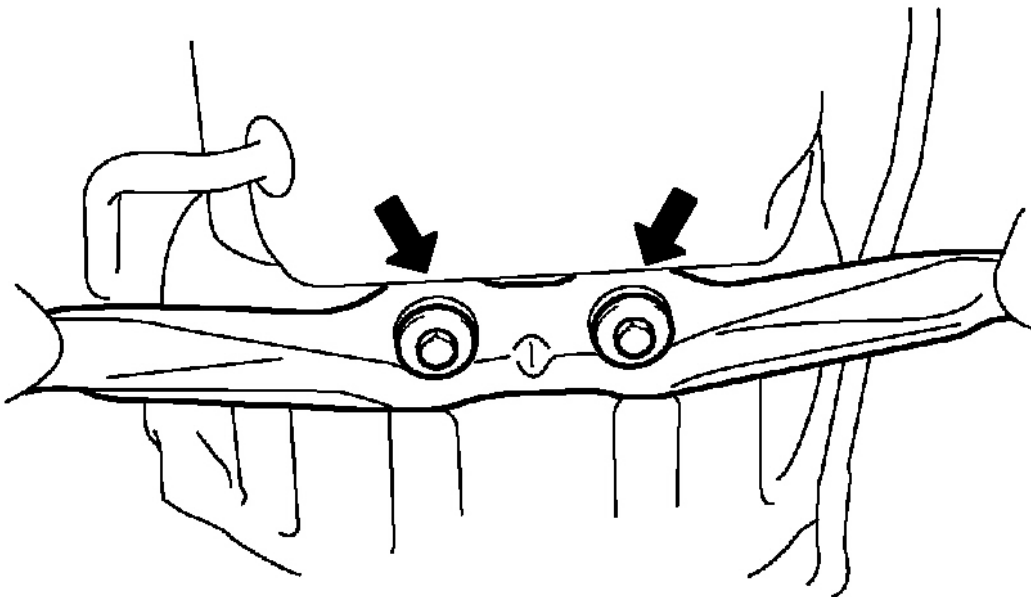


Fig. 53: Installing 2 Clamps With 2 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. Tighten the oil cooler outlet tube No.1.
Torque: 44 N.m (450 kgf.cm, 32 ft.lbf)
- 47. **INSTALL OIL COOLER INLET TUBE NO.1**
 - a. Tighten the oil cooler inlet tube No.1.
Torque: 44 N.m (450 kgf.cm, 32 ft.lbf)
- 48. **INSTALL EXHAUST PIPE NO.1 SUPPORT BRACKET SUB-ASSY**
 - a. Install the exhaust pipe No.1 support bracket sub-assy with the 2 bolts.
Torque: 44 N.m (450 kgf.cm, 32 ft.lbf)



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Fig. 54: Installing Exhaust Pipe No.1 Support Bracket Sub-Assy With 2 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

49. **CONNECT BATTERY NEGATIVE TERMINAL**
50. **ADJUST SHIFT LEVER POSITION (SEE ADJUSTMENT)**
51. **INSPECT SHIFT LEVER POSITION (SEE ADJUSTMENT)**
52. **INSTALL PROPELLER W/CENTER BEARING SHAFT ASSY (SEE OVERHAUL)**
53. **INSTALL FRONT FLOOR HEAT INSULATOR NO.1 (SEE OVERHAUL)**
54. **INSTALL EXHAUST PIPE ASSY (SEE REPLACEMENT)**
55. **INSTALL FRONT FLOOR BRACE CENTER (SEE REPLACEMENT)**
56. **ADD AUTOMATIC TRANSMISSION FLUID (SEE ADJUSTMENT)**
Fluid type: ATF WS
Capacity: 1.7 liters (1.8 US qts, 1.5 Imp. qts)
57. **INSTALL ENGINE UNDER COVER NO.2**
58. **INSTALL ENGINE UNDER COVER NO.1**
59. **RESET MEMORY (SEE INITIALIZATION)**
60. **PERFORM INITIALIZATION (SEE INITIALIZATION)**

TORQUE CONVERTER CLUTCH ASSY

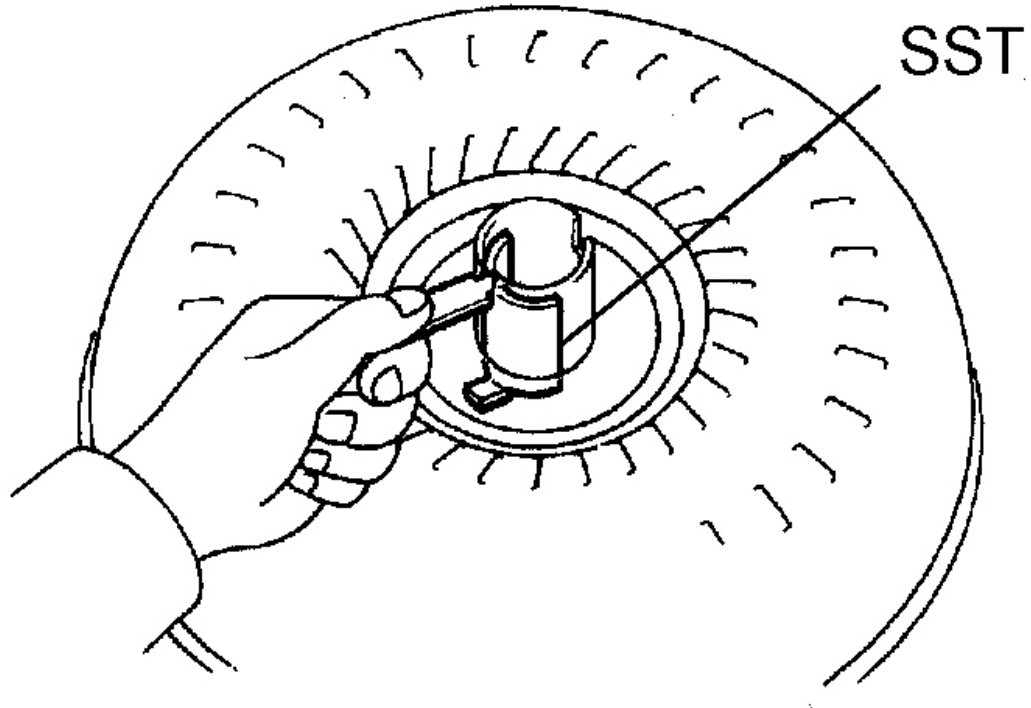
INSPECTION

1. INSPECT TORQUE CONVERTER CLUTCH ASSY

a. Inspect the one-way clutch.

1. 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)



G02997392

Fig. 55: Installing SST

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. Press on the serrations of the starter with a finger and rotate it.

Clean the converter and retest the one-way clutch.

When the one-way clutch is turned clockwise, it rotates freely and when turned counterclockwise, it locks.

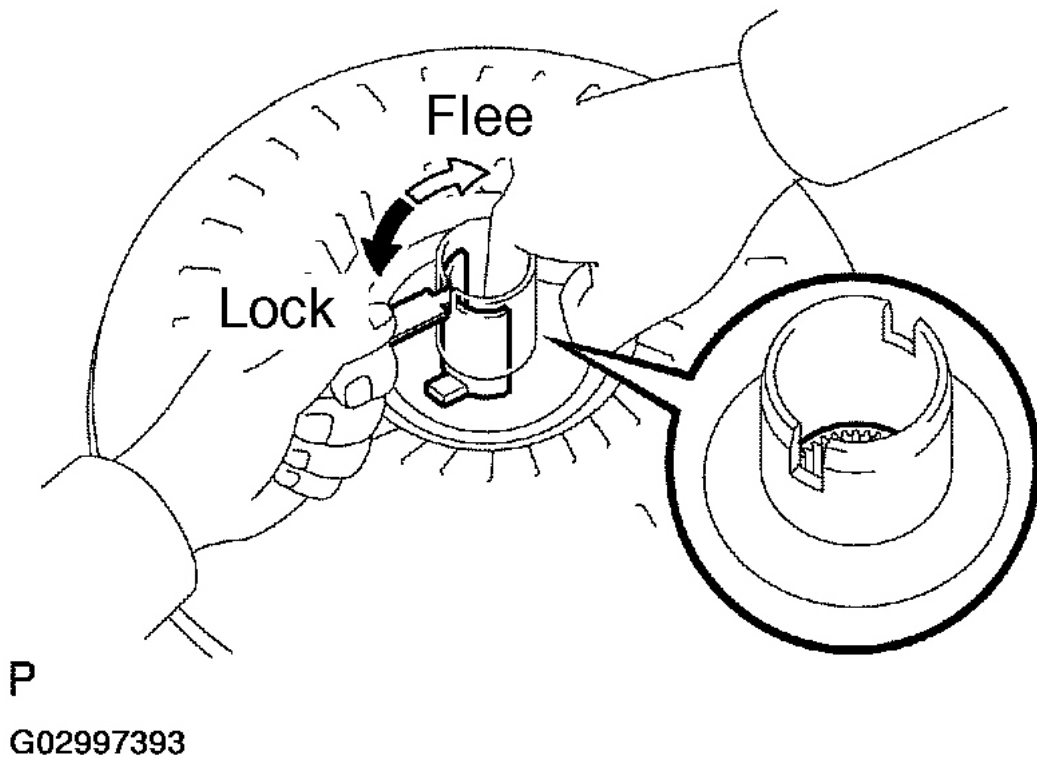


Fig. 56: Pressing On Serrations Of Starter
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Determine the condition of the torque converter clutch assy.
 1. If the inspection result of the torque converter clutch assy does not satisfy the standard conditions, replace the torque converter clutch assy.

Malfunction item:

A metallic sound is emitted from the torque converter clutch assy during the stall test or when the shift lever is moved to the N position.

The one-way clutch is free or locked in both directions.

The amount of powder in the ATF is greater than the sample shown on the illust (see the sample).

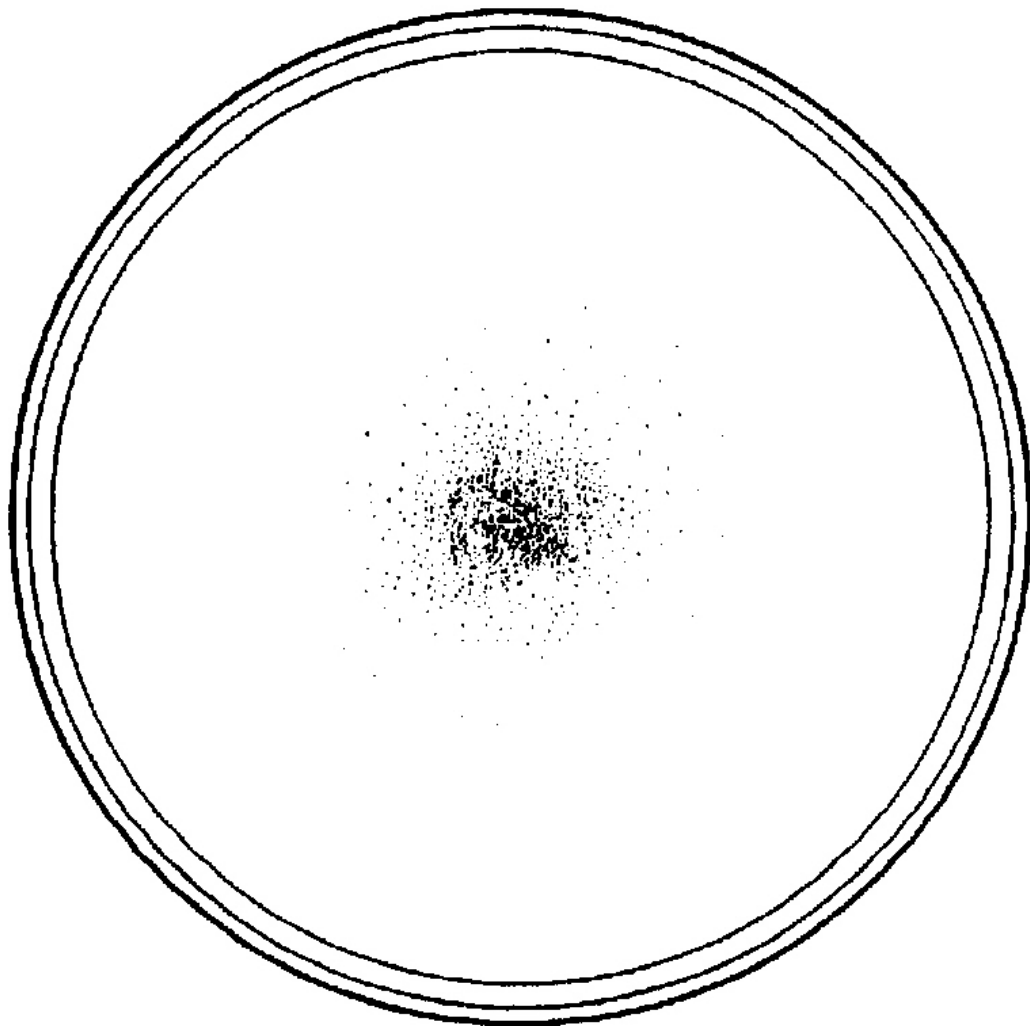
HINT:

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

c. Change 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 the ATF with the torque converter facing up.

Sample showing minimum amount of powder in ATF



Actual Size

G02997394

Fig. 57: Locating Minimum Amount Of Powder In ATF

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

2. INSPECT RUNOUT OF DRIVE PLATE & RING GEAR SUB-ASSY

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

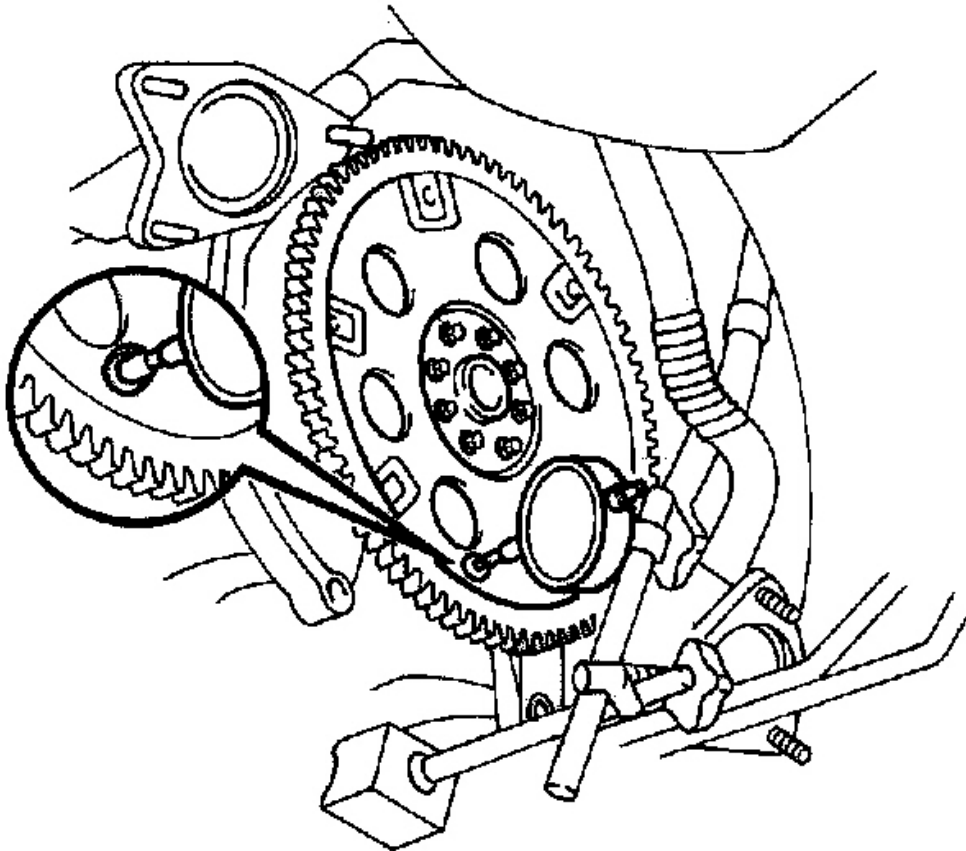
Maximum runout: 0.20 mm (0.0079 in.)

If runout is not within specification or if the ring gear is damaged, replace the drive plate. If installing a new drive plate, note the orientation of the spacers and tighten the bolts.

Torque:

1st: 49 N.m (500 kgf.cm, 36 ft.lbf)

2nd: Turn extra 90°



G02997395

Fig. 58: Measuring Drive Plate Runout

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

3. INSPECT RUNOUT OF TORQUE CONVERTER CLUTCH ASSY

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

Maximum runout: 0.30 mm (0.0118 in.)

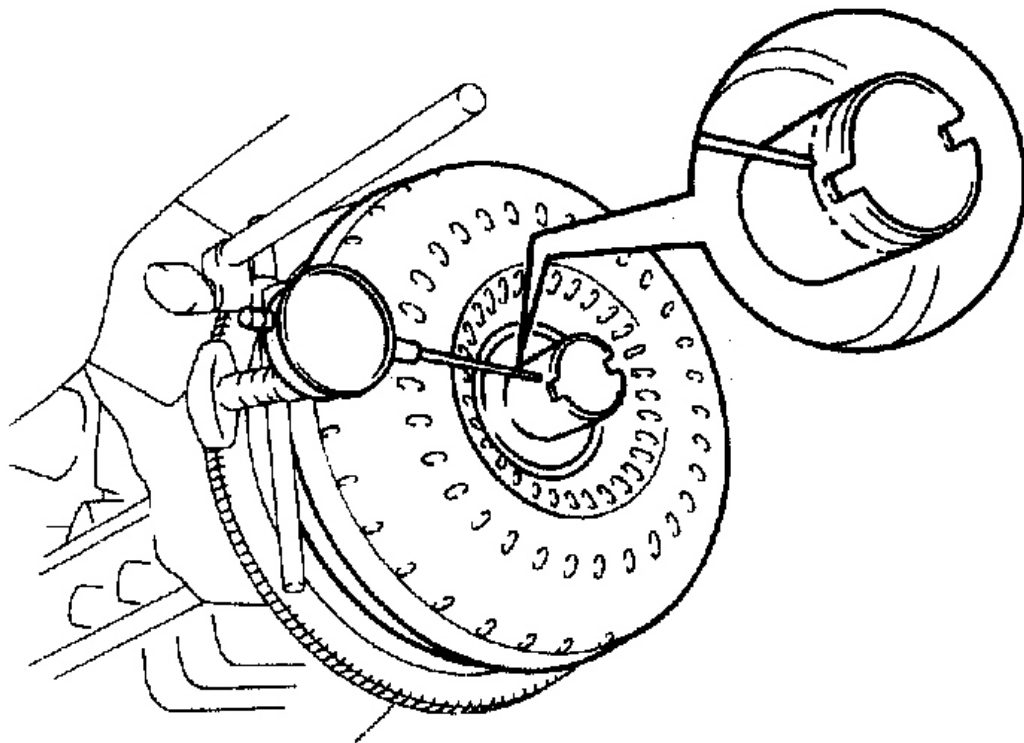
If runout exceeds the maximum, try to correct by changing the installation direction of the torque converter clutch.

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

HINT:

Mark the position of the torque converter clutch to reinstall it correctly.

- b. Remove the torque converter clutch.



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Fig. 59: Checking Runout Of Torque Converter Clutch Assy

TRANSMISSION WIRE

REPLACEMENT

CAUTION: When working with FIPG material, perform the following:

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

1. **DISCONNECT BATTERY NEGATIVE TERMINAL**

2. **DRAIN AUTOMATIC TRANSMISSION FLUID**

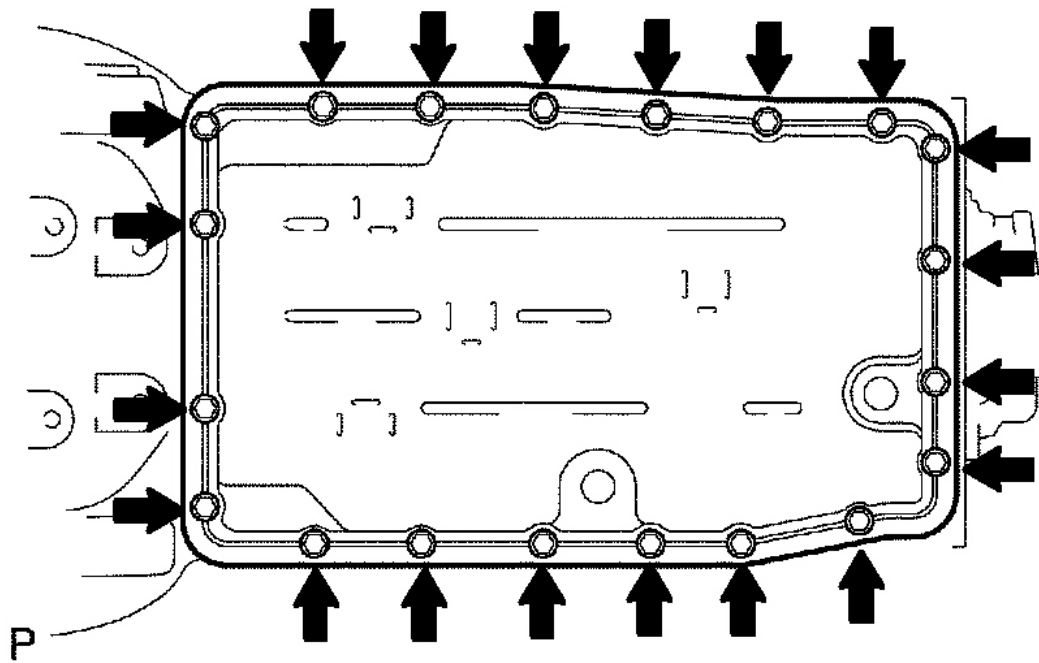
- a. Remove the drain plug, gasket and drain the ATF.
- b. Install a new gasket and the drain plug.

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

3. **REMOVE AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY**

NOTE: Some fluid will remain in the oil pan.

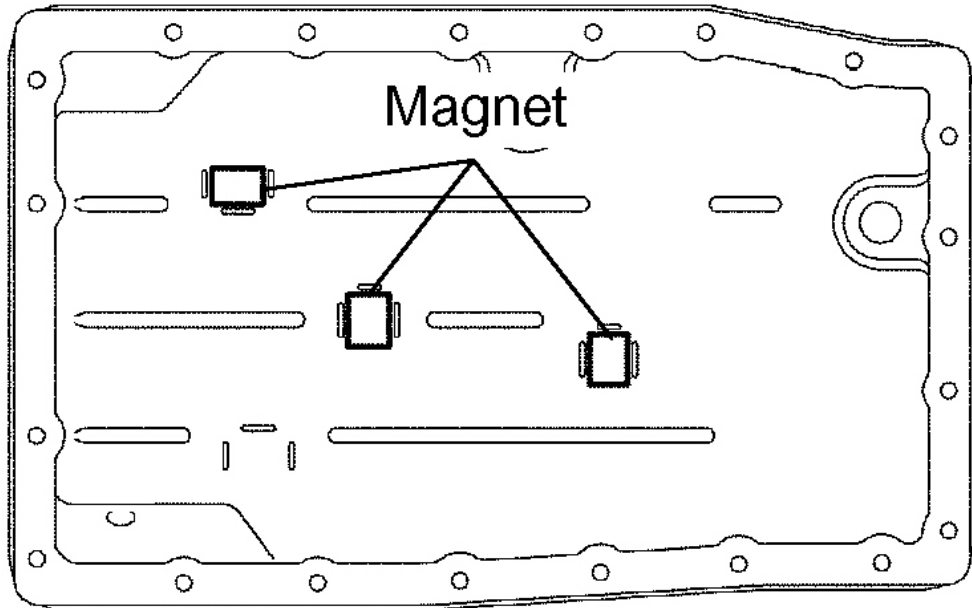
- a. Remove the 20 bolts, oil pan and gasket.



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Fig. 60: Removing 20 Bolts, Oil Pan And Gasket
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the 3 magnets from the oil pan.



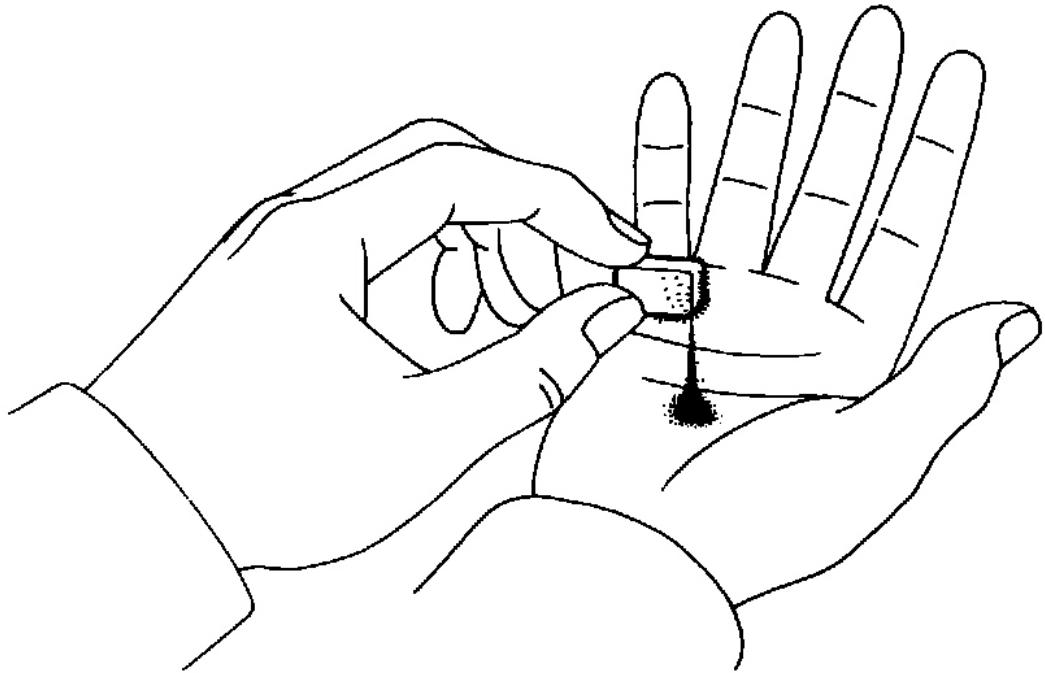
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Fig. 61: Removing 3 Magnets From Oil Pan
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Examine particles in pan.
 1. Collect any steel chips with the removed magnets. Carefully look at the foreign objects and particles in the pan and on the magnets to guess at the type of wear which might be found in the transmission. Steel (magnetic) hellip bearing, gear and clutch plate wear

Brass (non-magnetic) hellip bushing wear



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Fig. 62: Removing Magnets

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. REMOVE VALVE BODY OIL STRAINER ASSY

- a. Remove the 4 bolts and oil strainer.

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

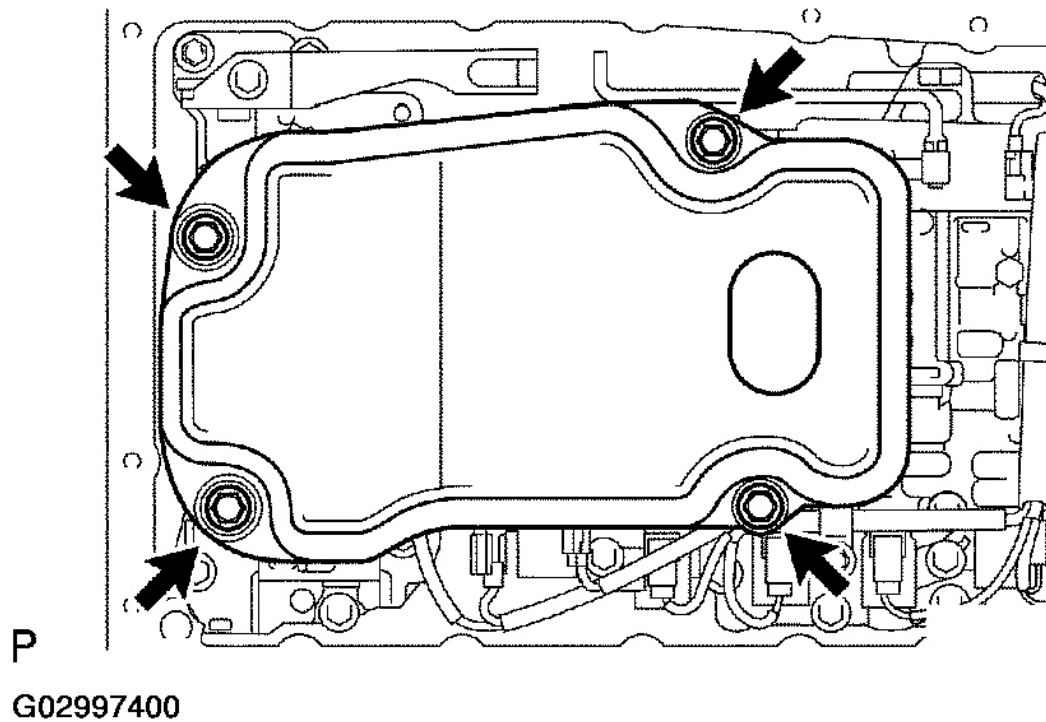
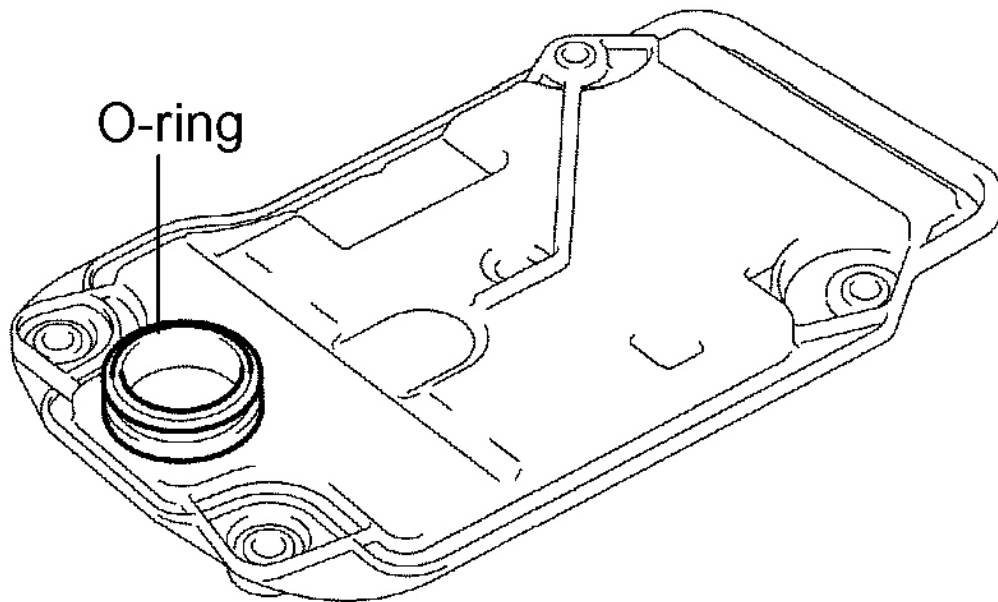


Fig. 63: Removing 4 Bolts And Oil Strainer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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



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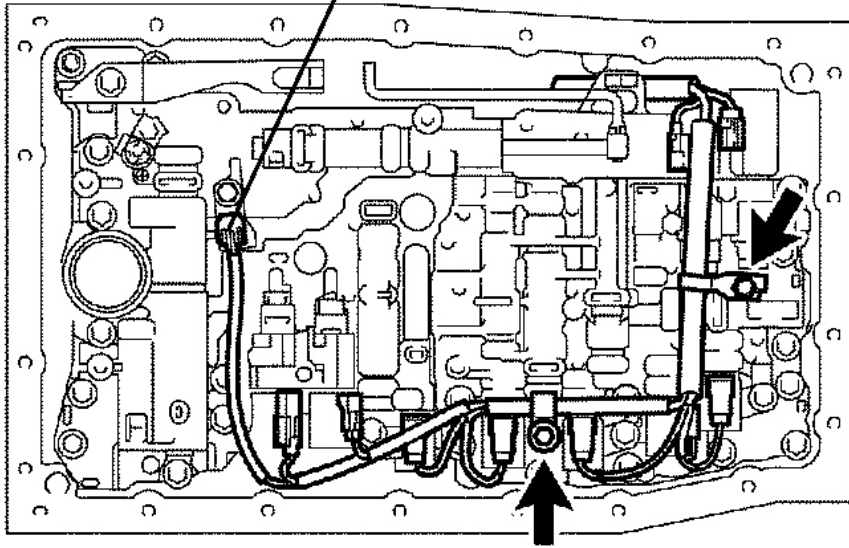
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Fig. 64: Removing O-Ring From Oil Strainer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. DISCONNECT TRANSMISSION WIRE

- a. Remove the bolt and lock plate, and separate the ATF temperature sensor.
- b. Remove the 2 bolts and 2 clamps.
- c. Separate the 9 connectors from the solenoid valves.

ATF Temperature Sensor



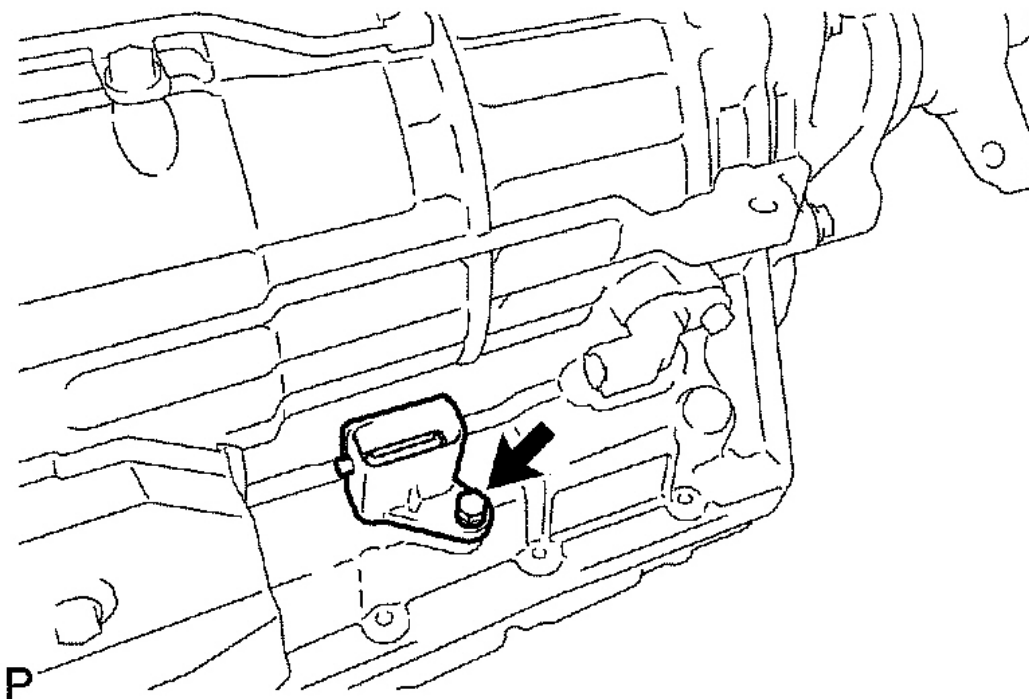
P

G02997402

Fig. 65: Removing Bolt And Lock Plate, And Separate ATF Temperature Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. REMOVE TRANSMISSION WIRE

- a. Disconnect the transmission wire connector.
- b. Remove the bolt and pull out the transmission wire.



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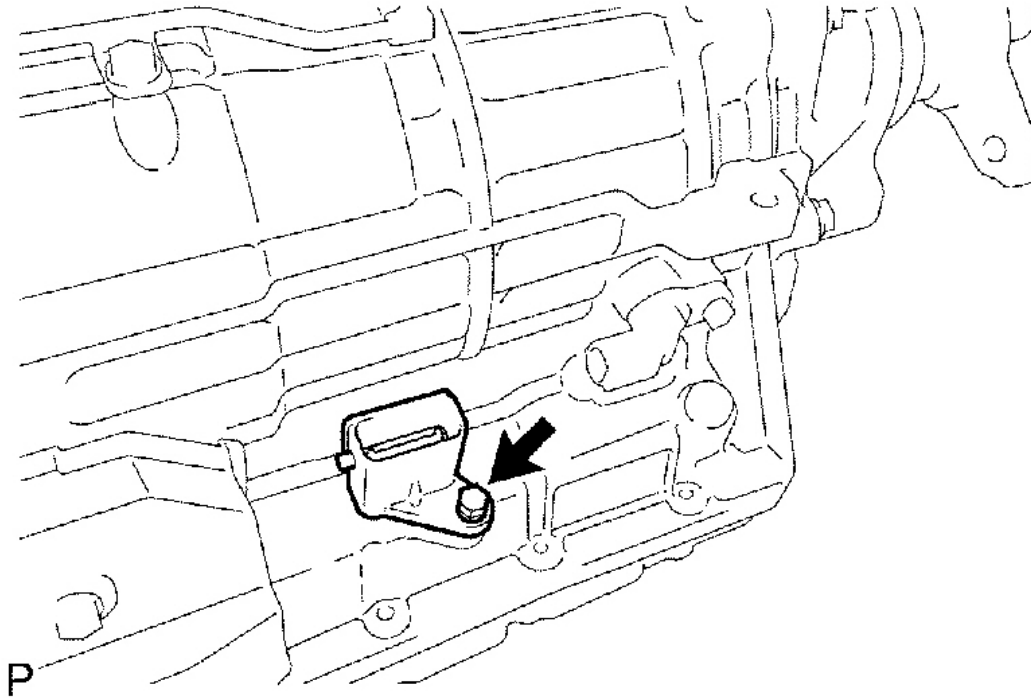
Fig. 66: Removing Bolt And Pulling Out Transmission Wire
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. INSTALL TRANSMISSION WIRE

- a. Coat an 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)

- c. Connect the transmission wire connector.



G02997404

Fig. 67: Installing Transmission Wire With Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. CONNECT TRANSMISSION WIRE

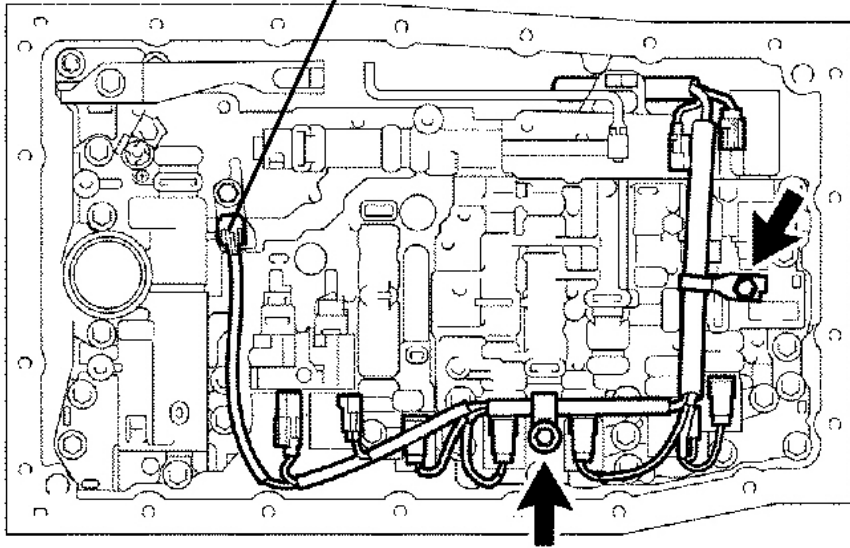
- a. Coat a new O-ring of the ATF temperature sensor with ATF.
- b. Connect the 9 connectors to the solenoid valves.
- c. Install the 2 clamps with the 2 bolts.

Torque: 10 N.m (100 kgf.cm, 7 ft.lbf)

- d. Install the ATF temperature sensor and lock plate with the bolt.

Torque: 10 N.m (100 kgf.cm, 7 ft.lbf)

ATF Temperature Sensor



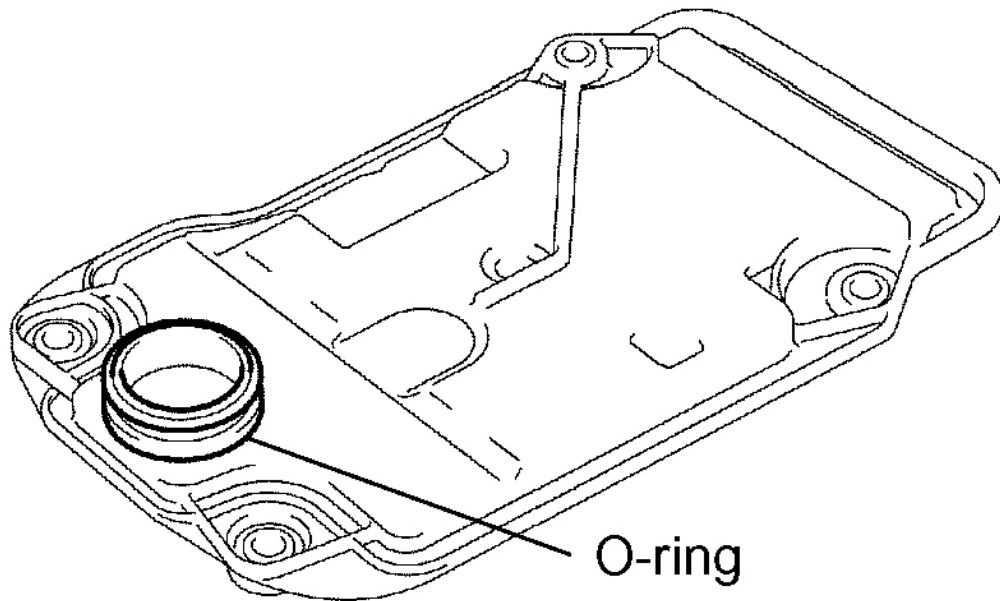
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G02997405

Fig. 68: Installing ATF Temperature Sensor And Lock Plate With Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. INSTALL VALVE BODY OIL STRAINER ASSY

- a. Coat a new O-ring with ATF.
- b. Install the O-ring.



P

G02997406

Fig. 69: Installing O-Ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

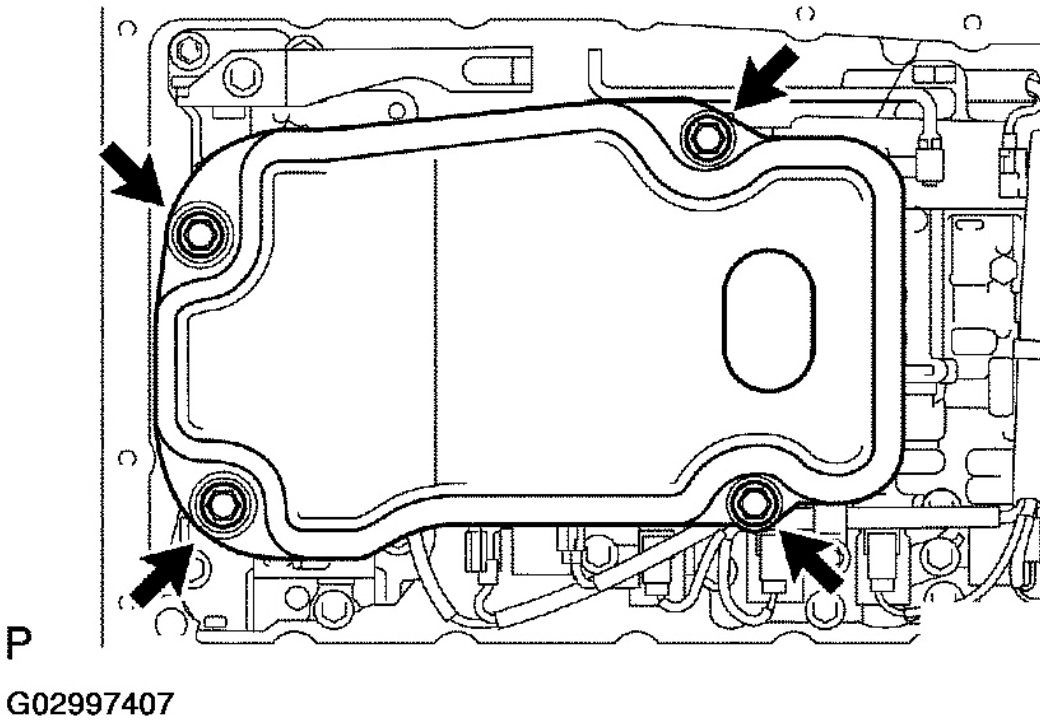
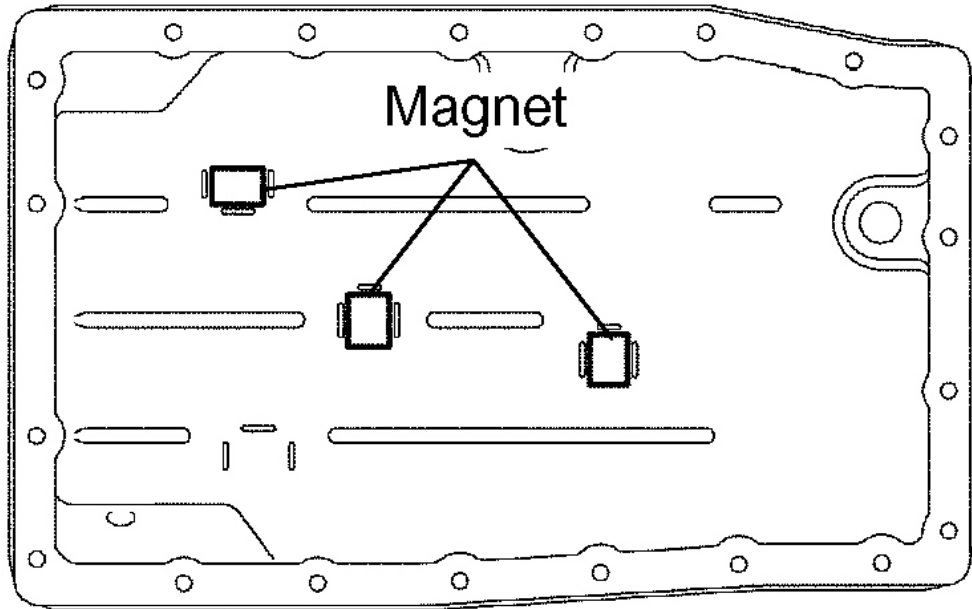


Fig. 70: Installing Oil Strainer With 4 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. **INSTALL AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY**
 - a. Install the 3 magnets in the oil pan.



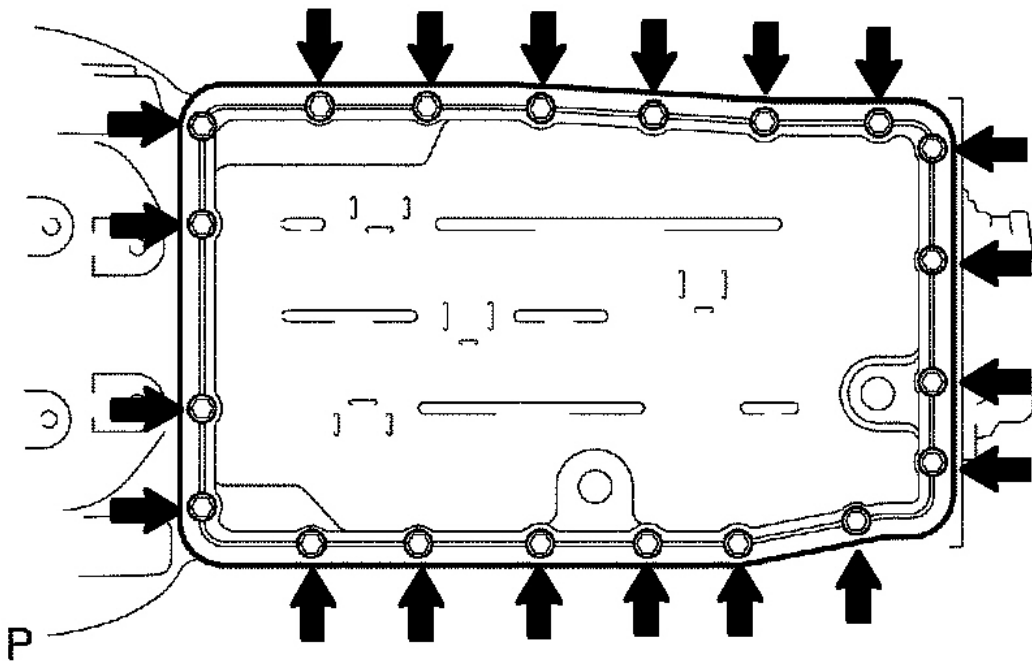
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G02997408

Fig. 71: Installing 3 Magnets In Oil Pan

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Using a new gasket, install the oil pan with the 20 bolts to the transmission case.
Torque: 4.4 N.m (44 kgf.cm, 39 in..lbf)



G02997409

Fig. 72: Installing Oil Pan With 20 Bolts To Transmission Case
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

11. **CONNECT BATTERY NEGATIVE TERMINAL**
12. **ADD AUTOMATIC TRANSMISSION FLUID (SEE ADJUSTMENT)**
 Fluid type: ATF WS
 Capacity: 4.3 liters (4.5 US qts, 3.8 Imp.qts)
13. **RESET MEMORY (SEE INITIALIZATION)**
14. **PERFORM INITIALIZATION (SEE INITIALIZATION)**

TRANSMISSION VALVE BODY ASSY

REPLACEMENT

CAUTION: When working with FIPG material, perform the following:

- Using a razor blade and gasket scraper, remove all the old FIPG material from the gasket surfaces.
- Thoroughly clean all components to remove any loose material.

- Clean both sealing surfaces with a non-residue solvent.
- Apply FIPG in a continuous line width approximately 1 mm (0.04 in.) along the sealing surface.
- Parts must be assembled within 10 minutes of application. Otherwise, the FIPG material must be removed and reapplied.

1. **DISCONNECT BATTERY NEGATIVE TERMINAL**

2. **DRAIN AUTOMATIC TRANSMISSION FLUID**

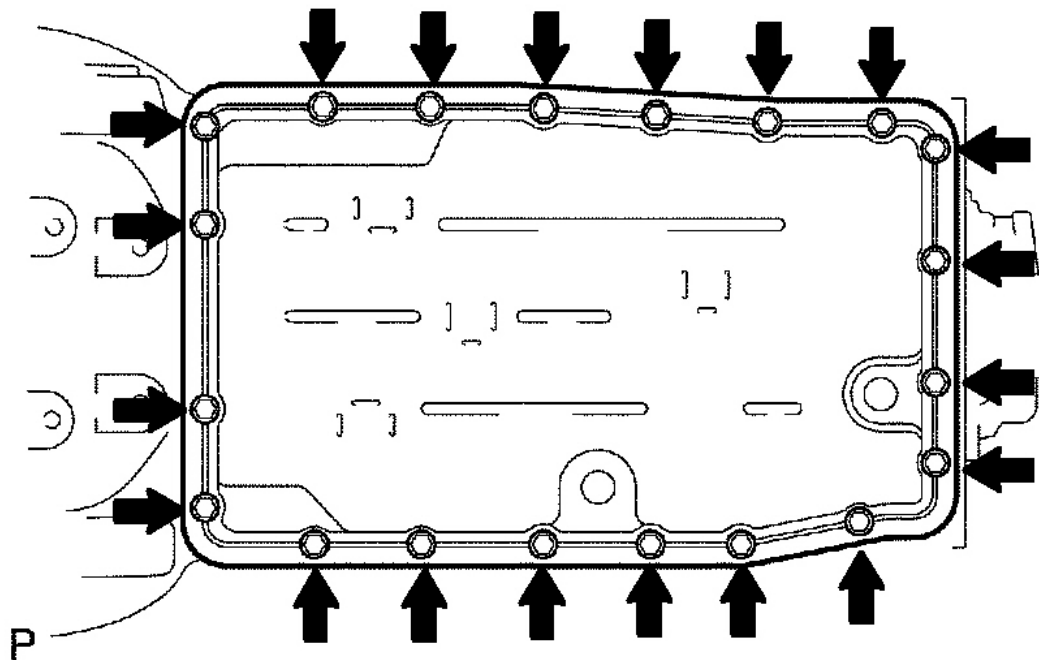
- Remove the drain plug, gasket and drain the ATF.
- Install a new gasket and the drain plug.

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

3. **REMOVE AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY**

NOTE: Some fluid will remain in the oil pan.

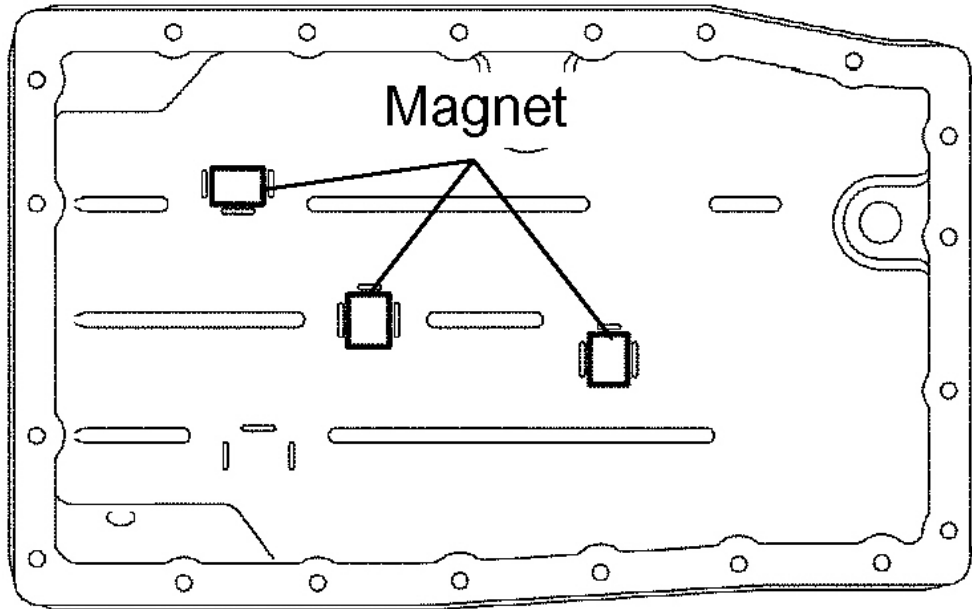
- Remove the 20 bolts, oil pan and gasket.



G02997410

Fig. 73: Removing 20 Bolts, Oil Pan And Gasket
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Remove the 3 magnets from the oil pan.



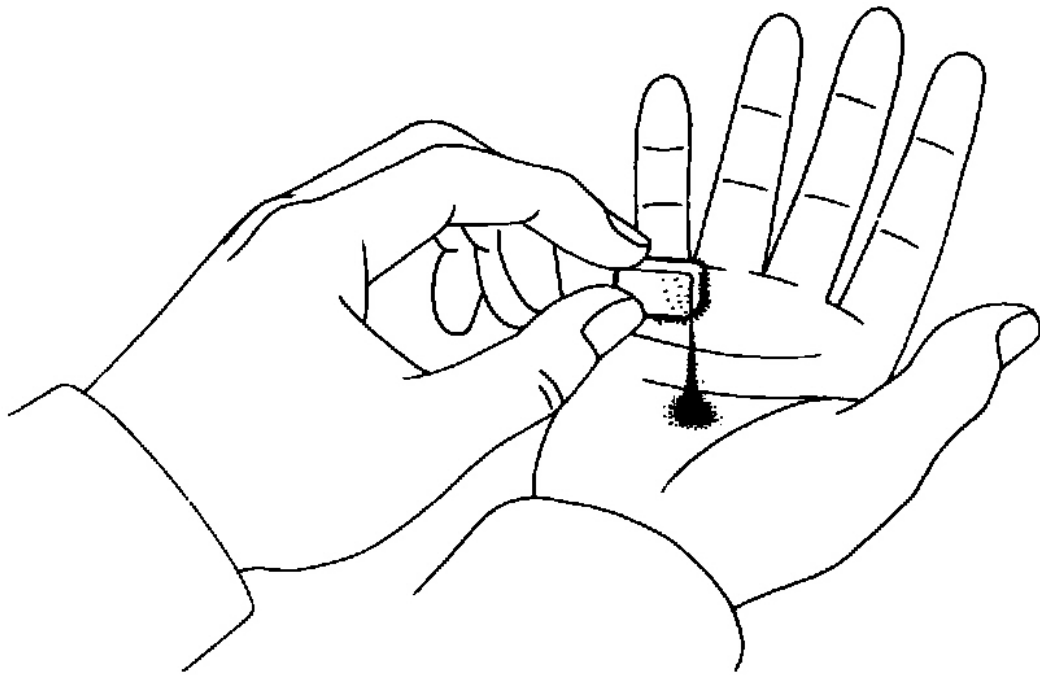
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G02997411

Fig. 74: Removing 3 Magnets From Oil Pan
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Examine particles in the pan.
 - a. Collect any steel chips with the removed magnets. Carefully look at the foreign objects and particles in the pan and on the magnets to guess at the type of wear which might be found in the transmission. Steel (magnetic) hellip bearing, gear and clutch plate wear

Brass (non-magnetic) hellip bushing wear



G02997412

Fig. 75: Removing Magnets

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

4. REMOVE VALVE BODY OIL STRAINER ASSY

- a. Remove the 4 bolts and oil strainer.

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

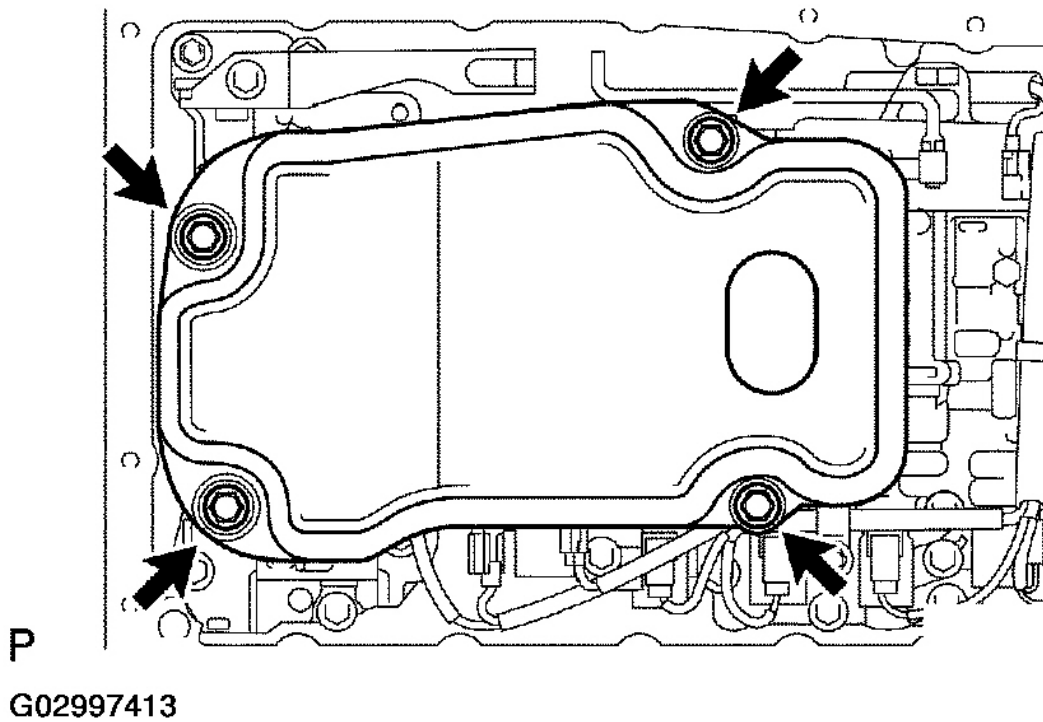
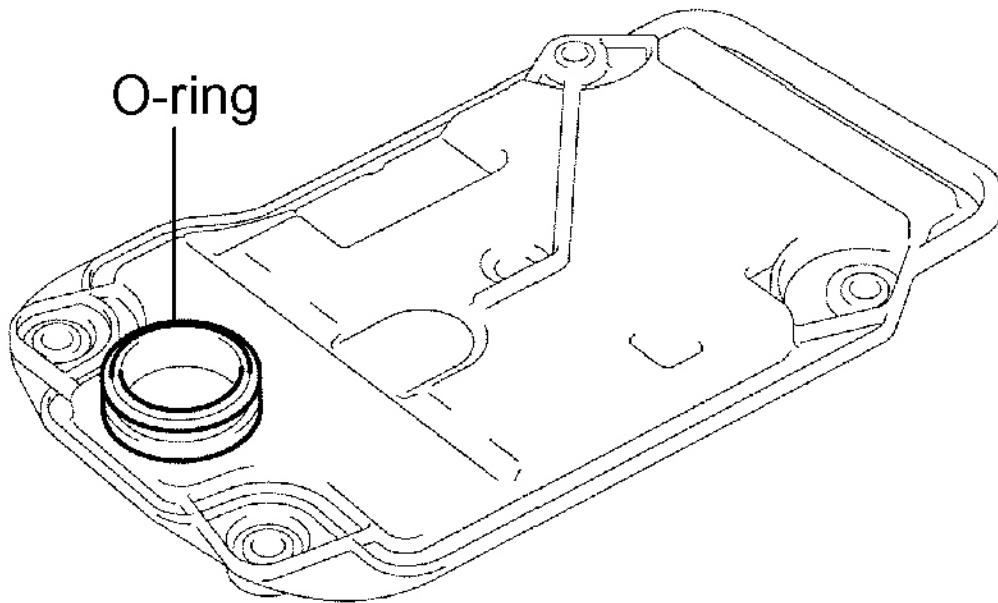


Fig. 76: Removing 4 Bolts And Oil Strainer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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



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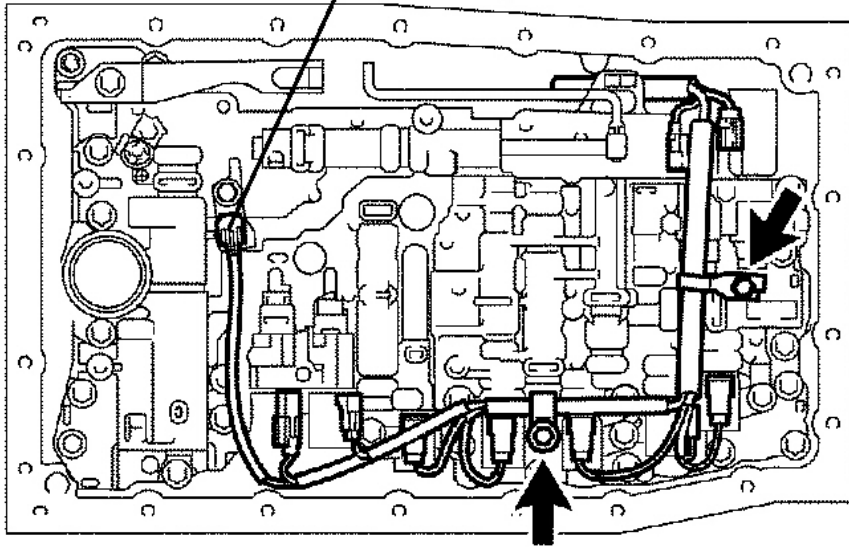
G02997414

Fig. 77: Removing O-Ring From Oil Strainer
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

5. DISCONNECT TRANSMISSION WIRE

- a. Remove the bolt and lock plate, and separate the ATF temperature sensor.
- b. Remove the 2 bolts and 2 clamps.
- c. Separate the 9 connectors from the solenoid valves.

ATF Temperature Sensor

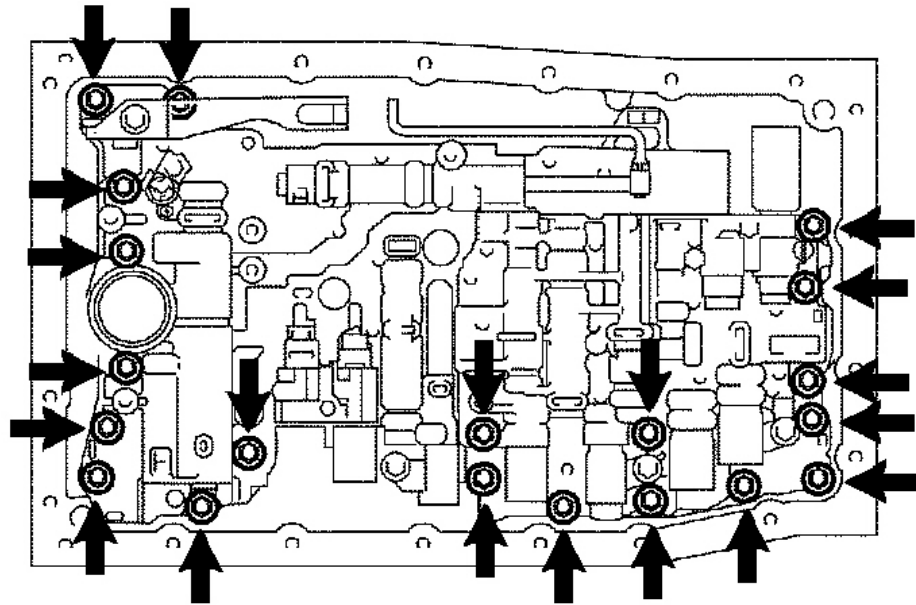


P

G02997415

Fig. 78: Removing Bolt And Lock Plate, And Separating ATF Temperature Sensor
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

6. **REMOVE TRANSMISSION VALVE BODY ASSY**
 - a. Remove the 20 bolts and valve body.



P

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Fig. 79: Removing 20 Bolts And Valve Body
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Remove the check ball body and spring.

NOTE: Do not drop the check ball body and spring.

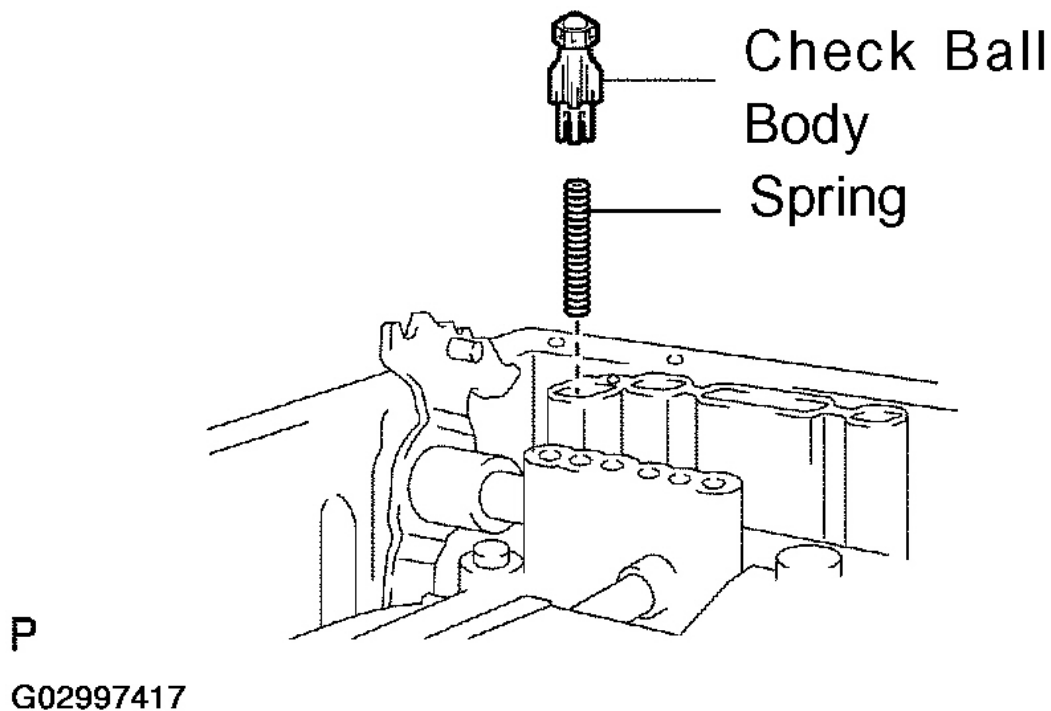
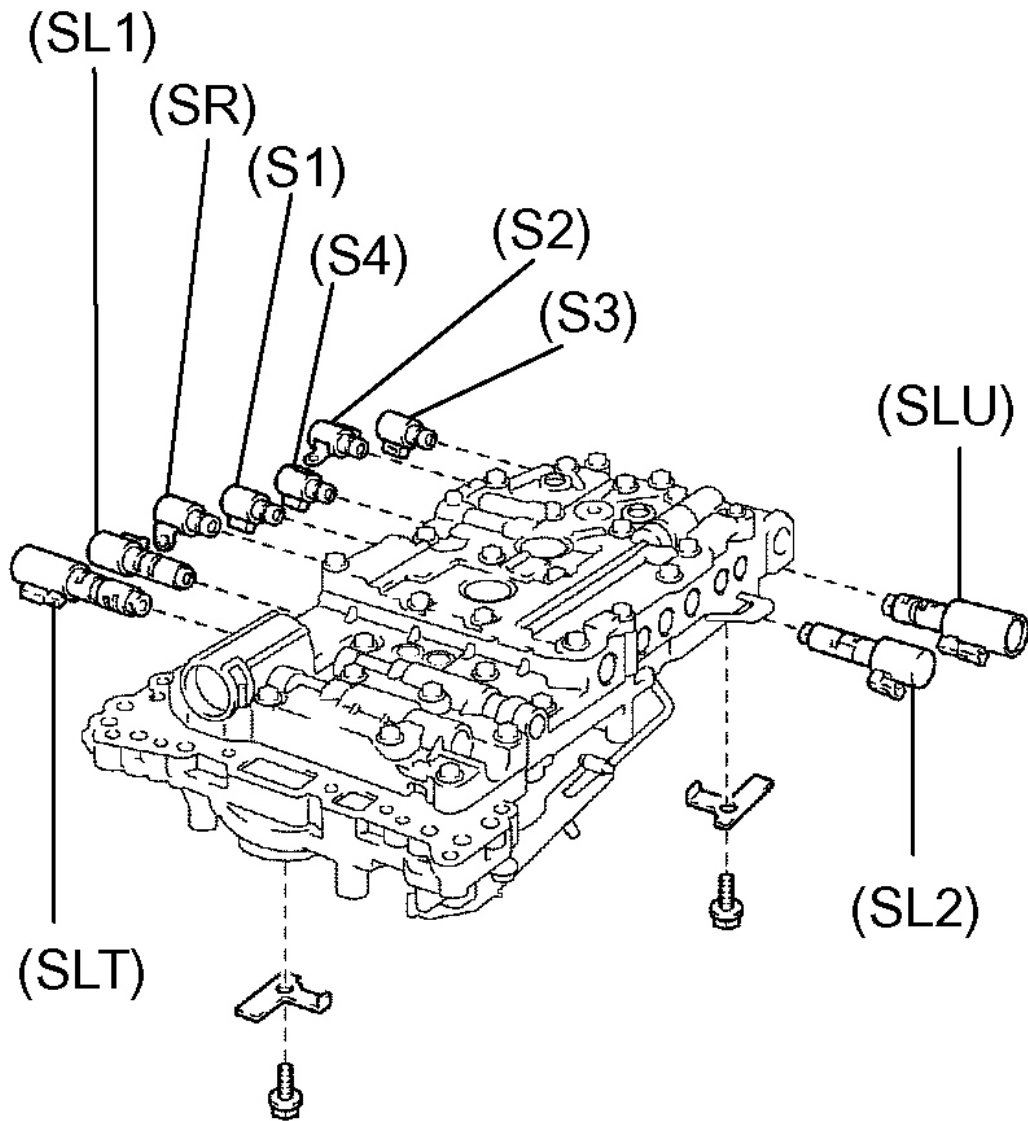


Fig. 80: Removing Check Ball Body And Spring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Remove the bolt, lock plate and lock up control solenoid (SLU) and clutch control solenoid (SL2).
- d. Remove the bolt and automatic transmission 3-way solenoid assy (S3).
- e. Remove the bolt and automatic transmission 3-way solenoid (S2) and automatic transmission 3-way solenoid (S4).
- f. Remove the bolt and automatic transmission 3-way solenoid (S1).
- g. Remove the bolt and automatic transmission 3-way solenoid (SR).
- h. Remove the bolt, lock plate and clutch control solenoid No.1 (SL1) and line pressure control solenoid (SLT).



P

G02997418

Fig. 81: Removing Bolt And Automatic Transmission 3-Way Solenoid Assy (S3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

7. INSTALL TRANSMISSION VALVE BODY ASSY

- a. Install the clutch control solenoid No.1 (SL1) and line pressure control solenoid (SLT) with the lock plate and bolt.

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

- b. Install the automatic transmission 3-way solenoid (SR) with the bolt.

Torque: 10 N.m (100 kgf.cm, 7 ft.lbf)

- c. Install the automatic transmission 3-way solenoid (S1) with the bolt.

Torque: 10 N.m (100 kgf.cm, 7 ft.lbf)

- d. Install the automatic transmission 3-way solenoid (S2) and automatic transmission 3-way solenoid (S4) with the bolt.

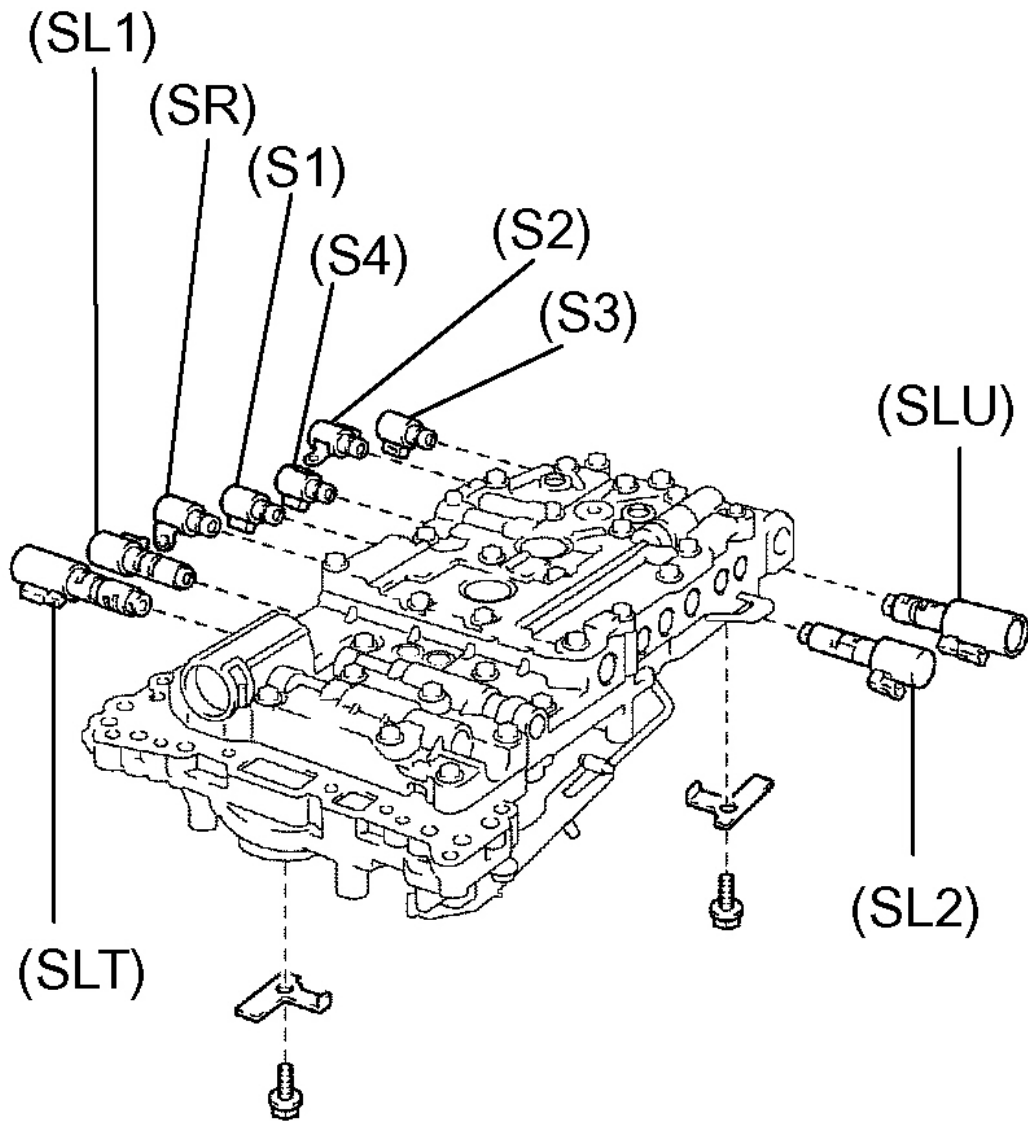
Torque: 10 N.m (100 kgf.cm, 7 ft.lbf)

- e. Install the automatic transmission 3-way solenoid (S3) with the bolt.

Torque: 10 N.m (100 kgf.cm, 7 ft.lbf)

- f. Install the lock up control solenoid (SLU) and clutch control solenoid (SL2) with the lock plate and bolt.

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



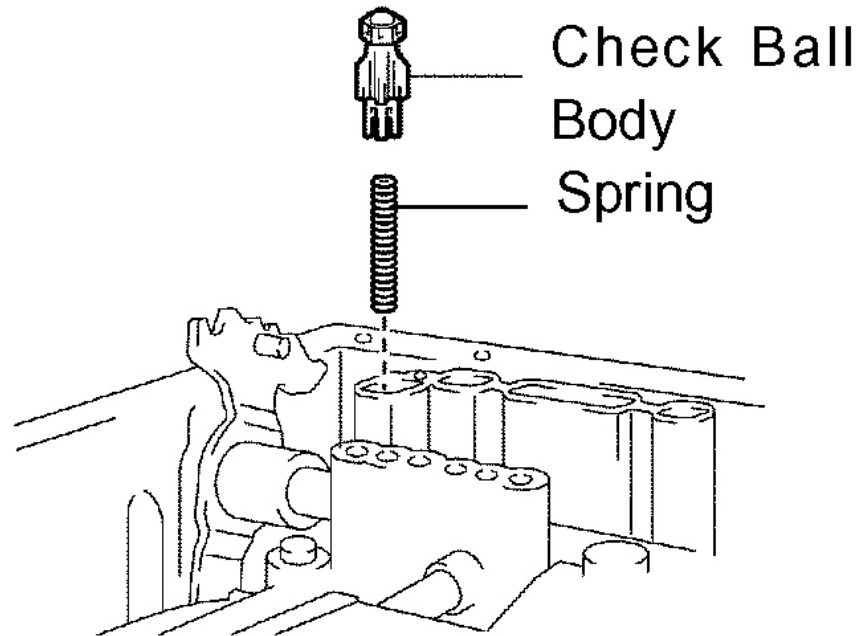
P

G02997419

Fig. 82: Installing Automatic Transmission 3-Way Solenoid (S3) With Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

g. Install the check ball body and spring.

NOTE: Do not drop the check ball body and spring.



P

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Fig. 83: Installing Check Ball Body And Spring
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

h. Align the groove of the manual valve with the pin of the lever.

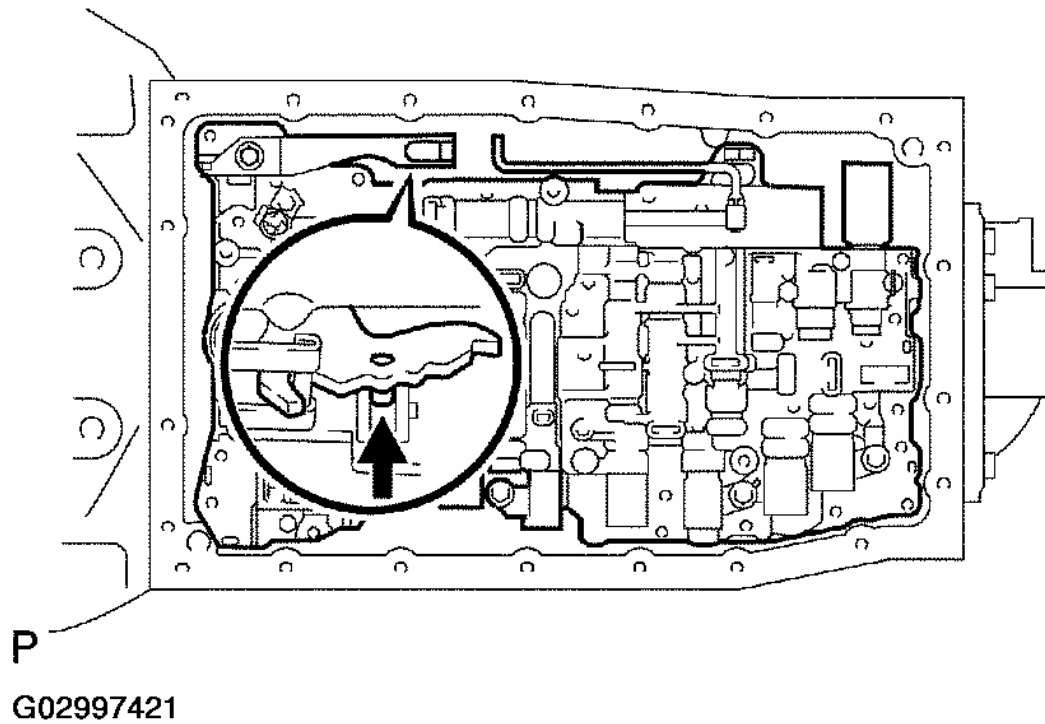


Fig. 84: Aligning Groove Of Manual Valve With Pin Of Lever
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- i. Install the 20 bolts.

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

Bolt length:

Bolt A: 36 mm (1.42 in.)

Bolt B: 25 mm (0.98 in.)

Bolt C: 45 mm (1.77 in.)

Bolt D: 50 mm (1.97 in.)

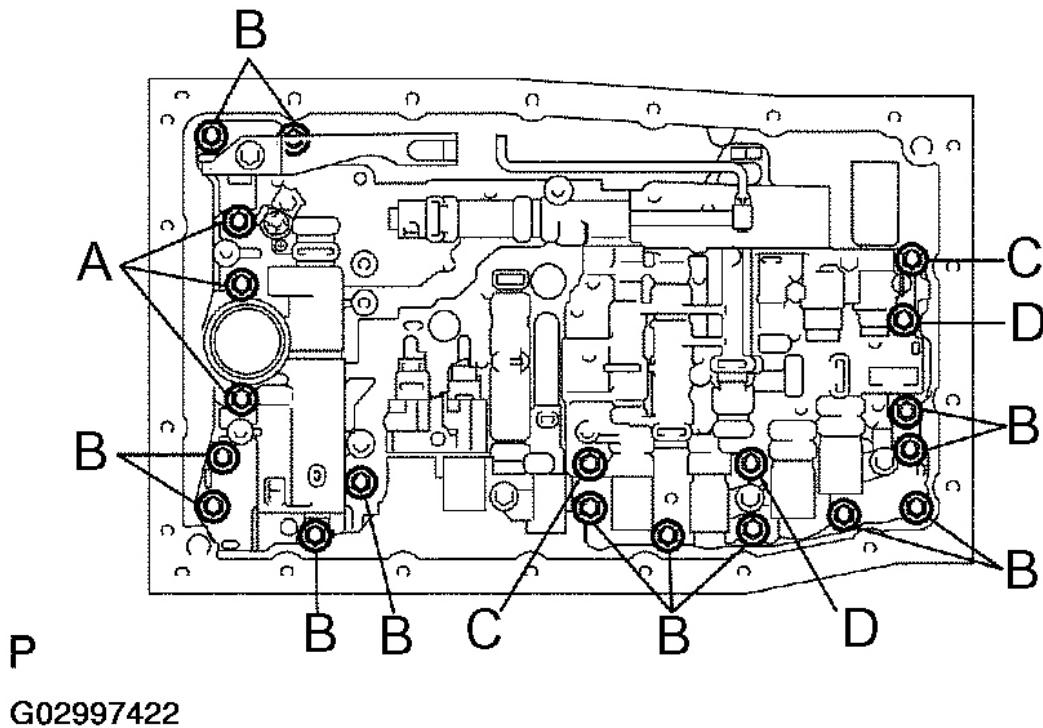


Fig. 85: Installing 20 Bolts
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

8. INSTALL TRANSMISSION WIRE

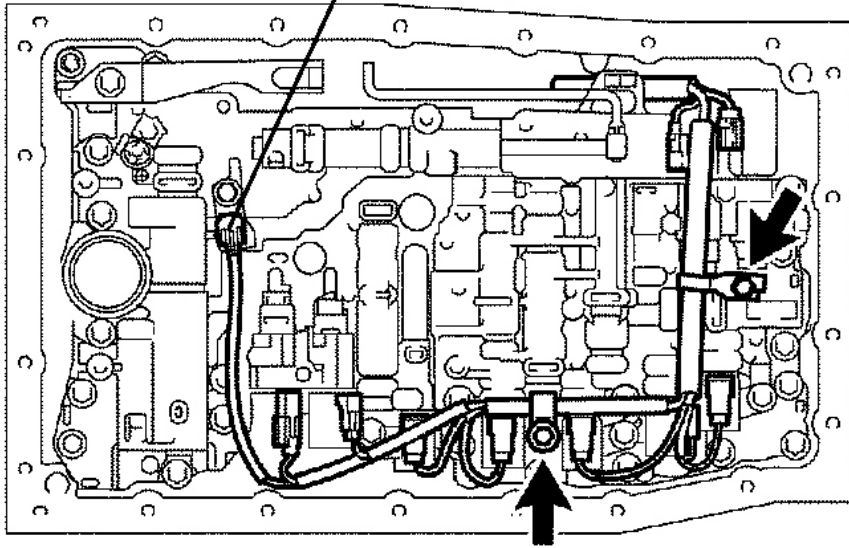
- a. Coat a new O-ring of the ATF temperature sensor with ATF.
- b. Connect the 9 connectors to the solenoid valves.
- c. Install the 2 clamps with the 2 bolts.

Torque: 10 N.m (100 kgf.cm, 7 ft.lbf)

- d. Install the ATF temperature sensor and lock plate with the bolt.

Torque: 10 N.m (100 kgf.cm, 7 ft.lbf)

ATF Temperature Sensor

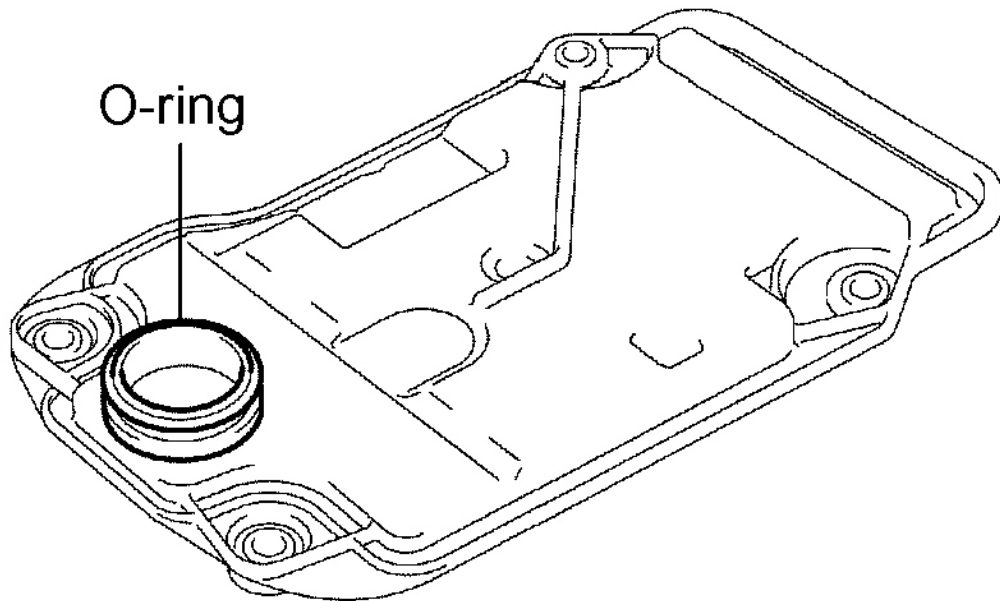


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G02997423

Fig. 86: Installing ATF Temperature Sensor And Lock Plate With Bolt
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

9. **INSTALL VALVE BODY OIL STRAINER ASSY**
 - a. Coat a new O-ring with ATF.
 - b. Install the O-ring.



P

G02997424

Fig. 87: Installing O-ring

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

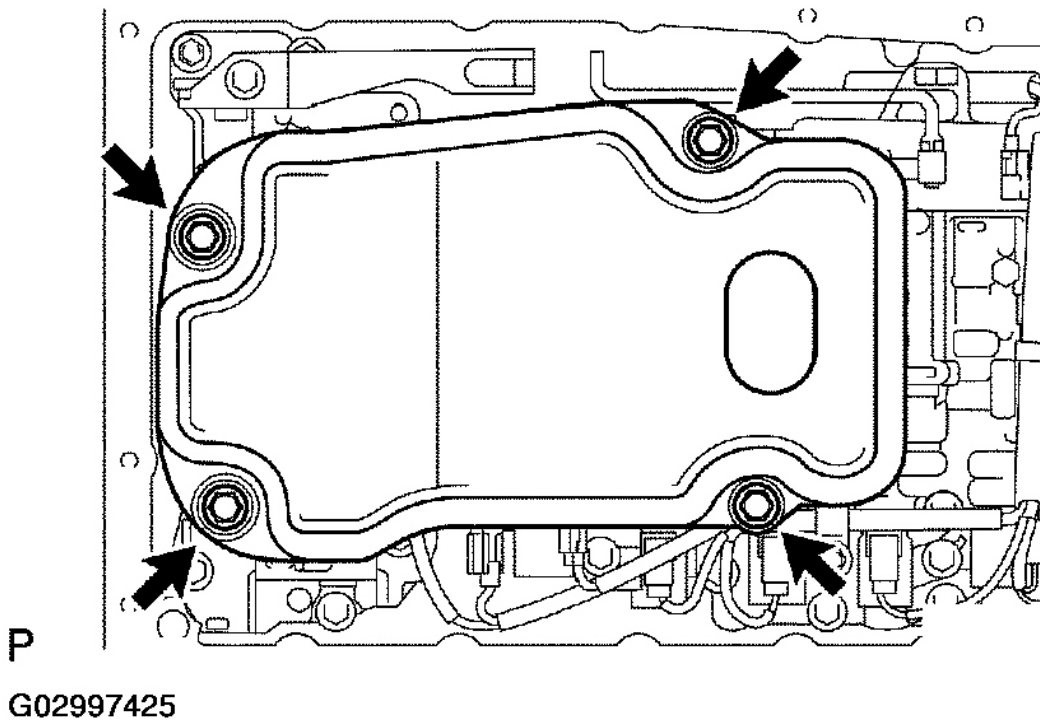
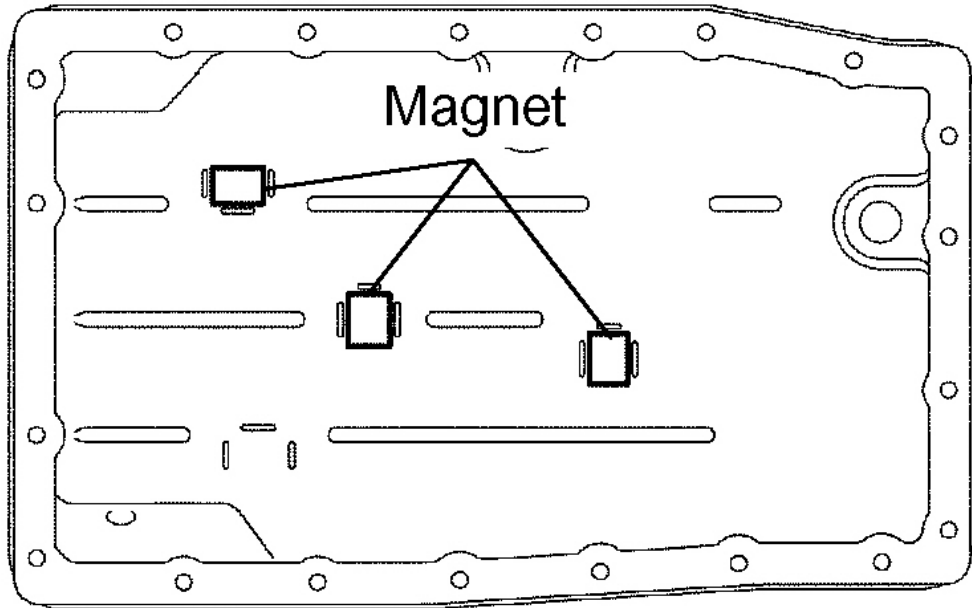


Fig. 88: Installing Oil Strainer With 4 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

10. **INSTALL AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY**
 - a. Install the 3 magnets in the oil pan.



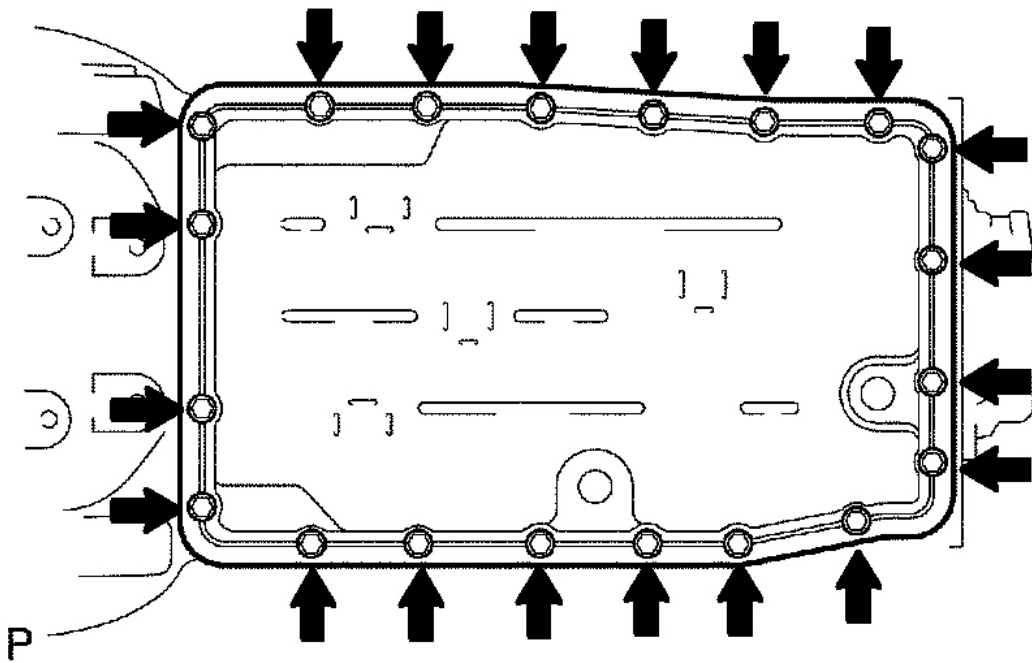
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G02997426

Fig. 89: Installing 3 Magnets In Oil Pan

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Using a new gasket, install the oil pan with the 20 bolts to the transmission case.
Torque: 4.4 N.m (44 kgf.cm, 39 in..lbf)



G02997427

Fig. 90: Installing Oil Pan With 20 Bolts To Transmission Case
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

11. **CONNECT BATTERY NEGATIVE TERMINAL**
12. **ADD AUTOMATIC TRANSMISSION FLUID (SEE ADJUSTMENT)**
 Fluid type: ATF WS
 Capacity: 4.3 liters (4.5 US qts, 3.8 Imp.qts)
13. **RESET MEMORY (SEE INITIALIZATION)**
14. **PERFORM INITIALIZATION (SEE INITIALIZATION)**

AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL

REPLACEMENT

1. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.2 (SEE REPLACEMENT)**
2. **REMOVE INSTRUMENT PANEL GARNISH SUB-ASSY LH (SEE REPLACEMENT)**
3. **REMOVE INSTRUMENT PANEL FINISH PANEL (SEE REPLACEMENT)**
4. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (SEE REPLACEMENT)**
5. **REMOVE SWITCH BRACE HOLE COVER (SEE REPLACEMENT)**

6. **REMOVE INSTRUMENT PANEL SAFETY PAD SUB-ASSY NO.1 (SEE REPLACEMENT)**
7. **REMOVE INSTRUMENT PANEL CUP HOLDER ASSY (SEE REPLACEMENT)**
8. **REMOVE CONSOLE UPPER REAR PANEL SUB-ASSY (SEE REPLACEMENT)**
9. **REMOVE CONSOLE BOX CARPET (SEE REPLACEMENT)**
10. **REMOVE REAR CONSOLE ARMREST ASSY (SEE REPLACEMENT)**
11. **REMOVE INSTRUMENT PANEL FINISH PANEL LOWER CENTER (SEE REPLACEMENT)**
12. **REMOVE INSTRUMENT CLUSTER FINISH PANEL SUB-ASSY CENTER (SEE REPLACEMENT)**
13. **REMOVE CONSOLE PANEL SUB-ASSY UPPER (SEE REPLACEMENT)**
14. **REMOVE CONSOLE BOX (SEE REPLACEMENT)**
15. **SEPARATE OXYGEN SENSOR (SEE REPLACEMENT)**
16. **REMOVE EXHAUST PIPE ASSY (SEE REPLACEMENT)**
17. **REMOVE PROPELLER W/CENTER BEARING SHAFT ASSY (SEE OVERHAUL)**
18. **DRAIN AUTOMATIC TRANSMISSION FLUID**
 - a. Remove the drain plug, gasket and drain the ATF.
 - b. Install a new gasket and the drain plug.
Torque: 20 N.m (205 kgf.cm, 15 ft.lbf)
19. **REMOVE AUTOMATIC TRANSMISSION FLANGE YOKE ASSY**
 - a. Using SST and a hammer, loosen the staked part of the nut.
SST 09930-00010

HINT:

Move the shift lever to the P position.

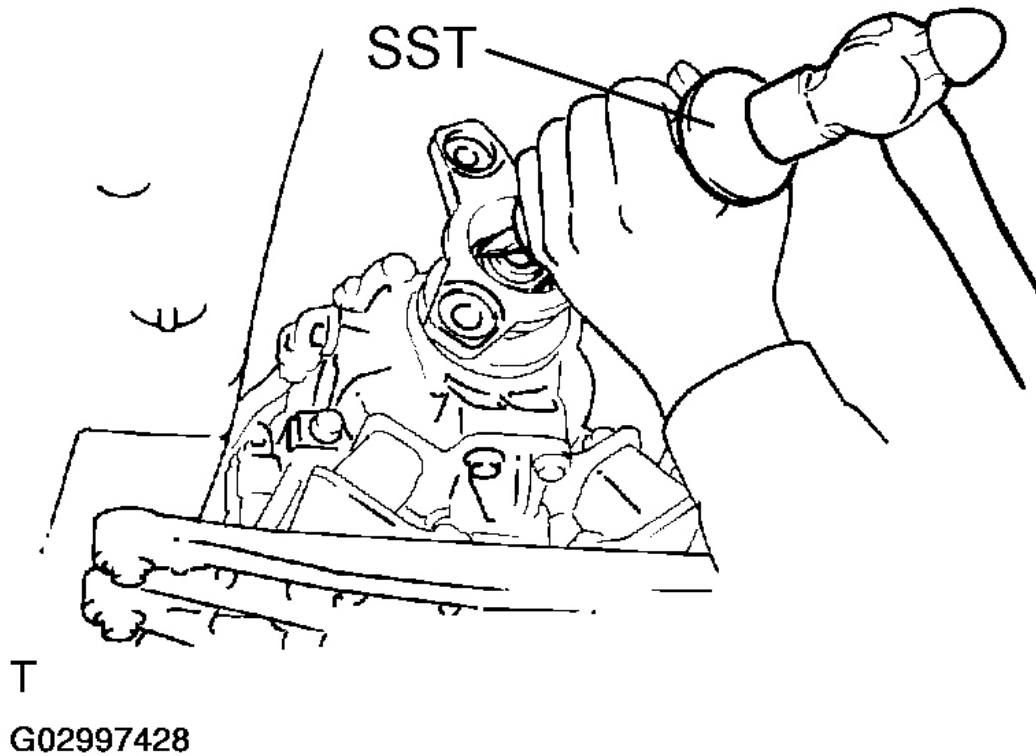
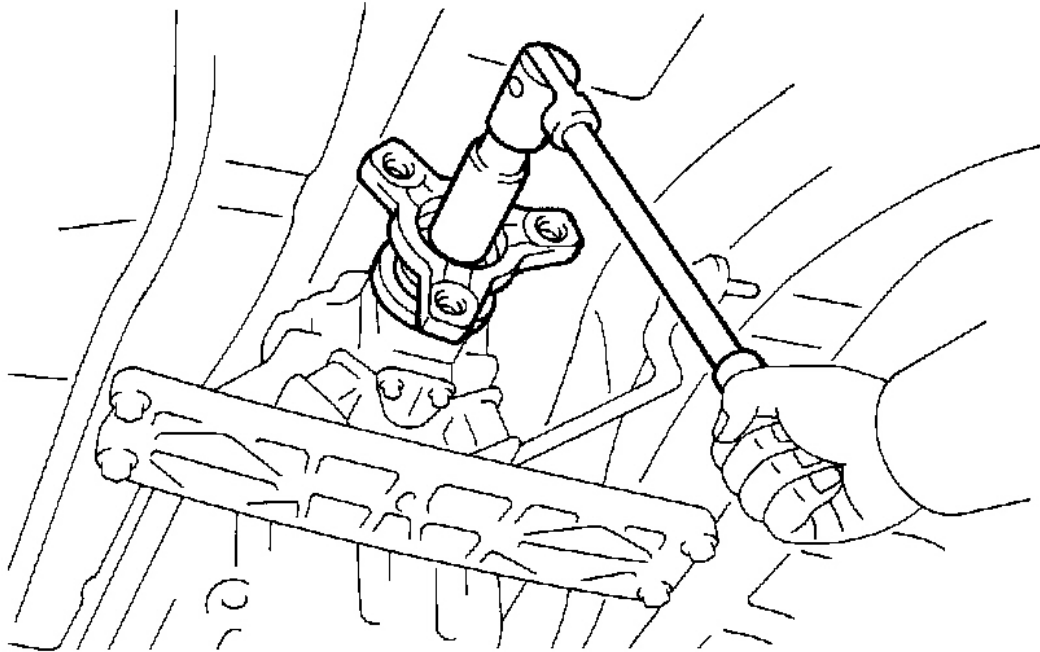


Fig. 91: Loosening Staked Part Of Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

HINT:

Move the shift lever to the P position.

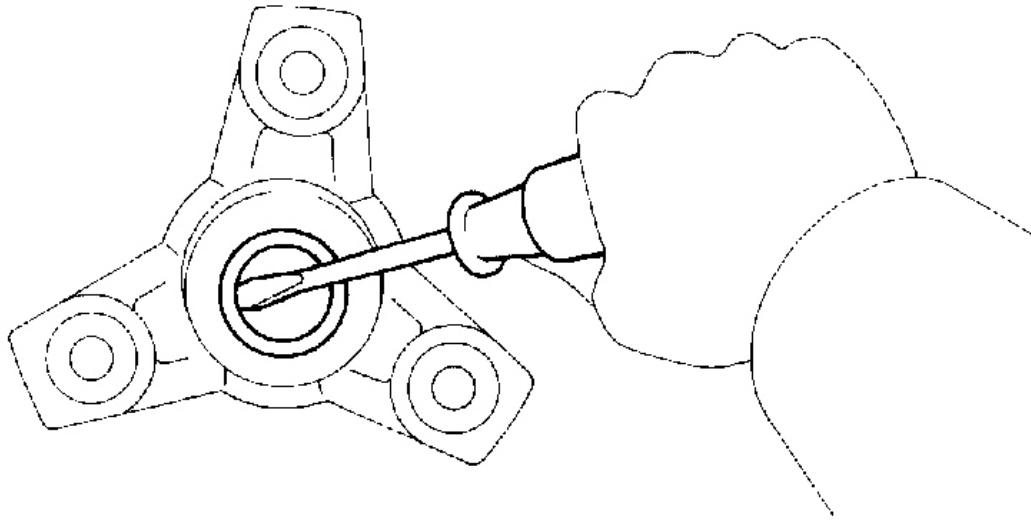


G02997429

Fig. 92: Removing Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

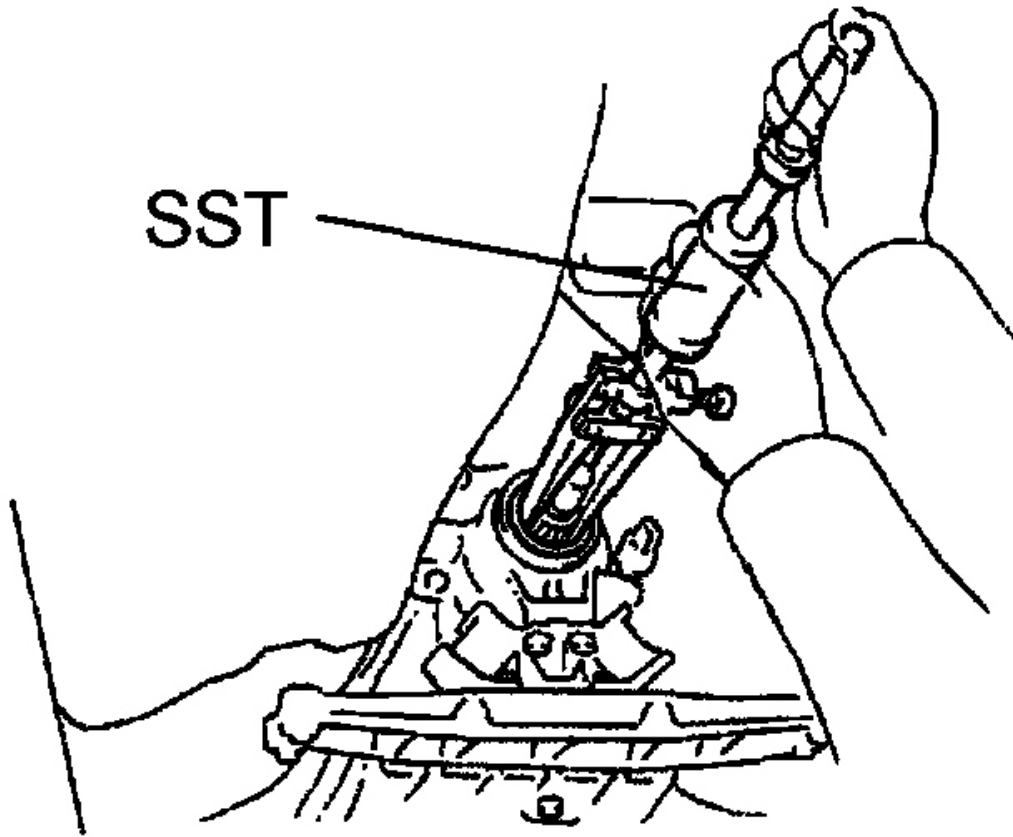
- d. Using a screwdriver, remove the oil seal from the output flange.



G02997430

Fig. 93: Removing Oil Seal From Output Flange
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- 20. REMOVE AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL**
 - a. Using SST, remove the oil seal.
SST 09308-00010
- 21. INSTALL AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL**
 - a. Coat the lip of a new oil seal with MP grease.



G02997431

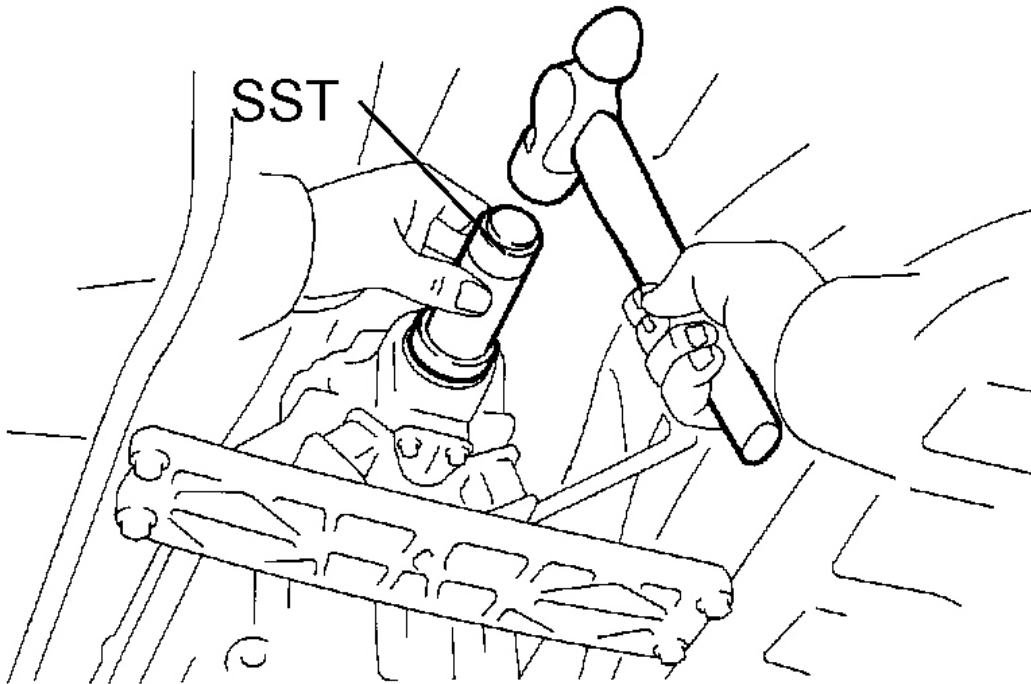
Fig. 94: Removing Oil Seal

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Using SST and a hammer, drive in the oil seal with the lip facing downward.

SST 09309-37010

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



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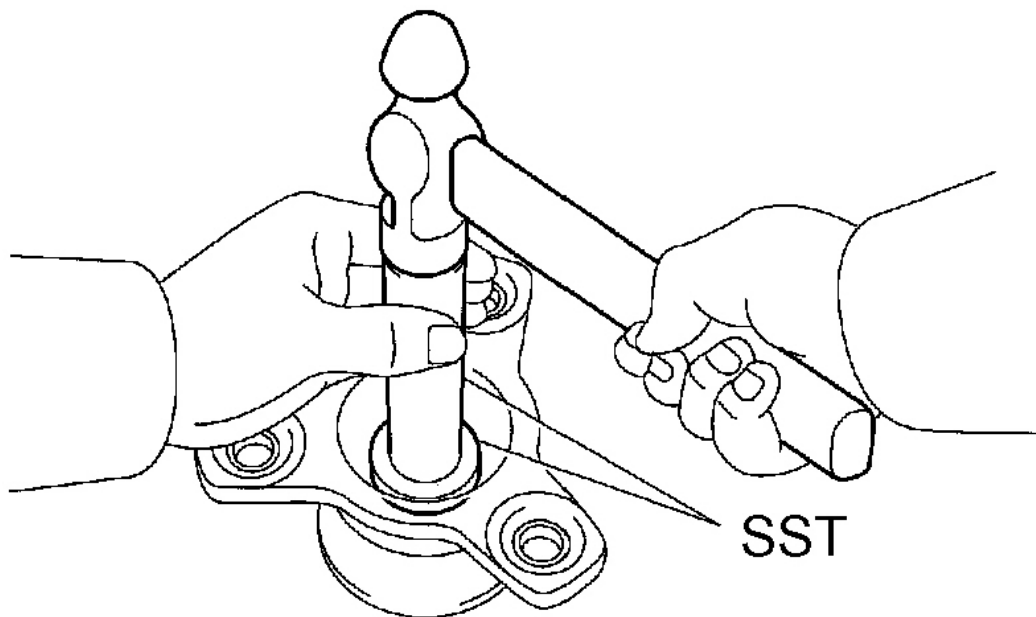
Fig. 95: Installing Oil Seal

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

22. INSTALL AUTOMATIC TRANSMISSION FLANGE YOKE ASSY

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

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



G02997433

Fig. 96: Installing New Oil Seal

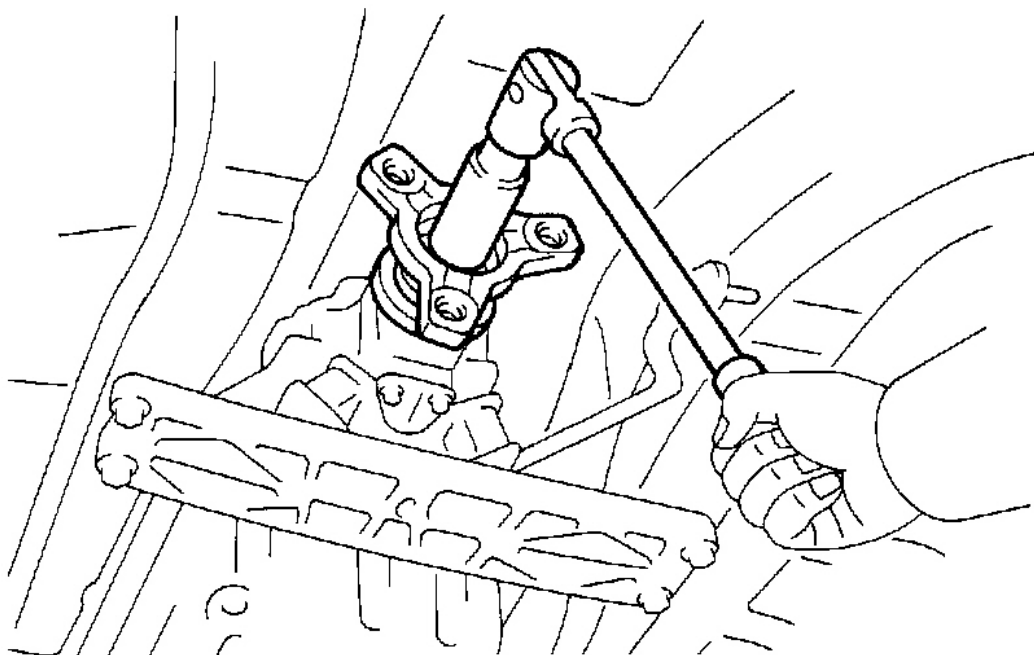
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install the output flange.
- c. Using a 30 mm deep socket wrench, install and torque a new nut.

Torque: 126 N.m (1,280 kgf.cm, 92 ft.lbf)

HINT:

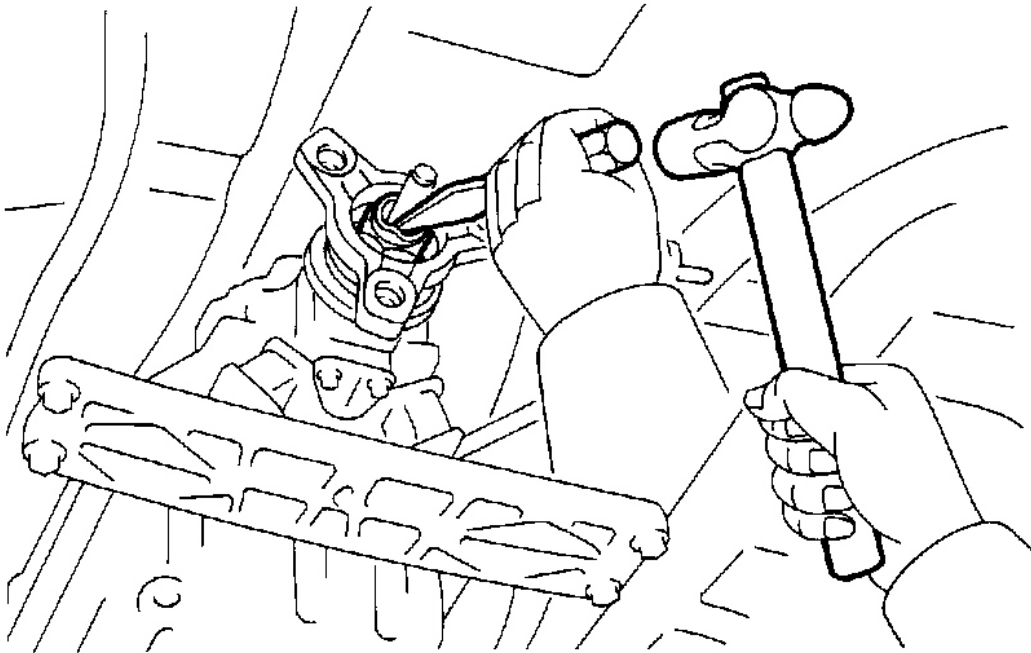
Move the shift lever to P position.



G02997434

Fig. 97: Installing Torque Arm New Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

23. Using a chisel and hammer, securely stake the nut.



G02997435

Fig. 98: Staking Nut

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

24. **INSTALL PROPELLER W/CENTER BEARING SHAFT ASSY (SEE OVERHAUL)**
25. **FULLY TIGHTEN CENTER SUPPORT BEARING ASSY NO.1 (SEE OVERHAUL)**
26. **INSTALL EXHAUST PIPE ASSY (SEE REPLACEMENT)**
27. **ADD AUTOMATIC TRANSMISSION FLUID (SEE ADJUSTMENT)**

Fluid type: ATF WS

Capacity: 1.7 liters (1.8 US qts, 1.5 Imp.qts)

SHIFT LOCK SYSTEM (ATM)

ON-VEHICLE INSPECTION

1. CHECK SHIFT LOCK OPERATION

- a. Move the shift lever to the P position.
- b. Turn the ignition switch to the LOCK position.
- c. Check that the shift lever cannot be moved to any position other than P.
- d. Turn the ignition switch to the ON position, depress the brake pedal and check that the shift lever can be moved to another position.

If the operation cannot be done as specified, inspect the shift lock control unit.

2. **CHECK SHIFT LOCK RELEASE BUTTON OPERATION**

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

If the operation cannot be done as specified, check the shift lever assy installation condition.

3. **CHECK KEY INTERLOCK OPERATION**

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

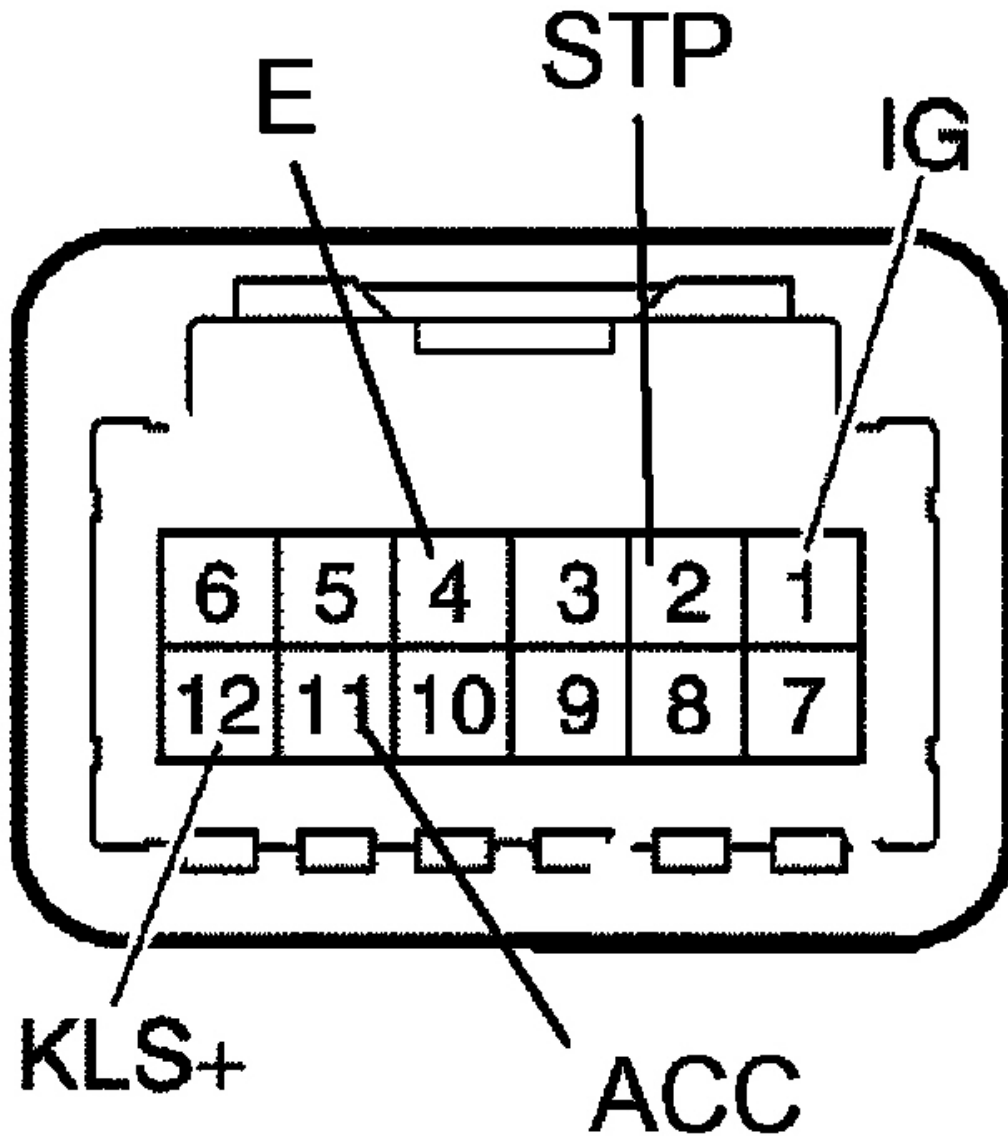
If the operation cannot be done as specified, inspect the shift lock control unit.

4. **INSPECT SHIFT LOCK CONTROL UNIT ASSEMBLY**

- a. Measure the voltage according to the value(s) in the table below.

HINT:

Do not disconnect the shift lock control unit assembly connector.



G02997436

Fig. 99: Identifying Shift Lock Control Unit Assembly Connector Terminals
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal	Measuring Condition	Voltage (V)
11 (ACC) - 4 (E)	Ignition switch ACC	10 to 14
11 (ACC) - 4 (E)	Ignition switch OFF	Below 1
2 (STP) - 4 (E)	Depress brake pedal	10 to 14
2 (STP) - 4 (E)	Release brake pedal	Below 1
12 (KLS+) - 4 (E)	6. Ignition switch ACC and shift lever P position	Below 1
	7. Ignition switch ACC and shift lever not in P position	7.5 to 11
	8. Ignition switch ACC and shift lever not in P position (After approx. 1 second)	6 to 9
1 (IG) - 4 (E)	Ignition switch ON	10 to 14
1 (IG) - 4 (E)	Ignition switch OFF	Below 1

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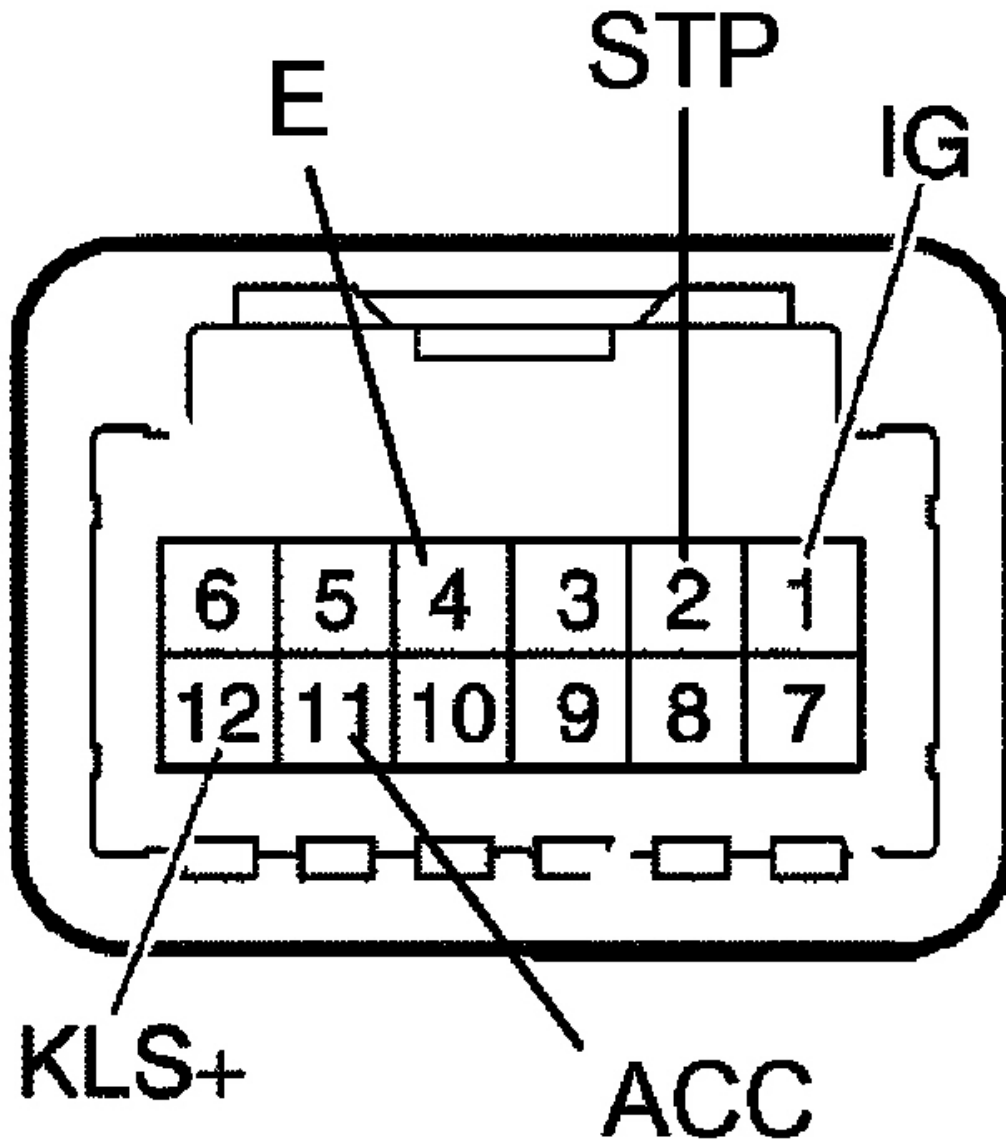
Fig. 100: Shift Lock Control Unit Assembly Connector Terminals Reference Chart
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

b. Measure the resistance according to the value in the table below.

HINT:

Do not disconnect the shift lock control unit assembly connector.

If the operation cannot be done as specified, replace the shift lever assy.



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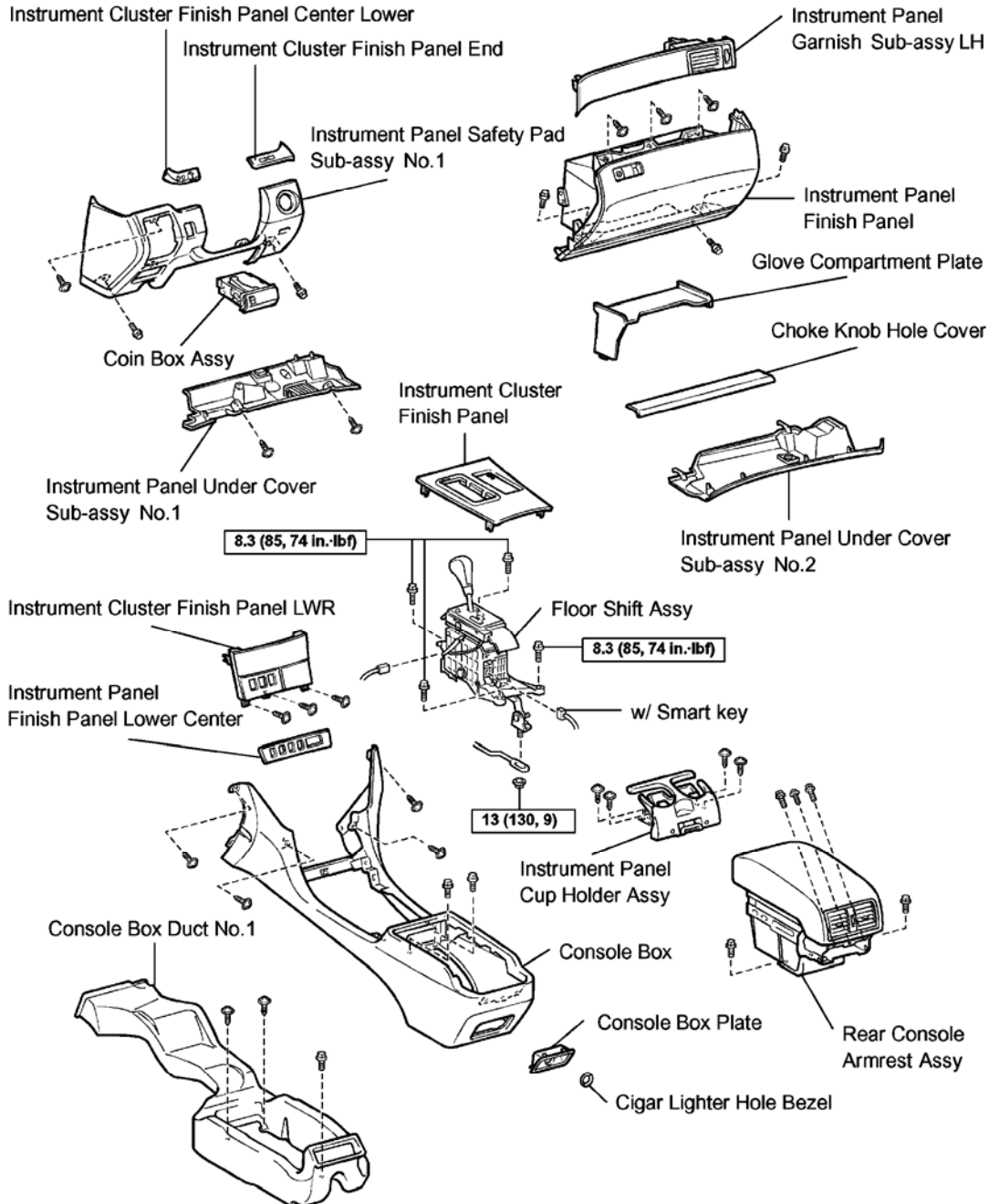
Fig. 101: Identifying Shift Lock Control Unit Assembly Connector Terminals
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TERMINAL AND SPECIFIED VALUE<

Terminal	Measuring Condition	Specified Value
4 (E) - Body ground	Constant	Below 1 ohms

FLOOR SHIFT ASSY

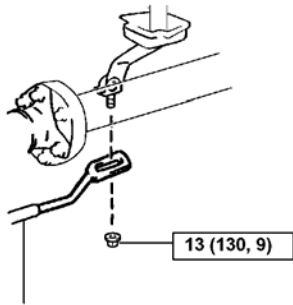
COMPONENTS



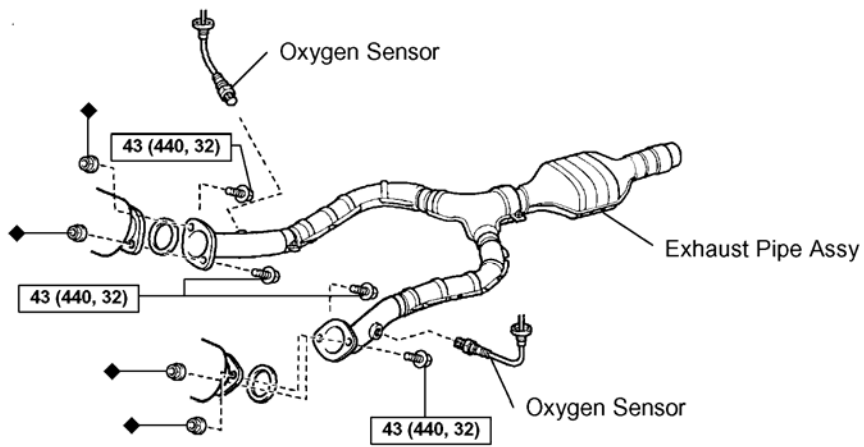
T N·m (kgf·cm, ft·lbf) : Specified torque

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Fig. 102: Identifying Floor Shift Assy Components (1 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Floor Shift Gear Shifting Rod Sub-assy

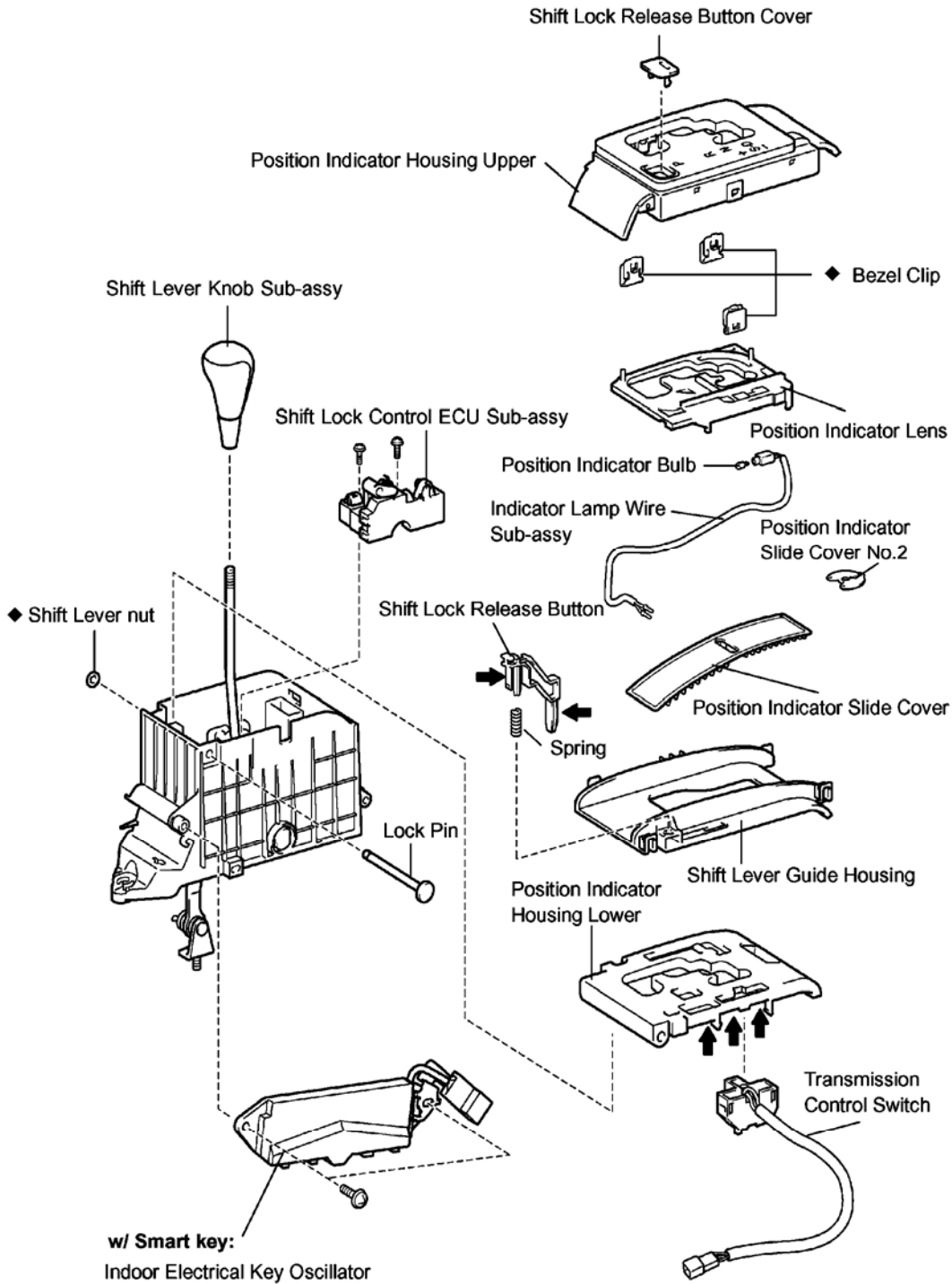


N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

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Fig. 103: Identifying Floor Shift Assy Components (2 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



◆ Non-reusable part

← MP grease

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Fig. 104: Identifying Floor Shift Assy Components (3 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

OVERHAUL

1. **DISCONNECT BATTERY NEGATIVE TERMINAL**
2. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.2 (SEE REPLACEMENT)**
3. **REMOVE CHOKE KNOB HOLE COVER (SEE REPLACEMENT)**
4. **REMOVE GLOVE COMPARTMENT PLATE (SEE REPLACEMENT)**
5. **REMOVE INSTRUMENT PANEL GARNISH SUB-ASSY LH (SEE REPLACEMENT)**
6. **REMOVE INSTRUMENT PANEL FINISH PANEL (SEE REPLACEMENT)**
7. **REMOVE INSTRUMENT CLUSTER FINISH PANEL (SEE REPLACEMENT)**
8. **REMOVE INSTRUMENT PANEL FINISH PANEL LOWER CENTER (SEE REPLACEMENT)**
9. **REMOVE PANEL INSTRUMENT CLUSTER FINISH LOWER (SEE REPLACEMENT)**
10. **REMOVE INSTRUMENT PANEL UNDER COVER SUB-ASSY NO.1 (SEE REPLACEMENT)**
11. **REMOVE COIN BOX ASSY (SEE REPLACEMENT)**
12. **REMOVE INSTRUMENT CLUSTER FINISH PANEL CENTER LOWER (SEE REPLACEMENT)**
13. **REMOVE CIGAR LIGHTER HOLE BEZEL (SEE REPLACEMENT)**
14. **REMOVE INSTRUMENTAL CLUSTER FINISH PANEL END (SEE REPLACEMENT)**
15. **REMOVE INSTRUMENT PANEL SAFETY PAD SUB-ASSY NO.1 (SEE REPLACEMENT)**
16. **REMOVE REAR CONSOLE ARMREST ASSY (SEE REPLACEMENT)**
17. **REMOVE CONSOLE BOX PLATE (SEE REPLACEMENT)**
18. **REMOVE INSTRUMENT PANEL CUP HOLDER ASSY (SEE REPLACEMENT)**
19. **REMOVE CONSOLE BOX (SEE REPLACEMENT)**
20. **REMOVE CONSOLE BOX DUCT NO.1 (SEE REPLACEMENT)**
21. **SEPARATE FLOOR SHIFT GEAR SHIFTING ROD SUB-ASSY**
 - a. Remove the nut and separate the floor shift gear shifting rod sub-assy.
22. **REMOVE FLOOR SHIFT ASSY**
 - a. Disconnect the connector.
 - b. Disconnect the indoor electrical key oscillator connector. (w/smart key)

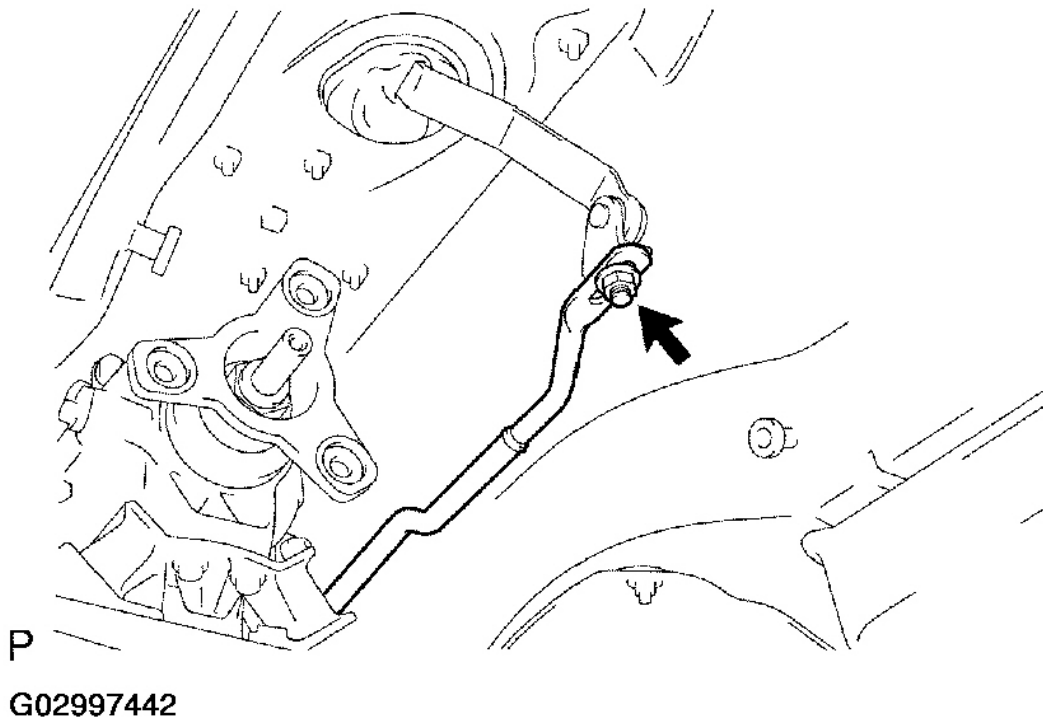
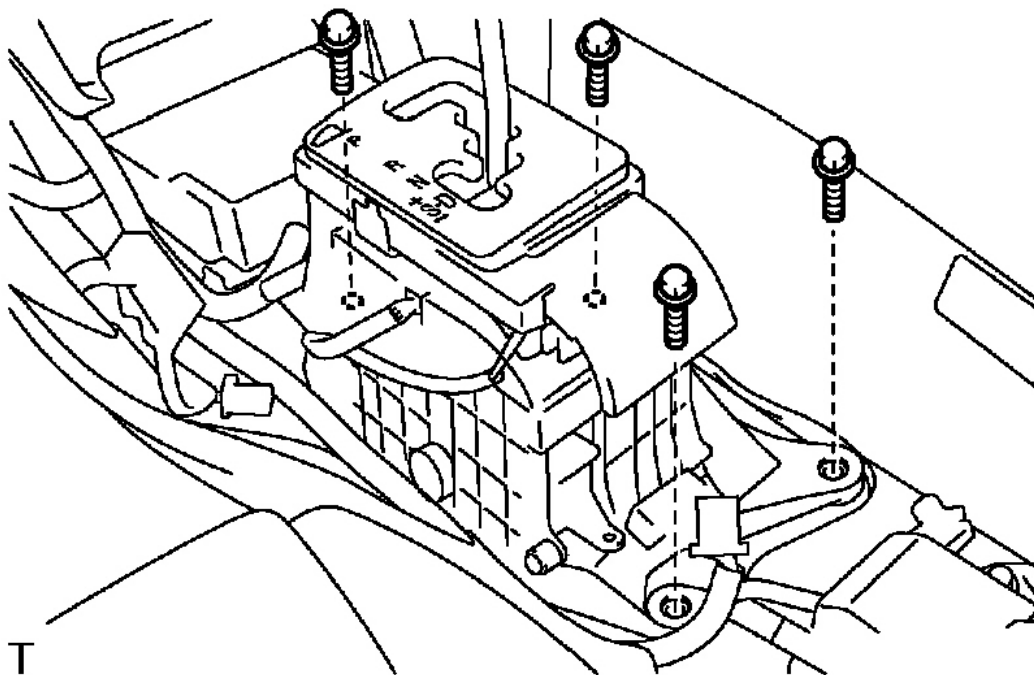


Fig. 105: Removing Nut And Separating Floor Shift Gear Shifting Rod Sub-Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Remove the 4 bolts.
- d. Remove the floor shift assy.

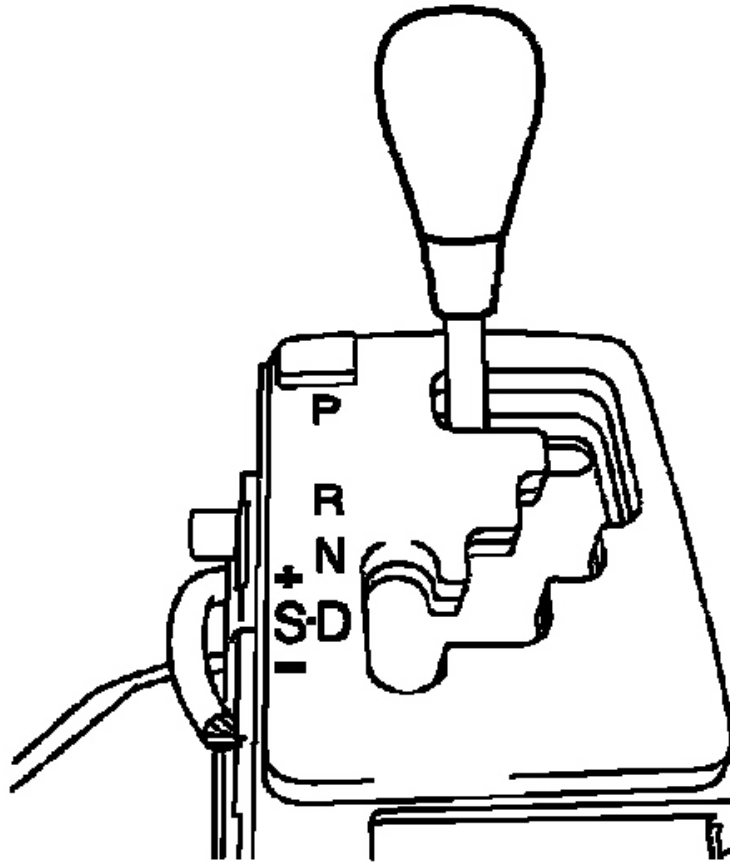


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Fig. 106: Removing 4 Bolts

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

23. **REMOVE INDOOR ELECTRICALLY KEY OSCILLATOR (W/SMART KEY)**
 - a. Remove the 2 screws, and then remove the indoor electrical key oscillator from the shift lever plate.
24. **REMOVE SHIFT LOCK RELEASE BUTTON COVER**
 - a. Using a small screwdriver, remove the shift lock release button cover.
25. **REMOVE SHIFT LEVER KNOB SUB-ASSY**
 - a. Remove the shift lever knob sub-assy.



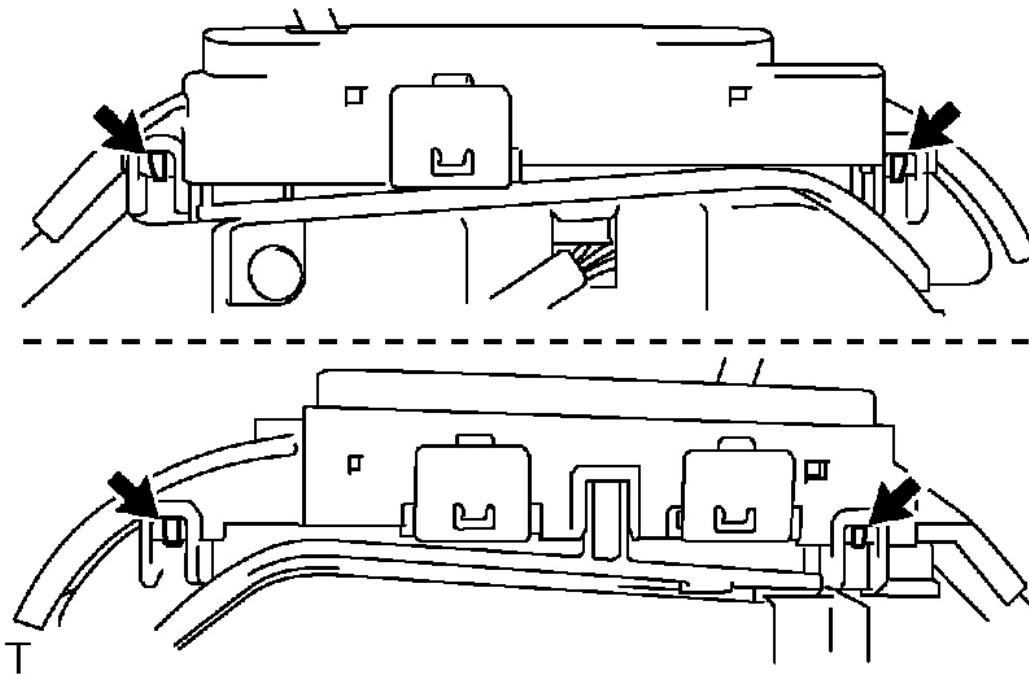
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Fig. 107: Removing Shift Lever Knob Sub-Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

26. REMOVE POSITION INDICATOR HOUSING UPPER

- a. Disconnect the indicator lamp wire sub-assy from the shift lever plate.
- b. Using a screwdriver, remove the position indicator housing upper.



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Fig. 108: Removing Position Indicator Housing Upper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

27. REMOVE POSITION INDICATOR LENS

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

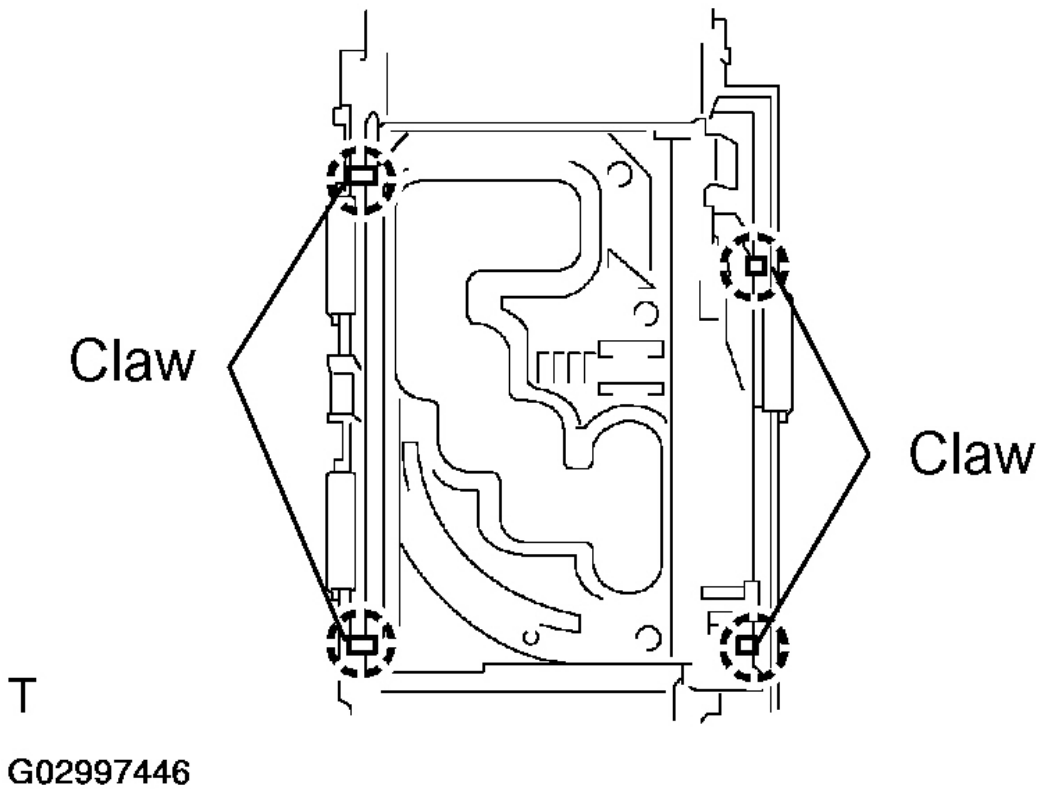
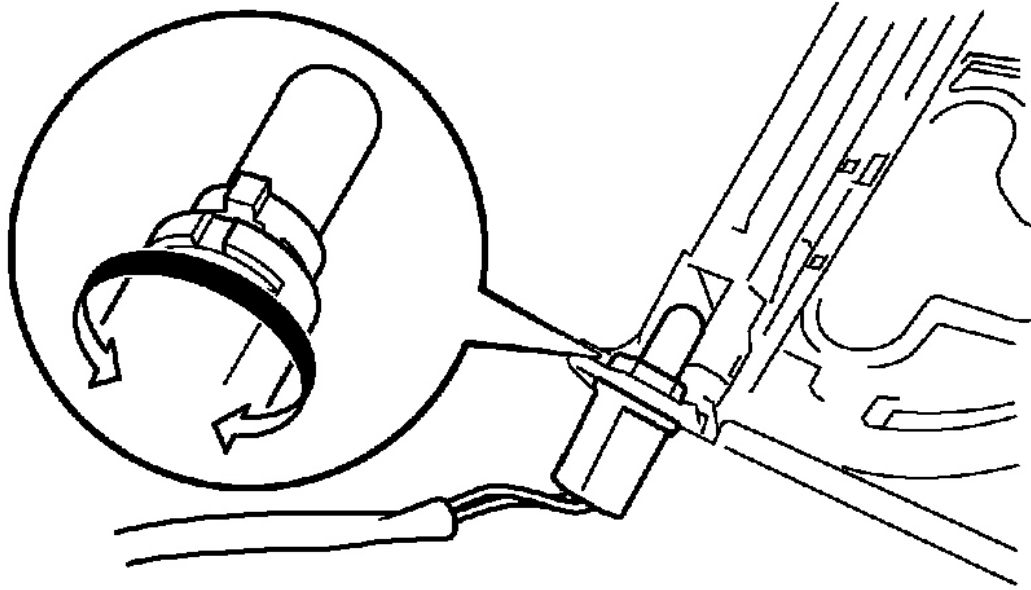


Fig. 109: Removing Position Indicator Lens From Position Indicator Housing Upper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

28. REMOVE INDICATOR LAMP WIRE SUB-ASSY

- a. Remove the indicator lamp wire sub-assy from the position indicator lens.
- b. Remove the position indicator bulb from the indicator lamp wire sub-assy.
- c. Remove the position indicator bulb cap from the position indicator bulb.

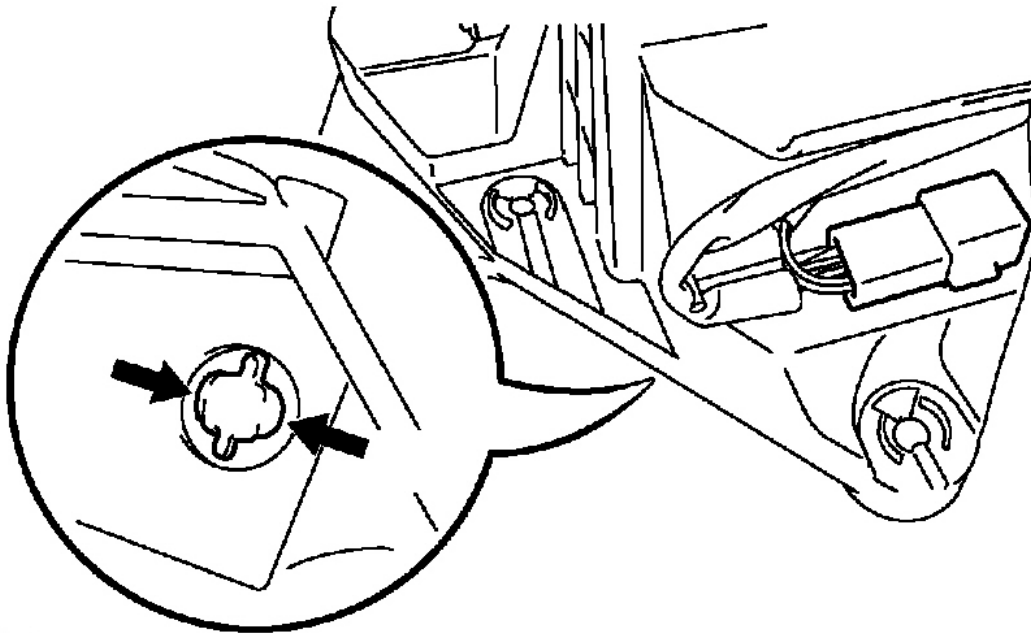


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Fig. 110: Removing Indicator Lamp Wire Sub-Assy From Position Indicator Lens
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. Remove the transmission control switch connector from the floor shift assy.

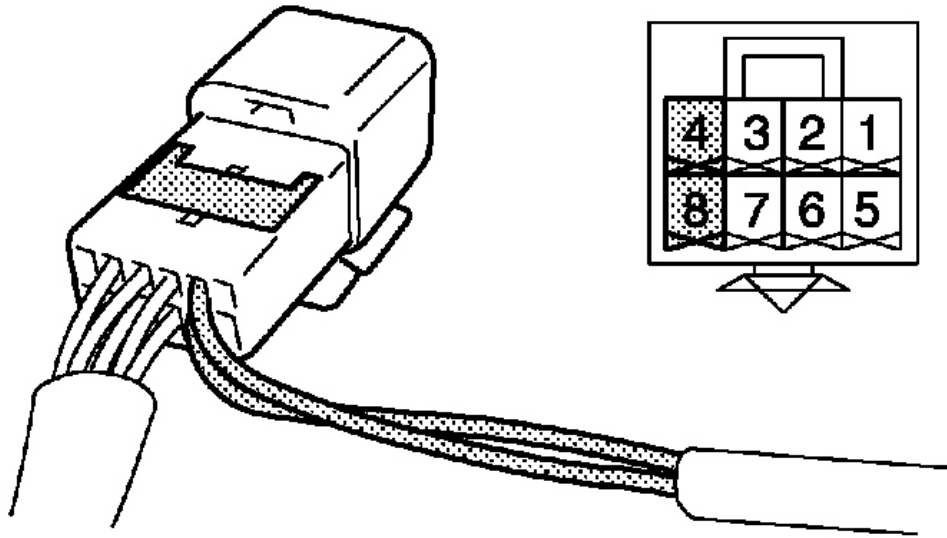


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Fig. 111: Removing Transmission Control Switch Connector From Floor Shift Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

29. Using a small screwdriver, disengage the locking lug of terminals (4) and (8), and pull the terminals out from the rear.



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Fig. 112: Disengaging Locking Lug Of Terminals (4) And (8)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

30. **REMOVE SHIFT LOCK RELEASE BUTTON**

- a. Remove the shift lock release button and spring from the floor shift assy.

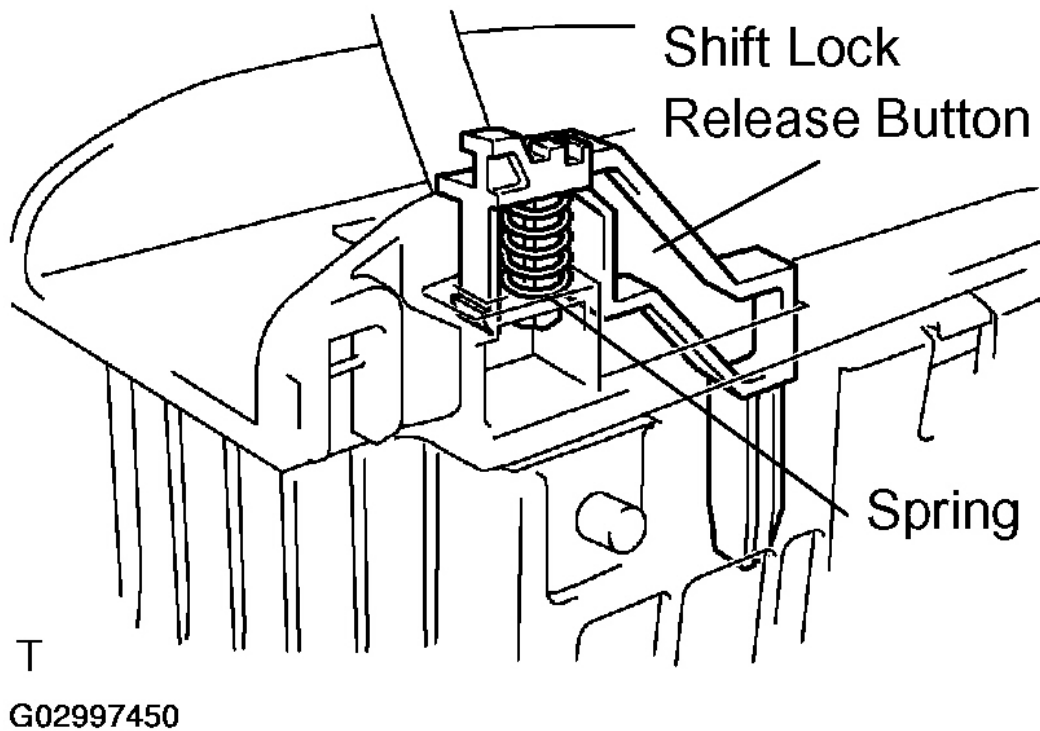
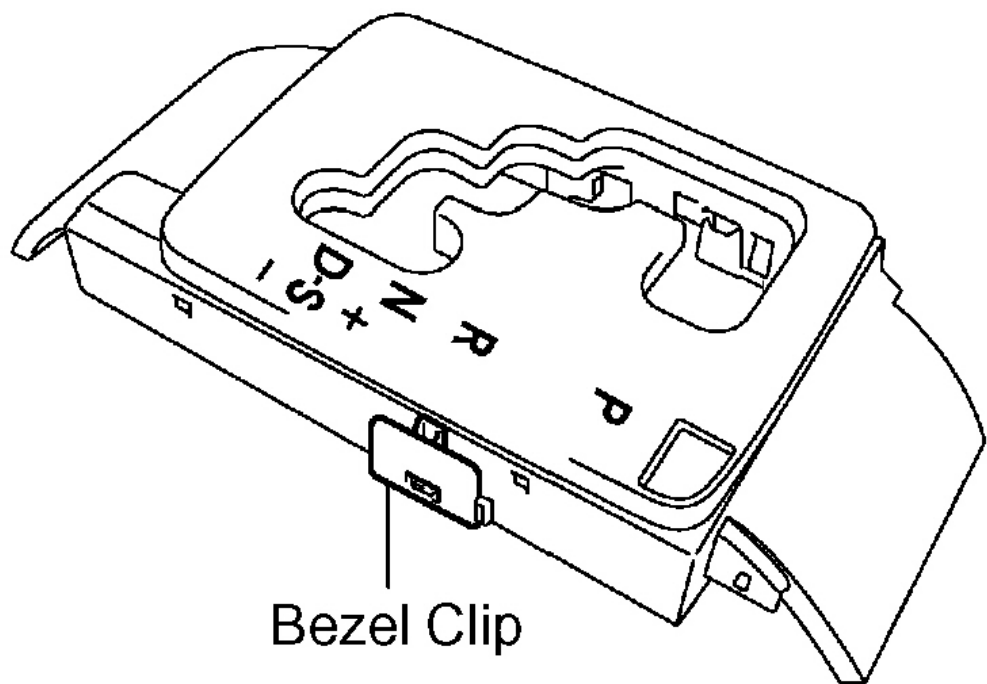


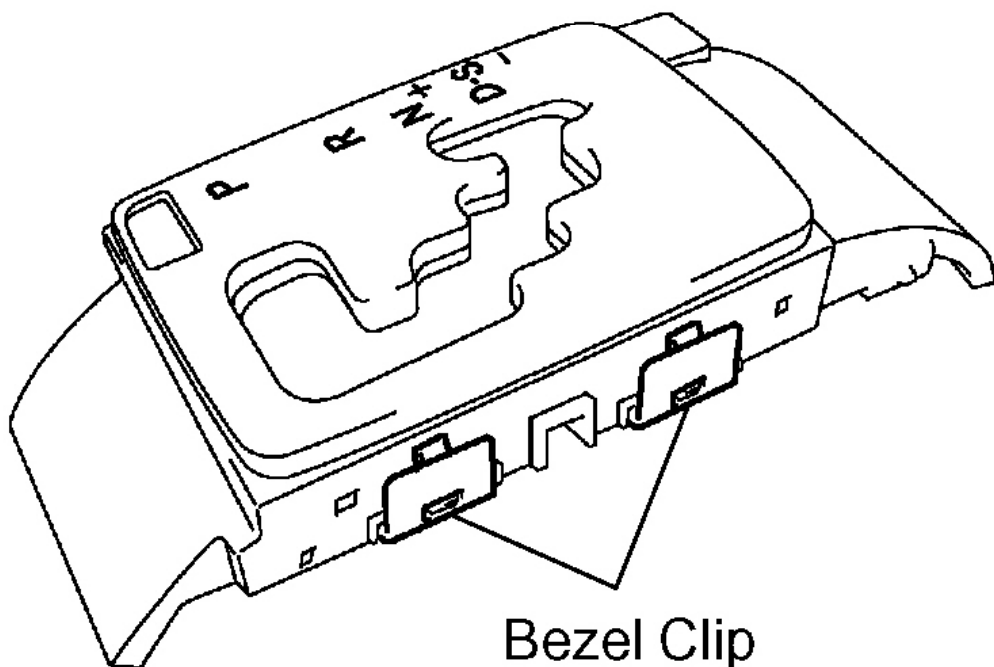
Fig. 113: Removing Shift Lock Release Button And Spring From Floor Shift Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

31. REMOVE BEZEL CLIP

- a. Remove the 3 bezel clips from the position indicator housing upper.



Bezel Clip



Bezel Clip

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Fig. 114: Removing 3 Bezel Clips From Position Indicator Housing Upper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

32. **REMOVE POSITION INDICATOR SLIDE COVER**

- a. Remove the position indicator slide cover from the shift lever guide housing.
- b. Remove the position indicator slide cover No.2 from the position indicator slide cover.

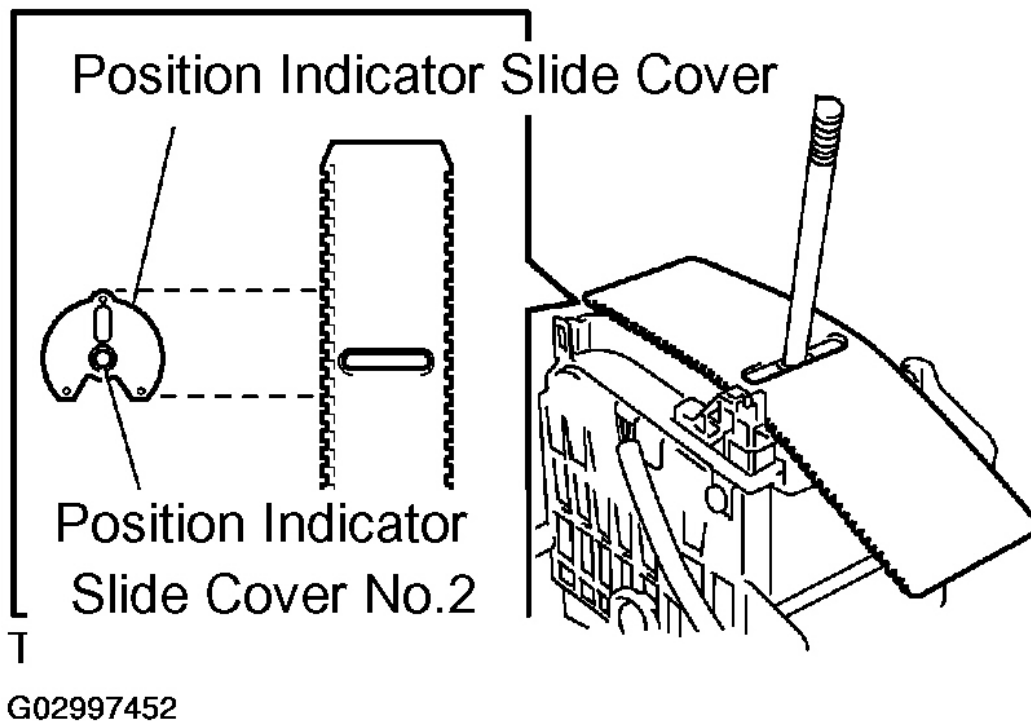


Fig. 115: Removing Position Indicator Slide Cover No.2 From Position Indicator Slide Cover
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

33. **REMOVE SHIFT LOCK CONTROL ECU SUB-ASSY**

- a. Remove the shift lever nut and lock pin from the floor shift assy.
- b. Remove the shift lever guide housing from the floor shift assy.

NOTE: First remove the shift lever nut and lock pin, then disengage the 2 claws.

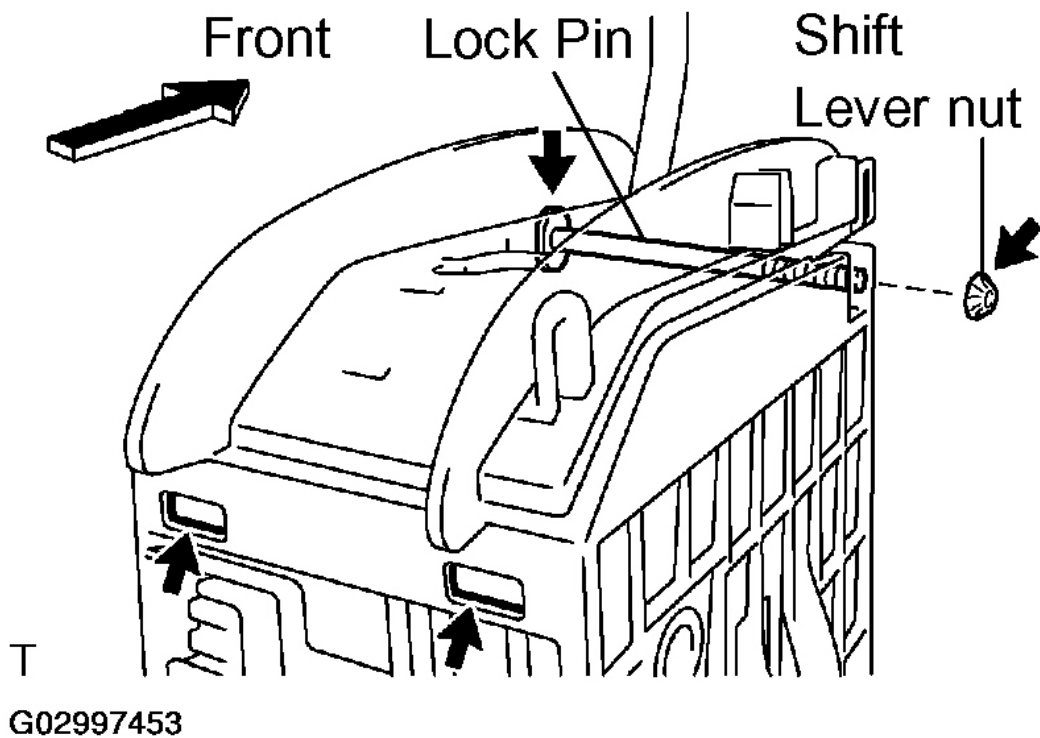
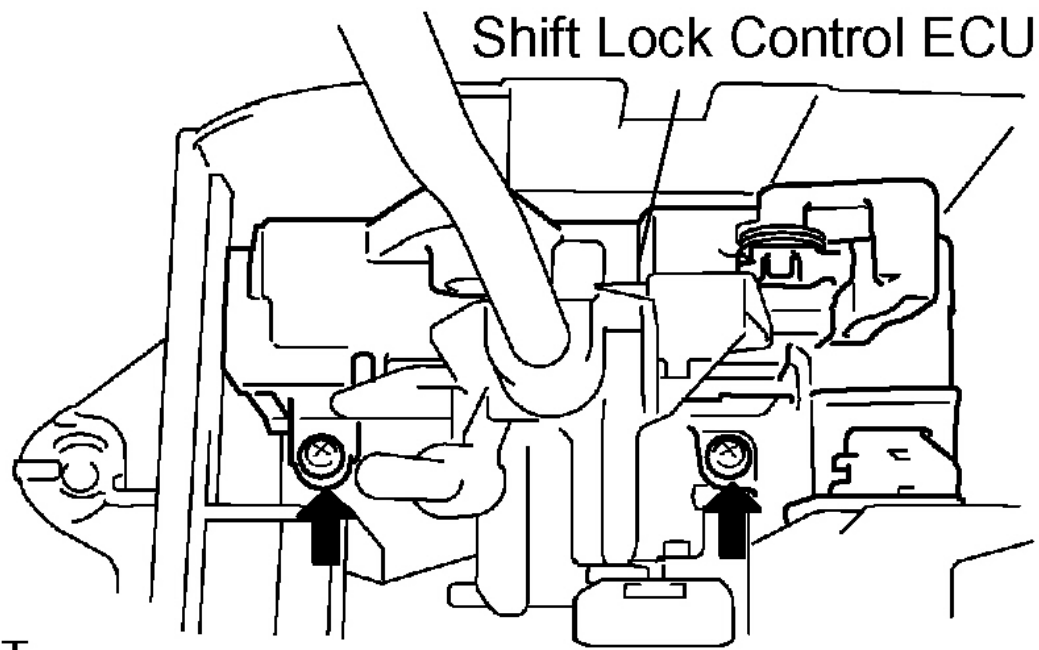


Fig. 116: Removing Shift Lever Nut And Lock Pin From Floor Shift Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Remove the 2 screws and shift lock control ECU sub-assy.



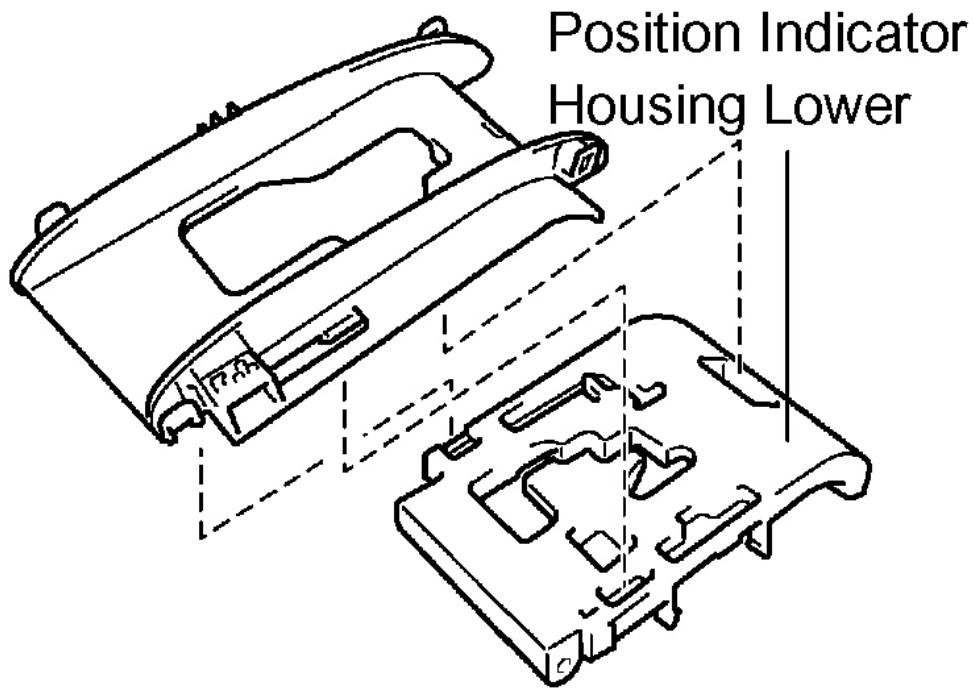
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Fig. 117: Removing 2 Screws And Shift Lock Control ECU Sub-Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

34. REMOVE POSITION INDICATOR HOUSING LOWER

- a. Remove the position indicator housing lower from the shift lever guide housing.



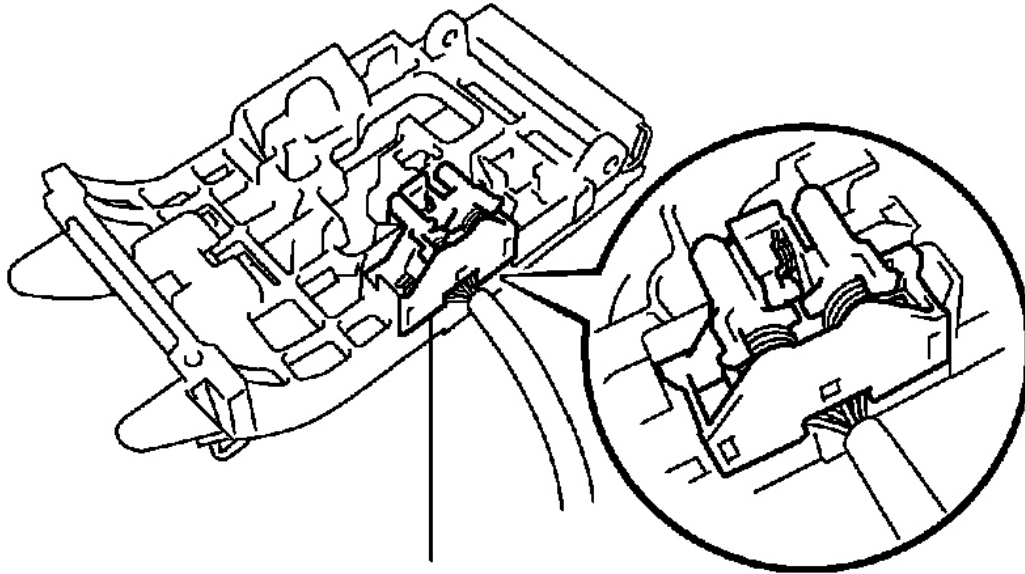
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Fig. 118: Removing Position Indicator Housing Lower
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

35. REMOVE TRANSMISSION CONTROL SWITCH

- a. Remove the transmission control switch from the shift lever guide housing.



T Transmission Control Switch

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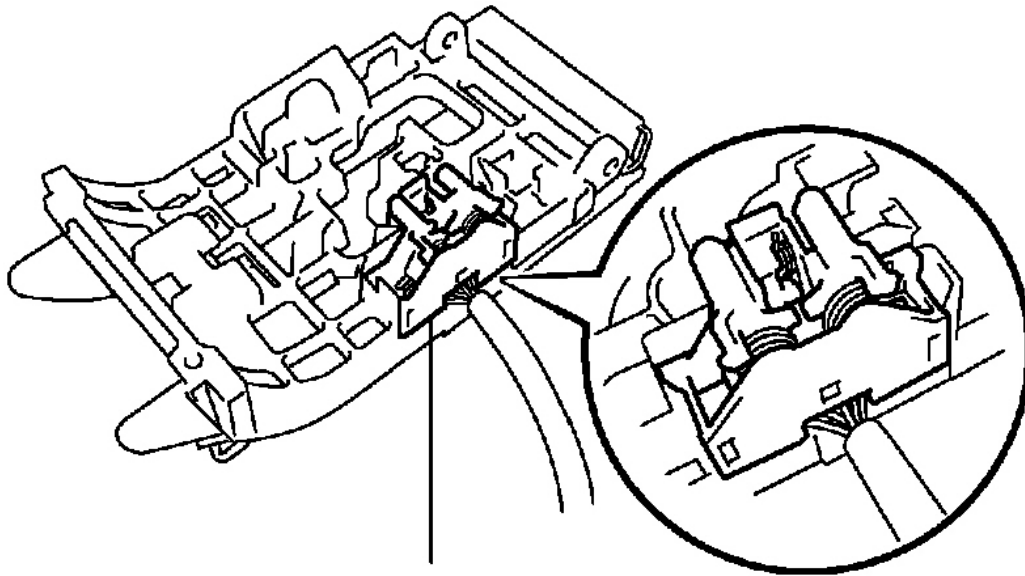
Fig. 119: Removing Transmission Control Switch From Shift Lever Guide Housing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

36. INSTALL TRANSMISSION CONTROL SWITCH

- a. Install the transmission control switch to the shift lever guide housing.

HINT:

Securely engage the claws.



T Transmission Control Switch

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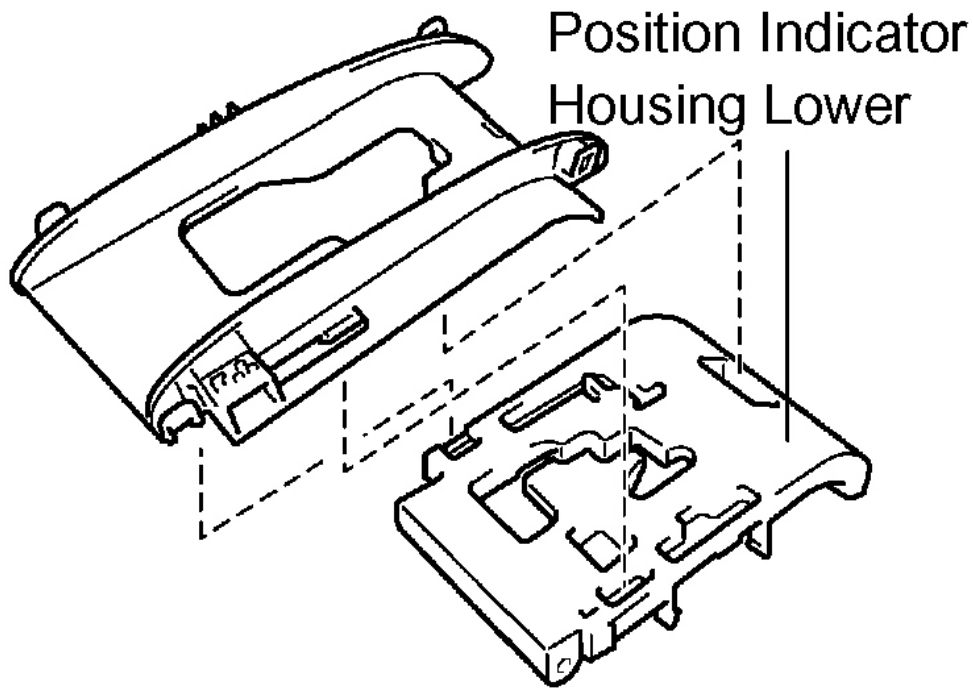
Fig. 120: Installing Transmission Control Switch To Shift Lever Guide Housing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

37. INSTALL POSITION INDICATOR HOUSING LOWER

- a. Install the position indicator housing lower to the shift lever guide housing.

HINT:

Securely engage the claws.



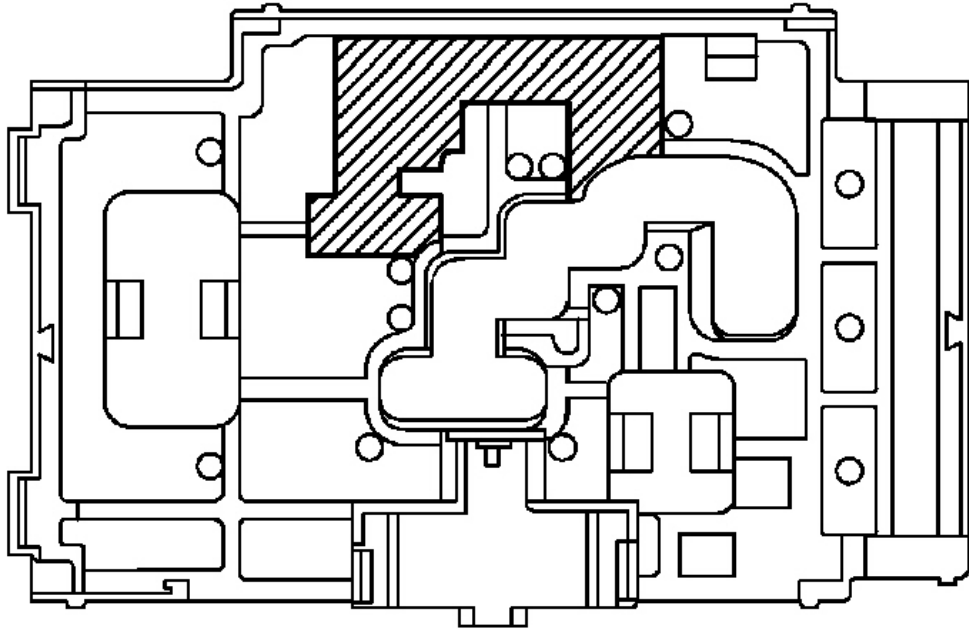
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Fig. 121: Installing Position Indicator Housing Lower To Shift Lever Guide Housing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

38. **INSTALL SHIFT LOCK CONTROL ECU SUB-ASSY**

- a. Apply MP grease to the hatched area of the shift lever guide housing as indicated in the illustration.

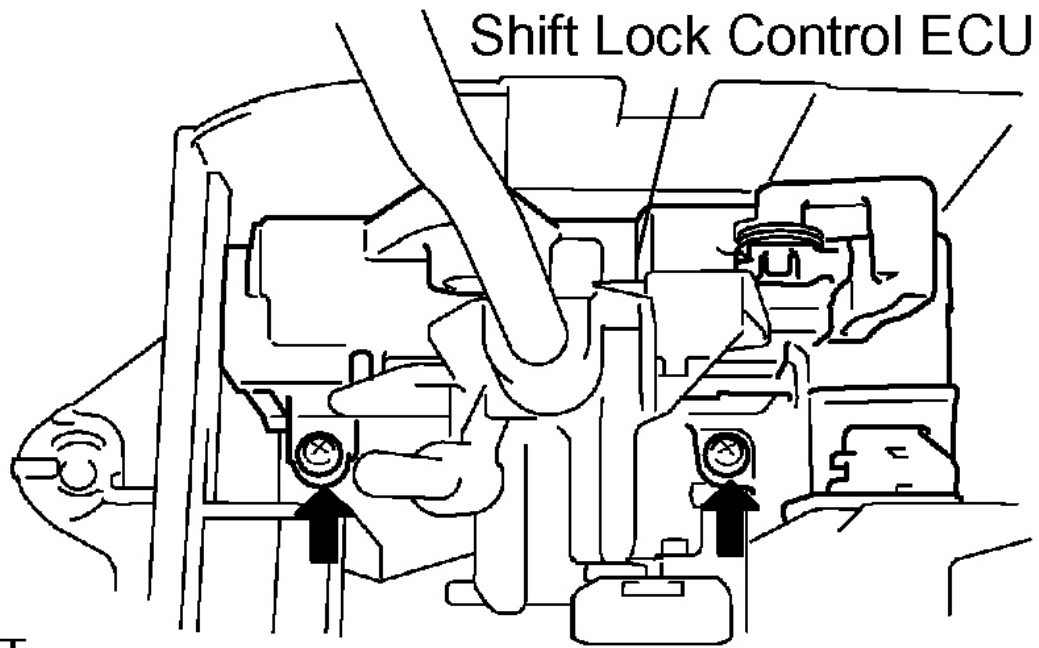


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Fig. 122: Applying MP Grease To Hatched Area Of Shift Lever Guide Housing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Install the shift lock control ECU sub-assy with the 2 screws.



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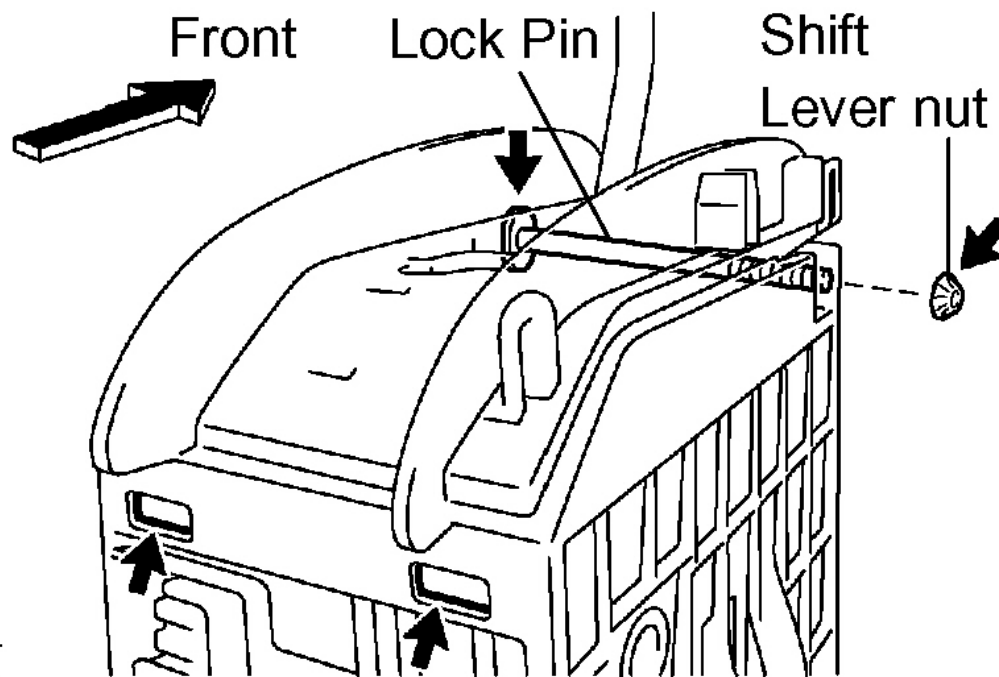
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Fig. 123: Installing Shift Lock Control ECU Sub-Assy With 2 Screws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- c. Install the shift lever guide housing with the shift lever lock pin and a new shift lever nut.

NOTE:

- Install the shift lever nut and lock pin after first engaging the 2 claws.
- Securely engage the claws.

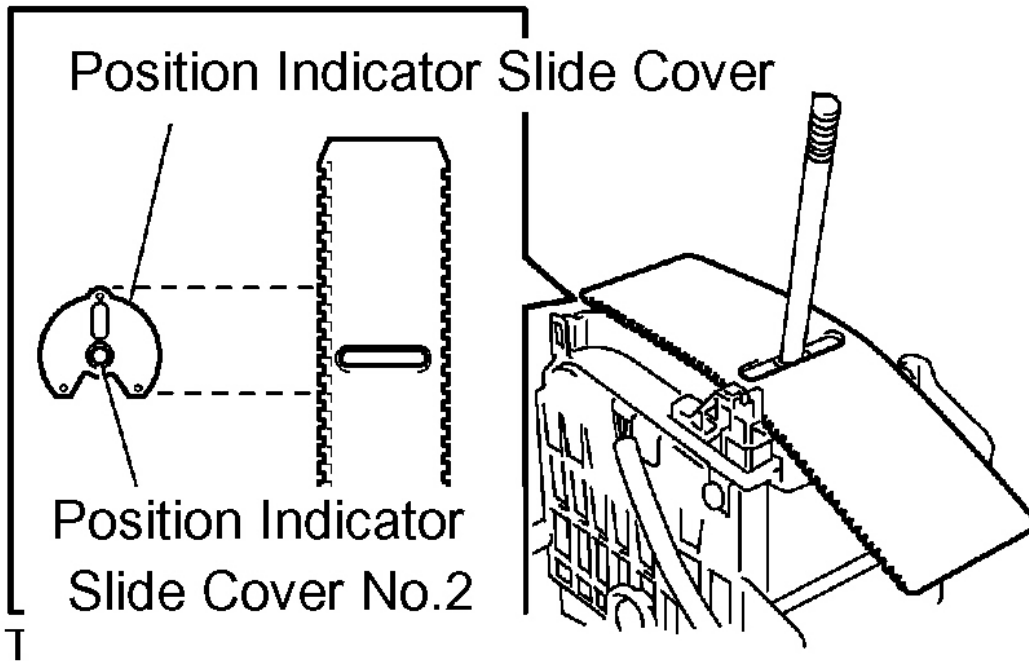


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Fig. 124: Installing Shift Lever Nut And Lock Pin After First Engaging 2 Claws
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

39. INSTALL POSITION INDICATOR SLIDE COVER

- a. Install position indicator slide cover No.2 to the position indicator slide cover.
- b. Install the position indicator slide cover to the shift lever guide housing.



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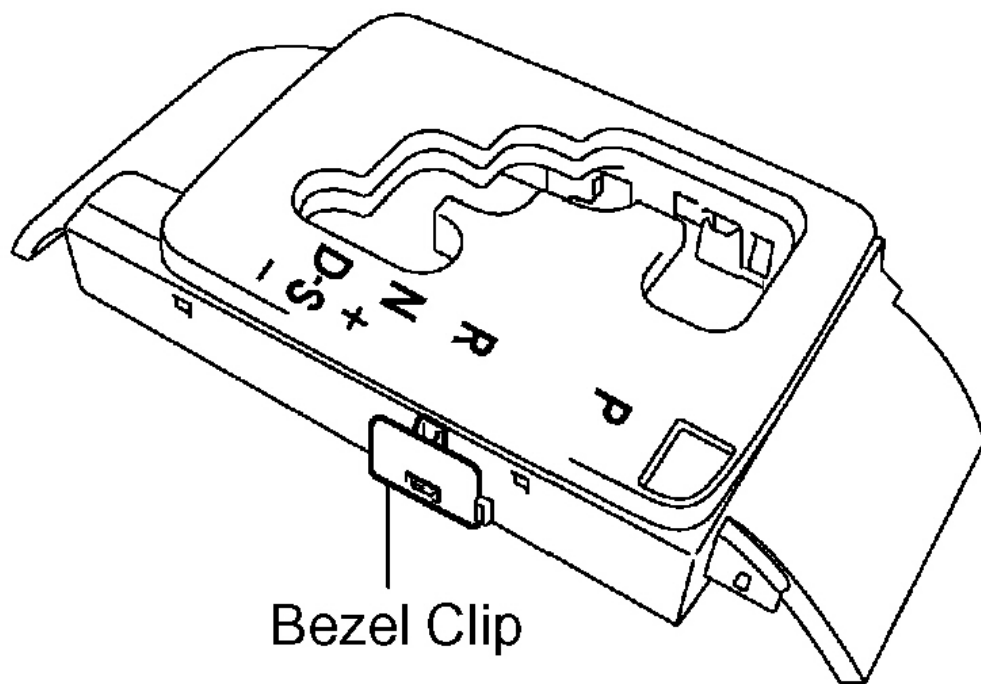
Fig. 125: Installing Position Indicator Slide Cover No.2 To Position Indicator Slide Cover
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

40. INSTALL BEZEL CLIP

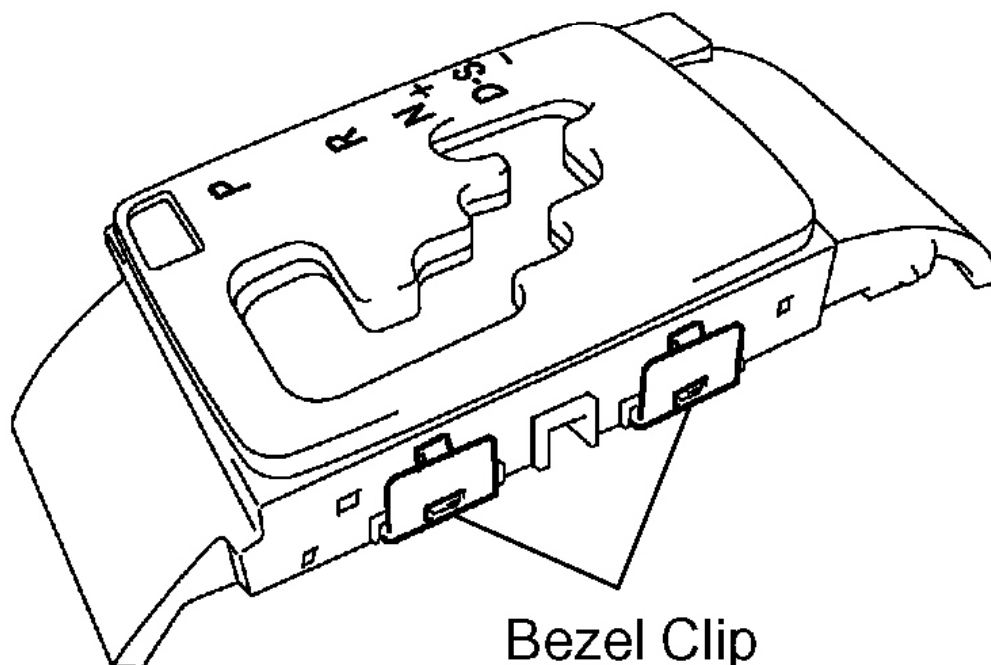
- a. Install new 3 bezel clips to the position indicator housing upper.

HINT:

Securely engage the claws.



Bezel Clip



Bezel Clip

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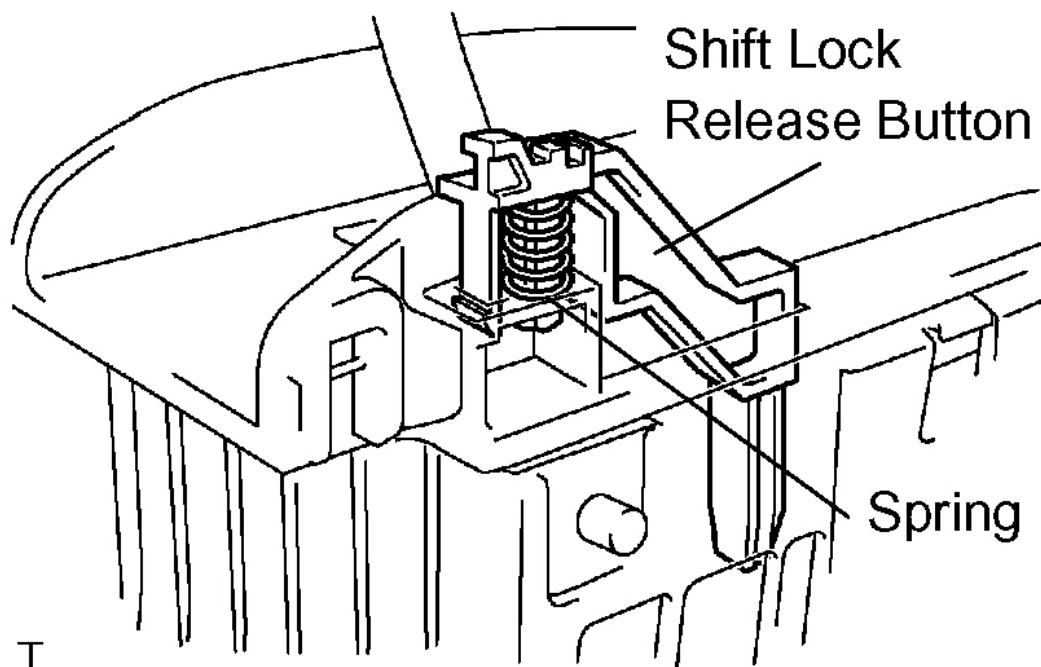
Fig. 126: Installing 3 bezel clips to position indicator housing upper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

41. **INSTALL SHIFT LOCK RELEASE BUTTON**

- a. Install the shift lock release button and spring to the floor shift assy.

HINT:

Securely engage the claws.



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Fig. 127: Installing Shift Lock Release Button And Spring To Floor Shift Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

42. **INSTALL INDICATOR LAMP WIRE SUB-ASSY**

- a. Securely connect the 2 terminals of the indicator lamp wire harness to the transmission control switch connector.
- b. Install the position indicator lamp bulb to the indicator lamp wire sub-assy.
- c. Install the position indicator bulb cap to the position indicator lamp bulb.

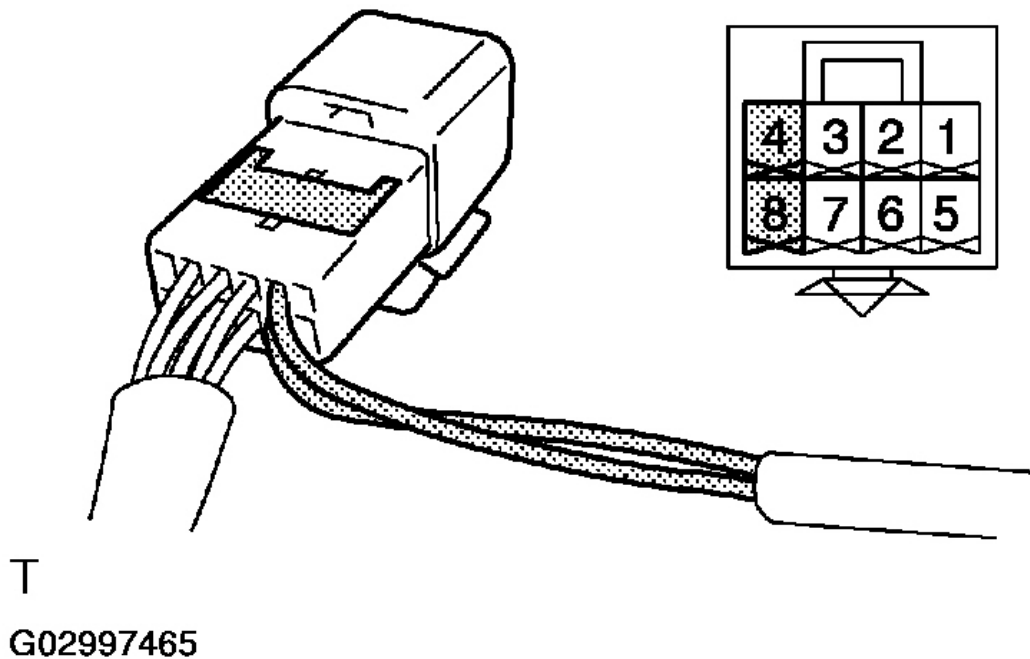
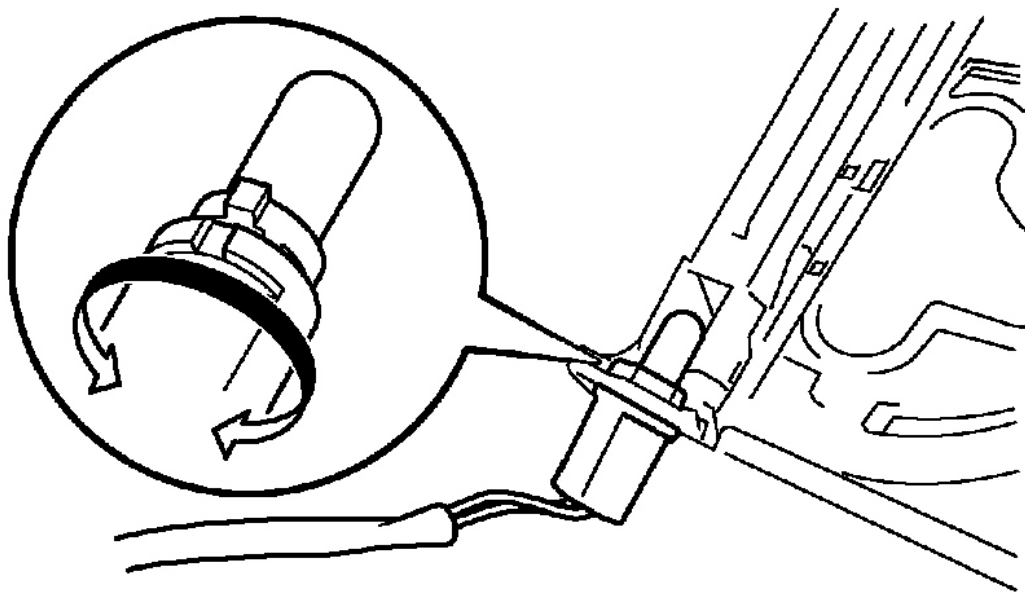


Fig. 128: Connecting 2 Terminals Of Indicator Lamp Wire Harness
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- d. Install the indicator lamp wire to the position indicator lens.

NOTE: **Make sure that the indicator lamp wire is securely installed to the position indicator lens.**

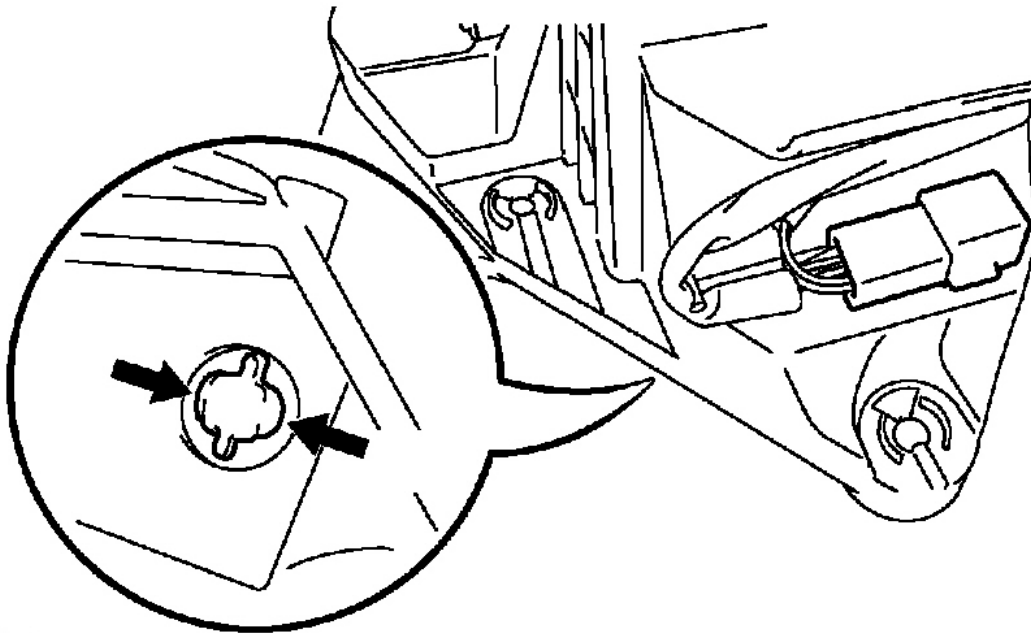


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Fig. 129: Installing Indicator Lamp Wire To Position Indicator Lens
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

43. Connect the indicator lamp wire connector to the floor shift assy.



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Fig. 130: Connecting Indicator Lamp Wire Connector To Floor Shift Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

44. INSTALL POSITION INDICATOR LENS

- a. Install the position indicator lens to the position indicator housing upper.

HINT:

Securely engage the claws.

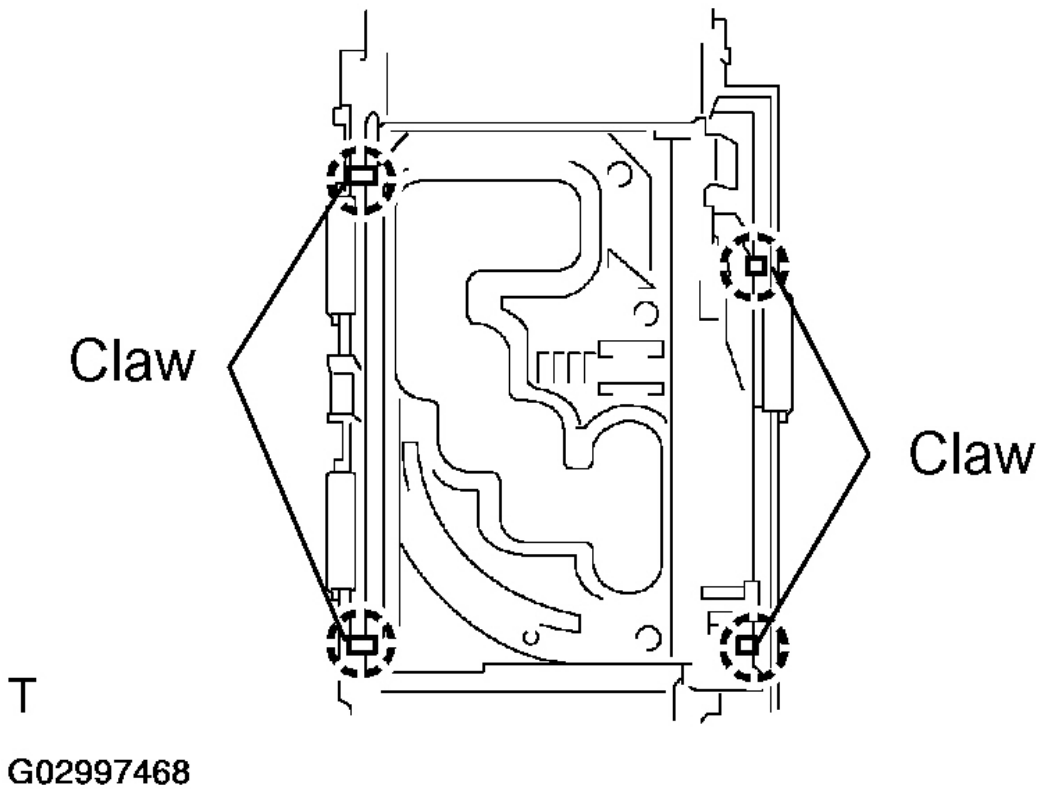


Fig. 131: Installing Position Indicator Lens To Position Indicator Housing Upper
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

45. **INSTALL POSITION INDICATOR HOUSING UPPER**

- a. Install the position indicator housing upper to the shift lever guide housing.

HINT:

Securely engage the claws.

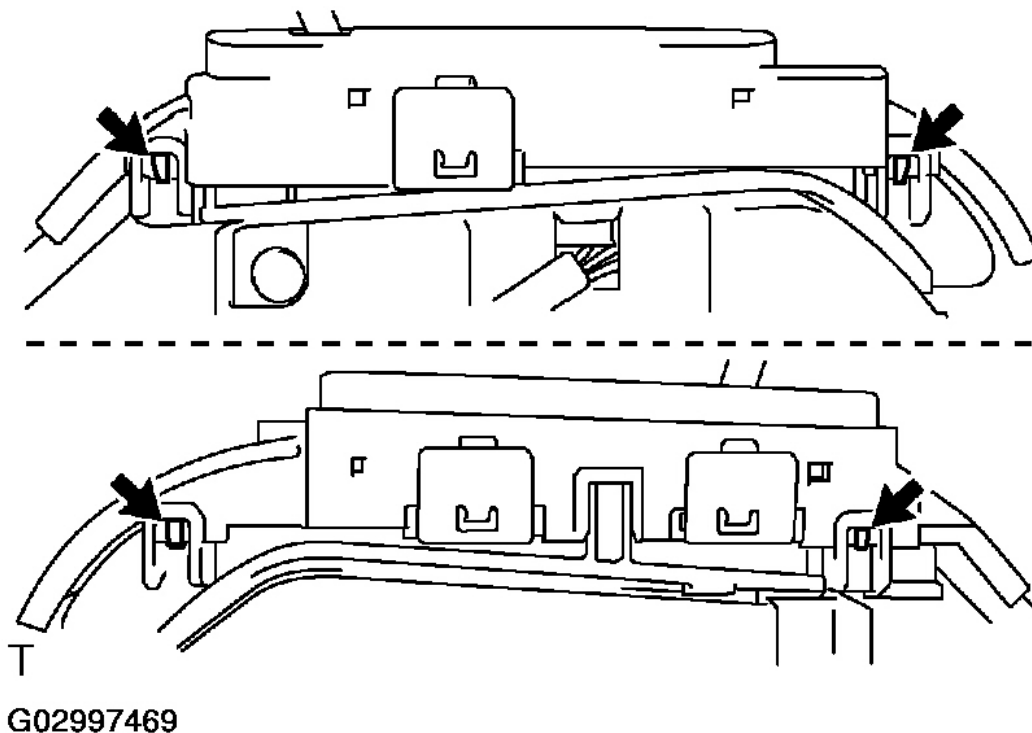


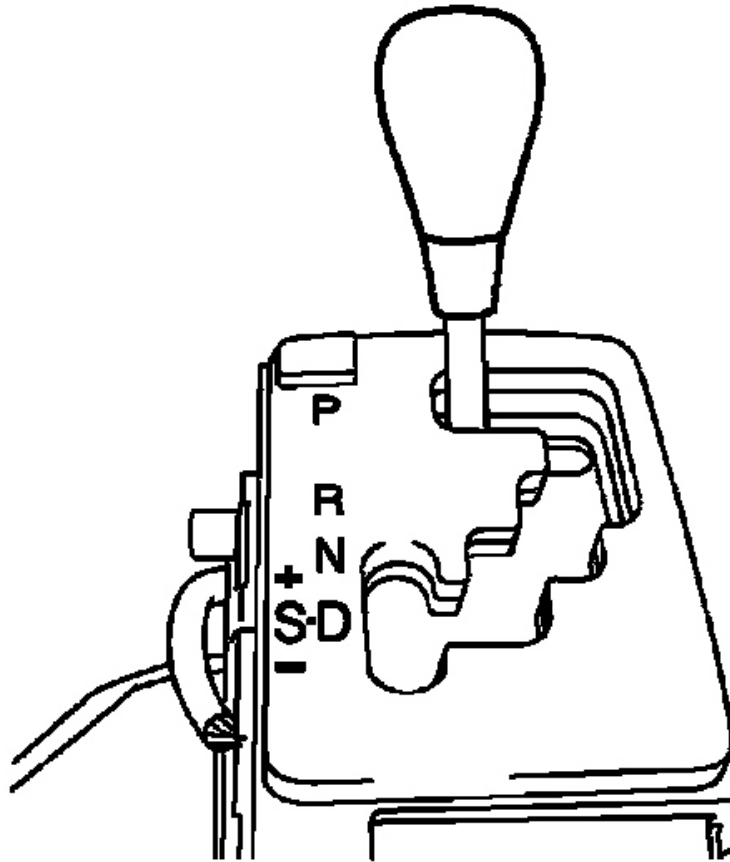
Fig. 132: Installing Position Indicator Housing Upper To Shift Lever Guide Housing
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

46. INSTALL SHIFT LOCK RELEASE BUTTON COVER

- a. Install the shift lock release button cover to the position indicator housing upper.

47. INSTALL SHIFT LEVER KNOB SUB-ASSY

- a. Install the shift lever knob sub-assy to the floor shift lever assy.



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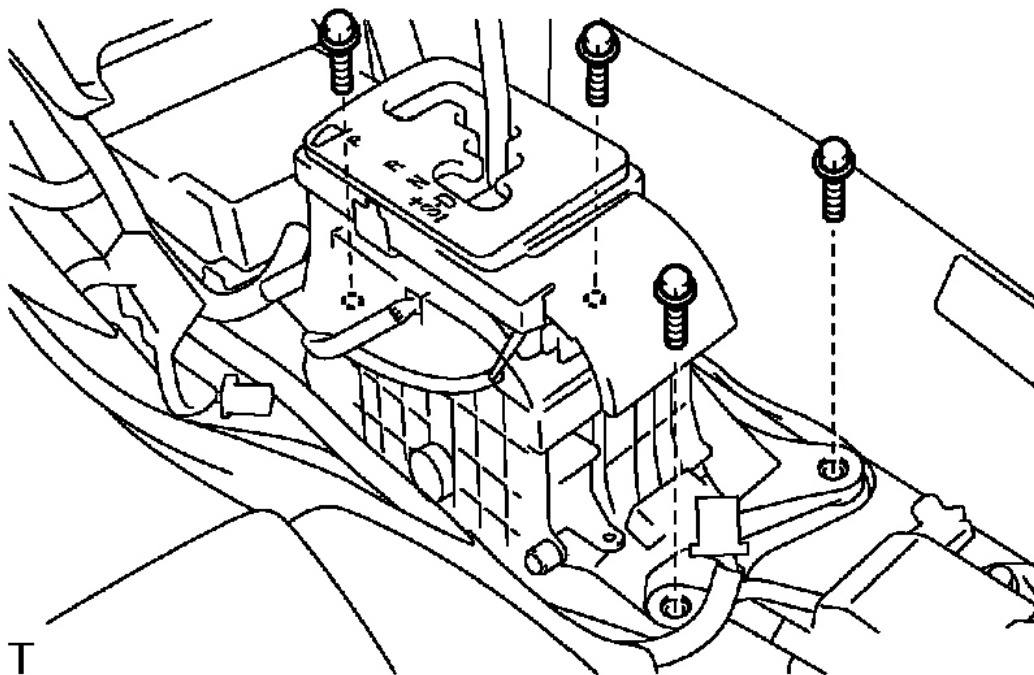
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Fig. 133: Installing Shift Lever Knob Sub-Assy To Floor Shift Lever Assy
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

48. **INSTALL INDOOR ELECTRICAL KEY OSCILLATOR (W/ SMART KEY)**
- Install the indoor electrical key oscillator to the shift lever plate with the 2 screws.

NOTE: **Securely engage the claws.**

49. **INSTALL FLOOR SHIFT ASSY**
- Install the floor shift assy with the 4 bolts.
Torque: 8.3 N.m (85 kgf.cm, 74 in.lbf)
 - Connect the connector to the floor shift assy.



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Fig. 134: Installing Floor Shift Assy With 4 Bolts
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

50. **INSTALL FLOOR SHIFT GEAR SHIFTING ROD SUB-ASSY**
 - a. Install the floor shift gear shifting rod sub-assy with the nut.
Torque: 13 N.m (130 kgf.cm, 9 ft.lbf)

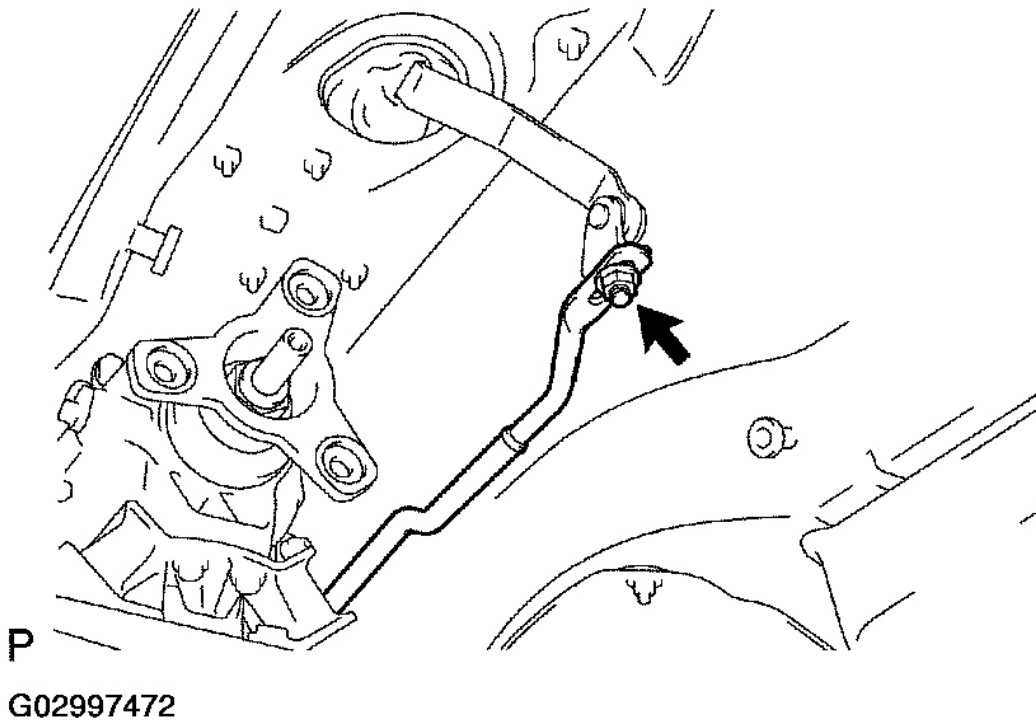


Fig. 135: Installing Floor Shift Gear Shifting Rod Sub-Assy With Nut
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

51. **CONNECT BATTERY NEGATIVE TERMINAL**
52. **ADJUST SHIFT LEVER POSITION (SEE ADJUSTMENT)**
53. **INSPECT SHIFT LEVER POSITION (SEE ADJUSTMENT)**
54. **PERFORM INITIALIZATION (SEE INITIALIZATION)**

ADJUSTMENT

1. INSPECT SHIFT LEVER POSITION

- a. When shifting from the P to R position with the ignition switch on and brake pedal depressed, make sure that the shift lever moves smoothly and moves correctly into position.
- b. Start the engine and make sure that the vehicle moves forward when shifting from the N to D position and moves rearward when shifting to the R position.

If operation cannot be done as specified, inspect the park/neutral position switch assy and check the shift lever assy installation condition.

2. ADJUST SHIFT LEVER POSITION

- a. Remove the nut and disconnect the shifting rod from the connecting rod swivel.

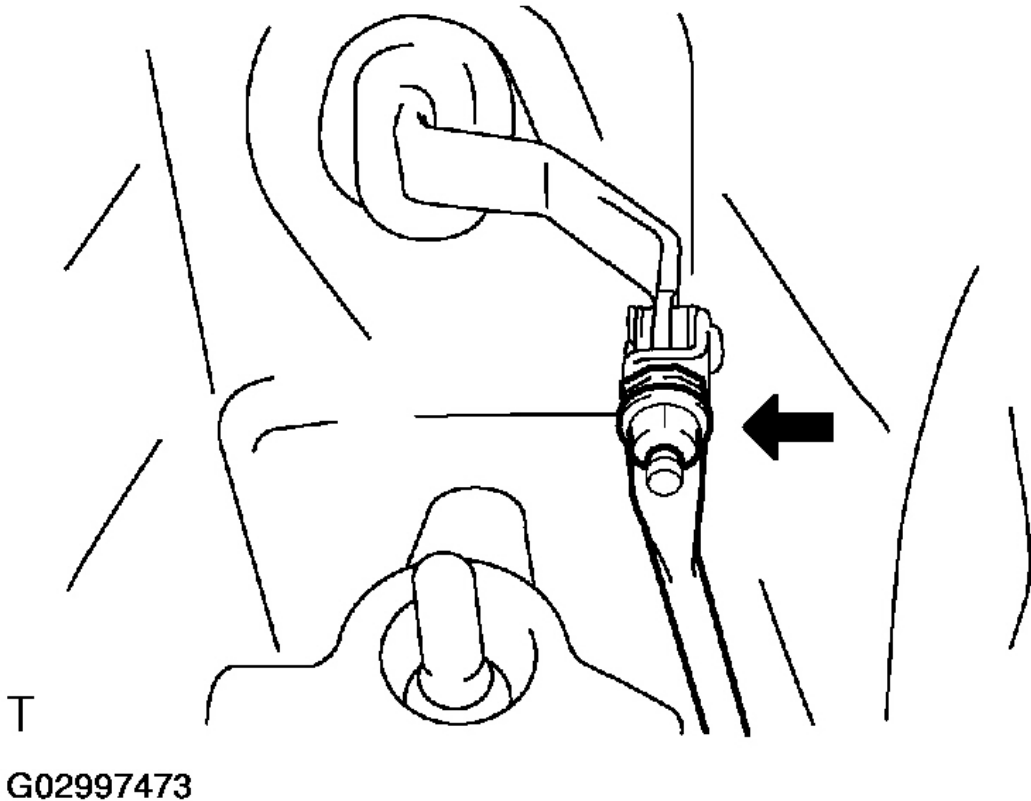
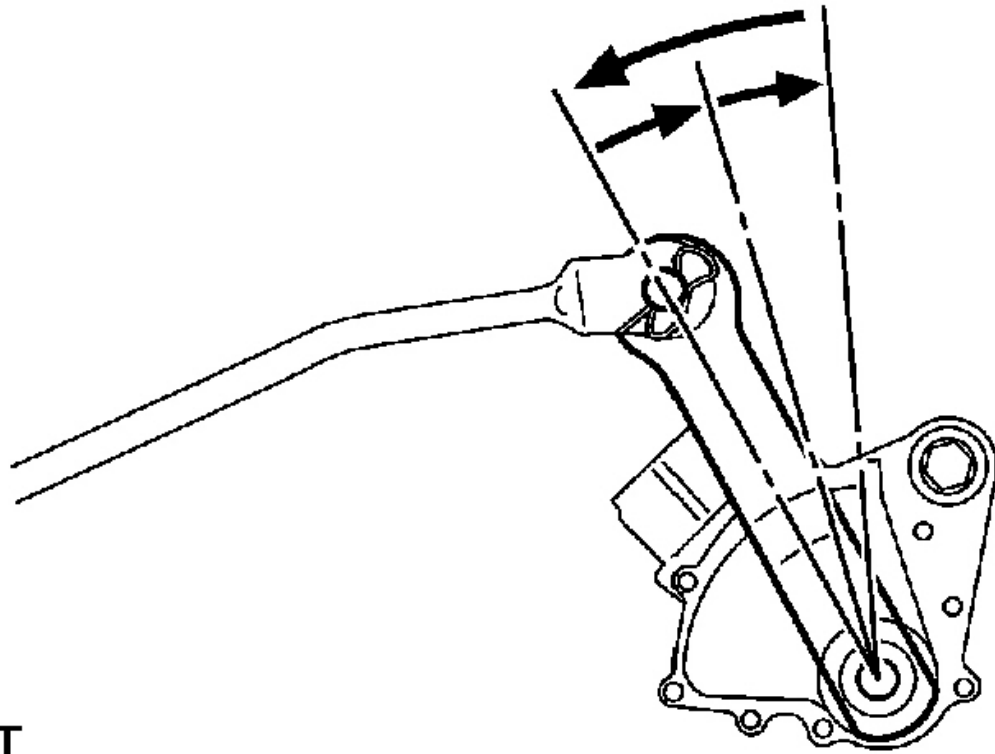


Fig. 136: Removing Nut And Disconnecting Shifting Rod From Connecting Rod Swivel
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Turn the control shaft lever of the neutral start switch counterclockwise until it stops, and turn it clockwise 2 notches to set it to the N position.
- c. Move the shift lever to the N position and tighten the nut while lightly pushing the lever toward the R position.

NOTE: Do not push the shift lever too hard.

- d. After adjustment, check that the shift lever moves smoothly and the shift lever and gear operate correctly.



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Fig. 137: Turning Control Shaft Lever Of Neutral Start Switch
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.