

AUTOMATIC TRANSMISSION ASSY (A340E/A340F)

4016L-01

PRECAUTION

NOTICE:

- ◆ The automatic transmission is composed of highly precision-finished parts, necessitating careful inspection before reassembly because even a small nick could cause fluid leakage or affect the 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 are inspected and repaired from the converter housing side. As much as possible, complete the inspection, repair and reassembly before proceeding to the next component group. If a defect is found in a certain component group during reassembly, inspect and repair this group immediately. If a component group cannot be assembled because parts are being ordered, be sure to keep all parts of the group in a separate container while proceeding with disassembly, inspection, repair and reassembly of other component groups.

Recommended ATF: T-IV

- ◆ All disassembled parts should be washed clean and any fluid passages and holes should be blown through with compressed air.
- ◆ Dry all parts with compressed air—never use shop rags.
- ◆ When using compressed air, always aim away from yourself to prevent accidentally spraying ATF or kerosene on your face.
- ◆ The recommended automatic transmission fluid or kerosene should be used for cleaning.
- ◆ After cleaning, the parts should be arranged in the correct order for efficient inspection, repairs, and reassembly.
- ◆ When disassembling a valve body, be sure to match each valve together with the corresponding spring.
- ◆ 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.
- ◆ All oil seal rings, clutch discs, clutch plates, rotating parts, and sliding surfaces should be coated with ATF prior to reassembly.
- ◆ All gaskets and rubber O-rings should be replaced.
- ◆ Do not apply adhesive cements to gaskets and similar parts.
- ◆ Make sure that the ends of a snap ring are not aligned with one of the cutouts and are installed in the groove correctly.
- ◆ If a worn bushing is to be replaced, the sub-assembly containing the bushing must also be replaced.
- ◆ Check thrust bearings and races for wear or damage. Replace if necessary.
- ◆ Use petroleum jelly to keep parts in place.
- ◆ When working with FIPG material, you must observe the following.
Using a razor blade and a gasket scraper, remove all the old packing (FIPG) material from the gasket surface.
Thoroughly clean all components to remove all the loose material.
Clean both sealing surfaces with a non-residue solvent.
Parts must be reassembled within 10 minutes of application. Otherwise, the packing (FIPG) material must be removed and reapplied.

AUTOMATIC TRANSMISSION ASSY (A750E/A750F) (From August, 2003)

4007T-08

PRECAUTION

1. The automatic transmission is composed of highly precision-finished parts, necessitating careful inspection before reassembly because even a small nick could cause fluid leakage or affect the performance. The instructions here are organized so that you work on only one component group at a time. This will help to avoid confusion from similar-looking parts of different sub-assemblies being on your workbench at the same time. The component groups are inspected and repaired from the converter housing side. 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, always do not aim at yourself to prevent accidentally spraying ATF or kerosene on your face.
5. The recommended automatic transaxle fluid or kerosene should be used for cleaning.
6. After cleaning, the parts should be arranged in the correct order for efficient inspection, repairs, and reassembly.
7. When disassembling a valve body, be sure to match each valve together with the corresponding spring.
8. New discs for the brakes and clutches that are to be used for replacement must be soaked in ATF for at least 15 minutes before reassembly.
9. All oil seal rings, clutch discs, clutch plates, rotating parts, and sliding surfaces should be coated with ATF prior to reassembly.
10. All gaskets and rubber O-rings should be replaced.
11. Do not apply adhesive cements to gaskets and similar parts.
12. Make sure that the ends of a snap ring are not aligned with one of the cutouts and are installed in the groove correctly.
13. 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 if necessary.
15. Use petroleum jelly to keep parts in place.
16. When working with FIPG material, you must perform the following.
Using a razor blade and a gasket scraper, remove all the old packing (FIPG) material from the gasket surface.
Thoroughly clean all components to remove all the material being come off.
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 (A340E/A340F)

ON-VEHICLE INSPECTION

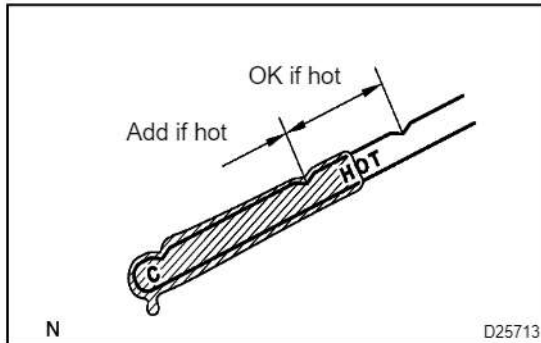
4016M-01

1. CHECK THE FLUID LEVEL

HINT:

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

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



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

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

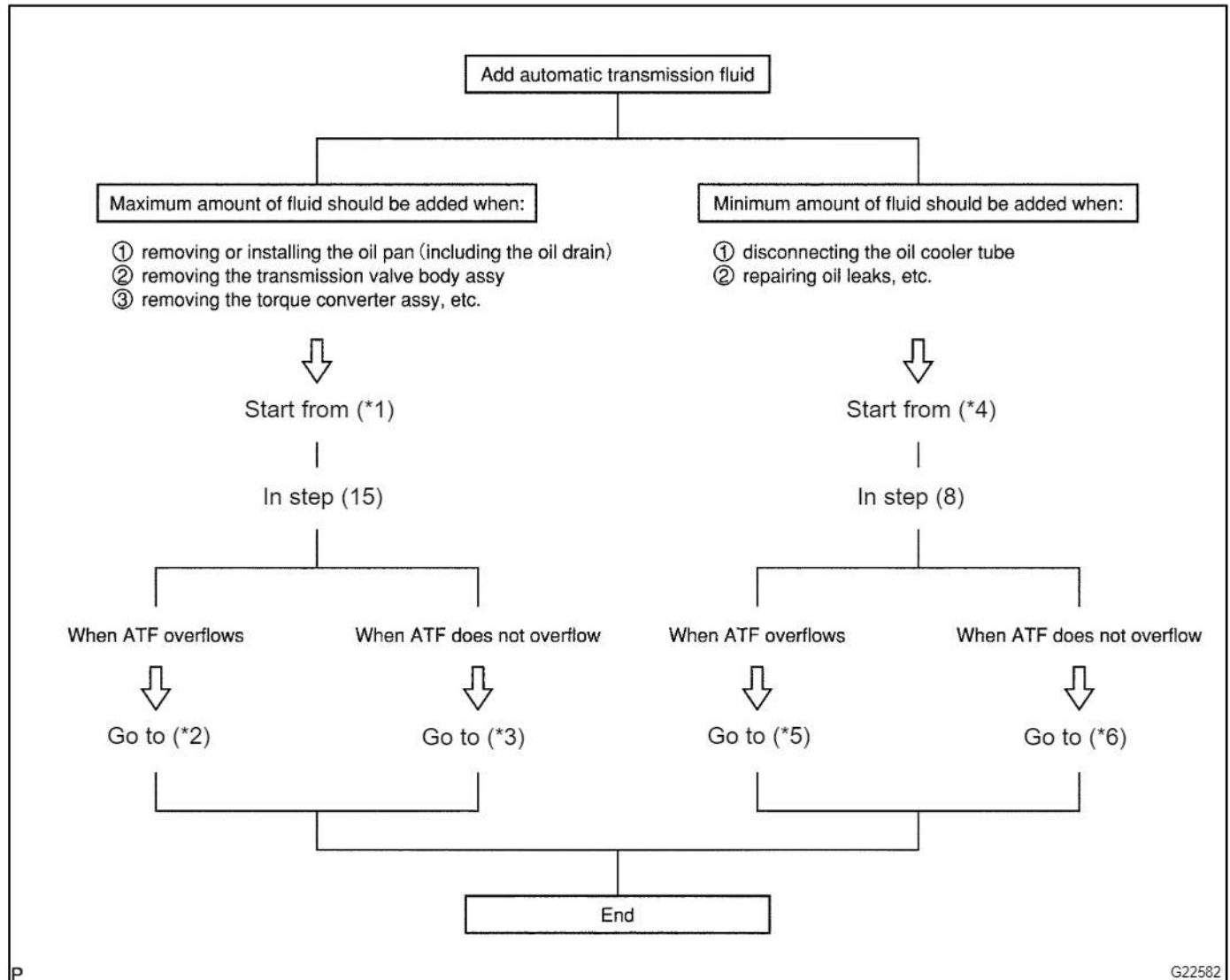
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AUTOMATIC TRANSMISSION FLUID (A750E/A750F) (From August, 2003)

ADJUSTMENT

40161-01

1. ADD AUTOMATIC TRANSMISSION FLUID



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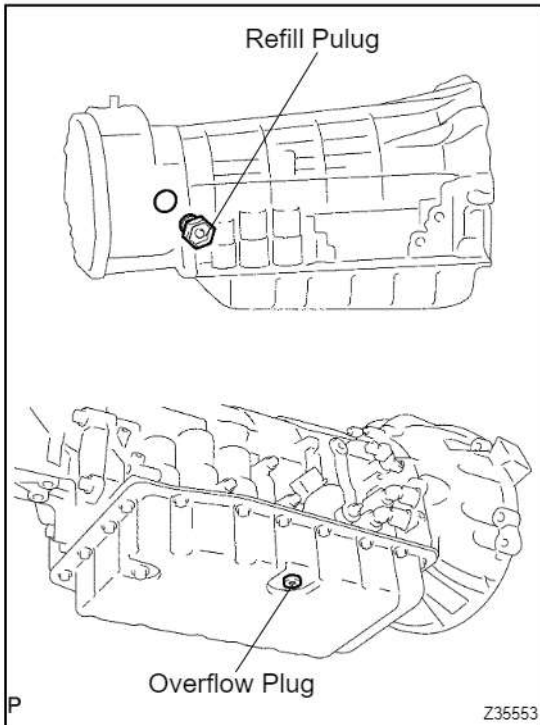
(a) When adding a maximum amount of fluid: (*1)

(1) Lift up the vehicle.

NOTICE:

Keeping it level.

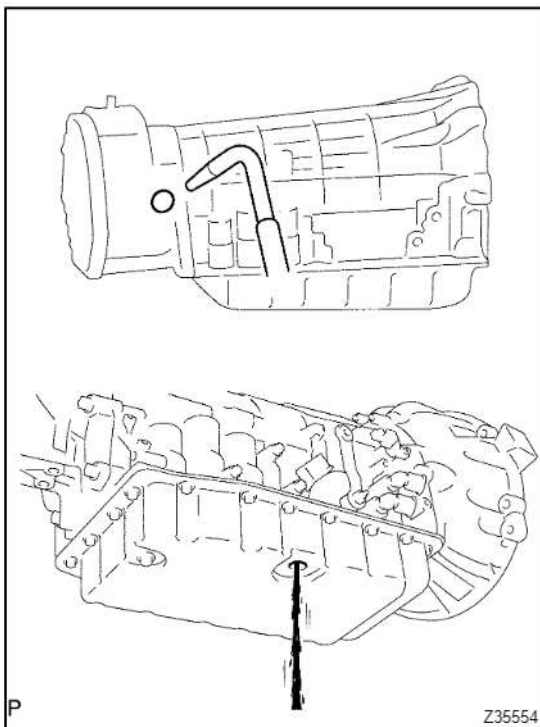
(2) Remove the refill plug and overflow plug.

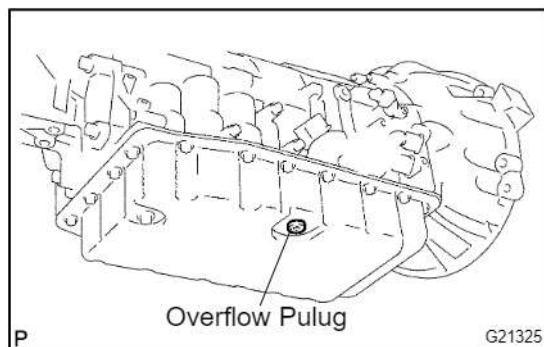


(3) Add ATF to the refill hole until it drains out from the overflow hole.

NOTICE:

Be sure to add ATF WS.



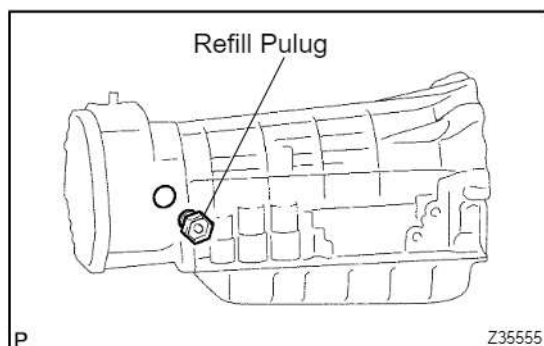


- (4) Install a gasket and overflow plug.
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)
- (5) Refill ATF to the refill hole.

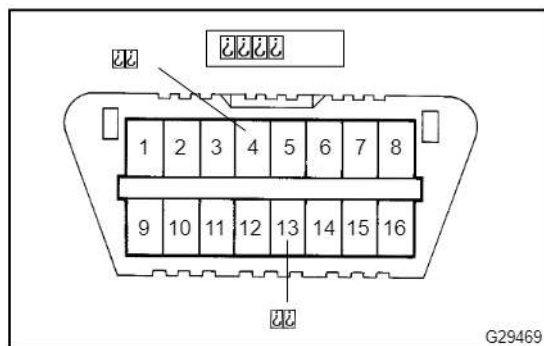
NOTICE:

Refill amount is different depending on the related procedures.

Related procedures	Refill amount
When removal and installation of oil pan	1.7 L (1.8 US qts, 1.5 Imp.qts)
When removal of transmission valve body assy	4.3 L (4.5 US qts, 3.8 Imp.qts)
When removal of torque converter assy	5.4 L (5.7 US qts, 4.8 Imp.qts)



- (6) Install a gasket and refill plug.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)
- (7) Lower down the vehicle.



- (8) Using an SST, short-circuit between terminals TC and CG of the DLC3.

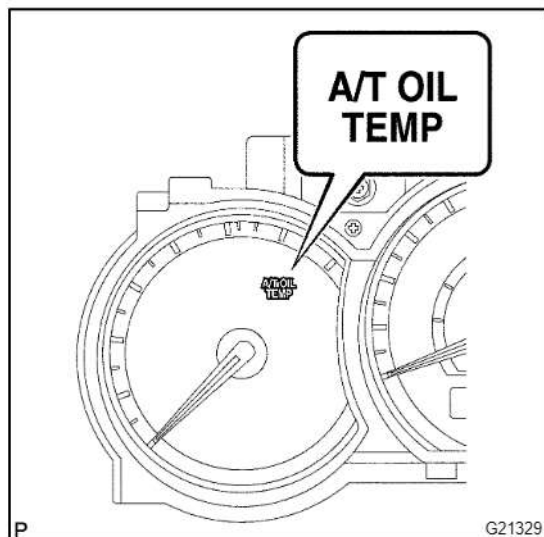
SST 09843-18040

- (9) Start the engine.

NOTICE:

Turn the A/C off.

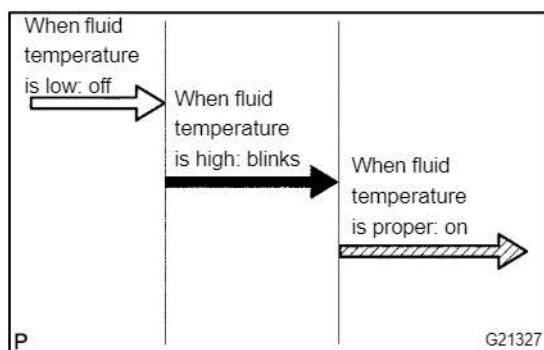
- (10) Slowly move the shift lever from the P to the 2-L position.
Return the shift lever to the P position.



- (11) Switch to the fluid temperature detection mode.
 - ◆ Move the shift lever from the N to the 4D position, or from 4D to N, within 1.5 seconds.
 - ◆ Perform the above procedure for 6 seconds or more.

Standard: Meter indicator lamp "ATF temperature warning lamp" comes on for 2 seconds and then goes off.

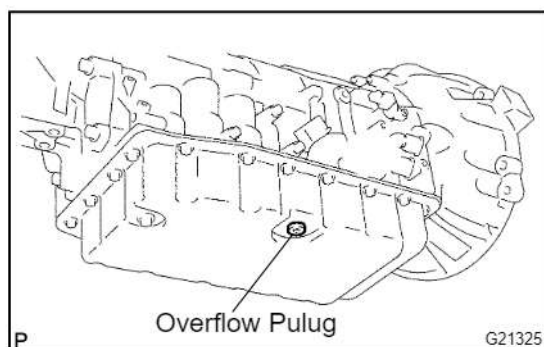
- (12) Disconnect terminal TC and CG after confirming the above condition.
- (13) Idle the engine to raise fluid temperature.



- (14) Lift up the vehicle right after the meter indicator light "ATF temperature warning lamp" comes on.

NOTICE:

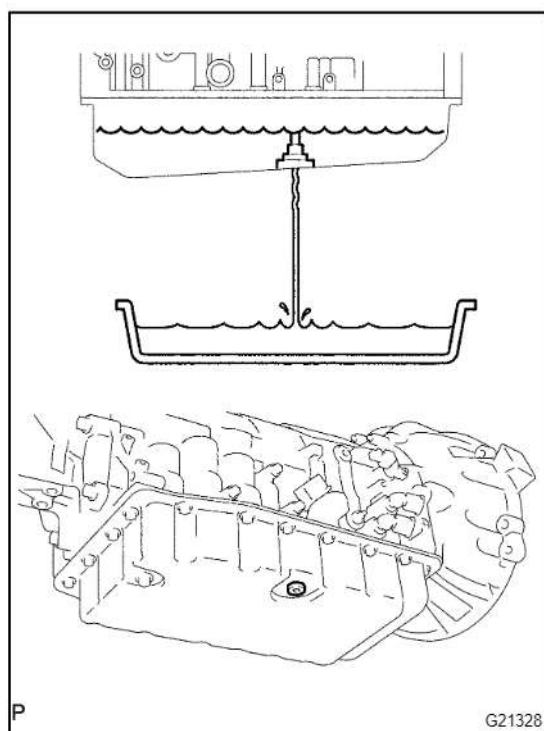
- ◆ Add fluid only when the meter indicator light is on.
- ◆ Perform the procedure while the engine is idling.



- (15) Remove the overflow plug.

NOTICE:

Capacity of the overflow tube is approximately 3 cc.



- (b) When fluid overflow: (*2)

- (1) Install a new gasket and overflow plug when the draining ATF becomes a trickle.

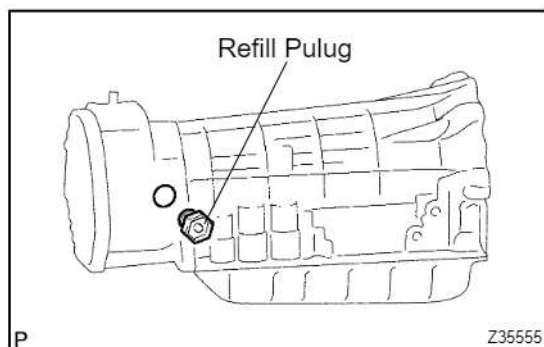
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)

- (2) Install a new o-ring and refill plug.

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

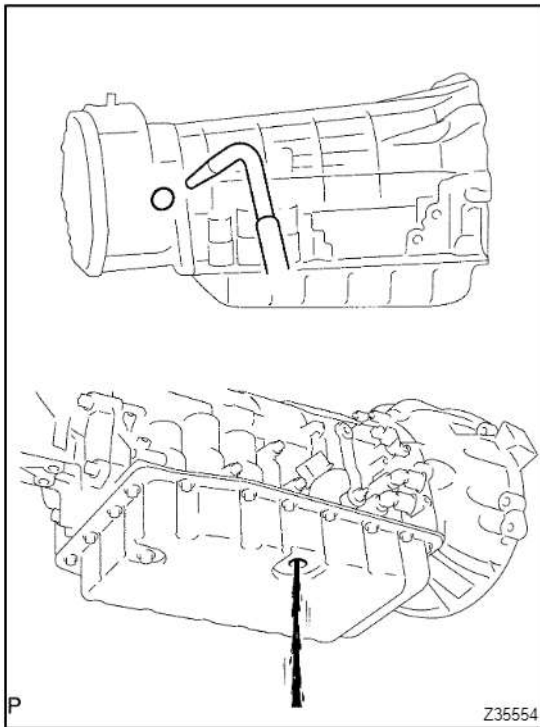
- (3) Lower down the vehicle.

- (4) Turn the ignition switch off.

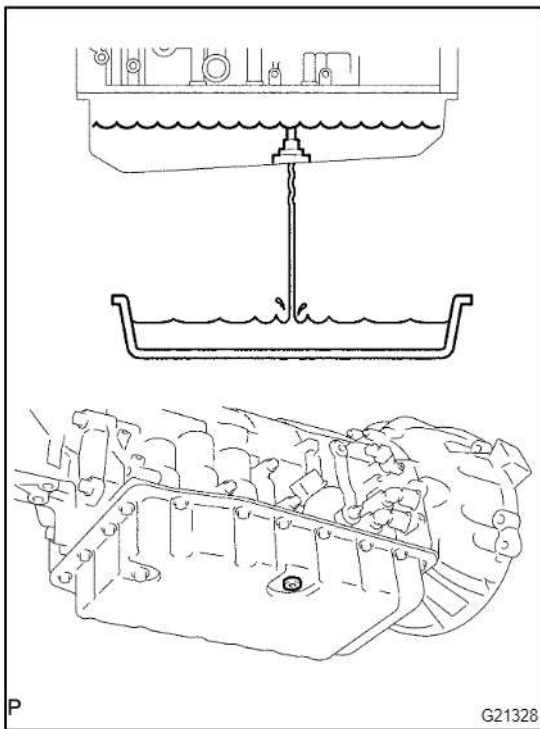


- (c) When fluid does not overflow: (*3)

- (1) Remove the refill plug.



- (2) Add ATF to the refill hole until it drains out from the overflow hole.



- (3) Install a new gasket and overflow plug when the draining ATF becomes a trickle.

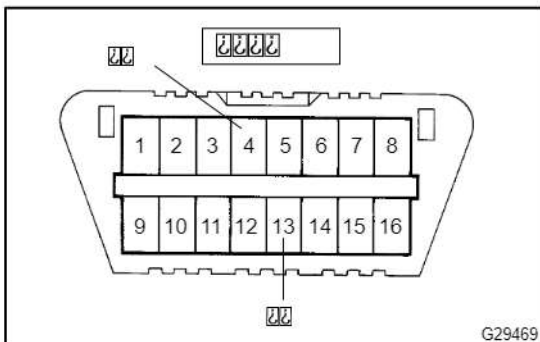
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)

- (4) Install a new o-ring and refill plug.

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

- (5) Lower down the vehicle.

- (6) Turn the ignition switch off.



- (d) When adding a minimum amount of fluid: (*4)

- (1) Using an SST, short-circuit between terminals TC and CG of the DLC3.

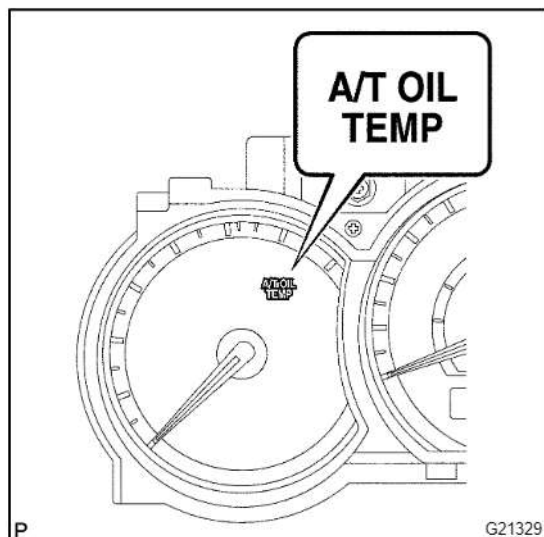
SST 09843-18040

- (2) Start the engine.

NOTICE:

Turn the A/C off.

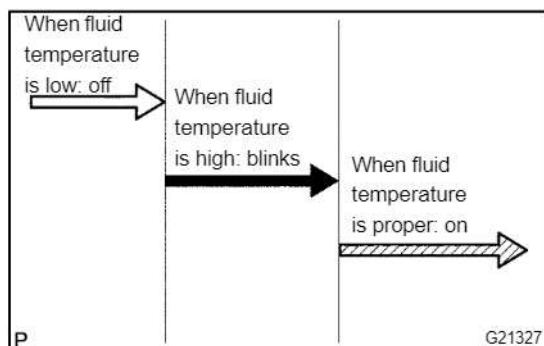
- (3) Slowly move the shift lever from the P to the 2-L position. Return the shift lever to the P position.



- (4) Switch to the fluid temperature detection mode.
 - ◆ Move the shift lever from the N to the 4D position, or from 4D to N, within 1.5 seconds.
 - ◆ Perform the above procedure for 6 seconds or more.

Standard: Meter indicator lamp "ATF temperature warning lamp" comes on for 2 seconds and then goes off.

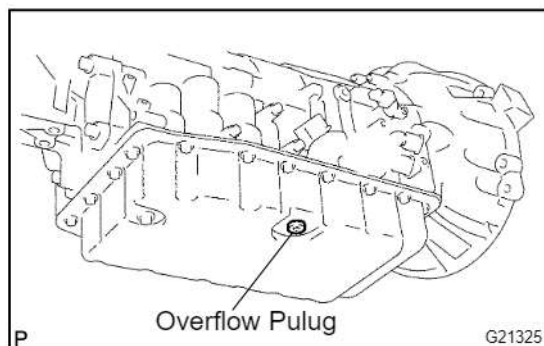
- (5) Disconnect terminal TC and CG after confirming the above condition.
- (6) Idle the engine to increase fluid temperature.



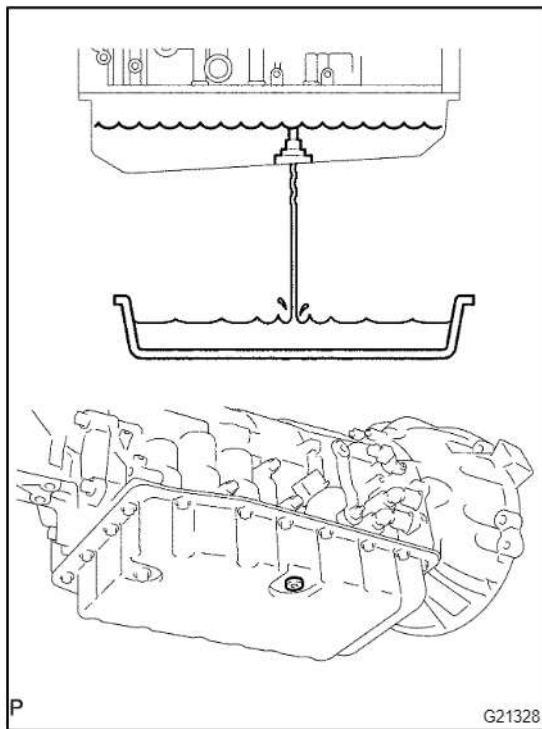
- (7) Lift up the vehicle right after the meter indicator light "ATF temperature warning lamp" comes on.

NOTICE:

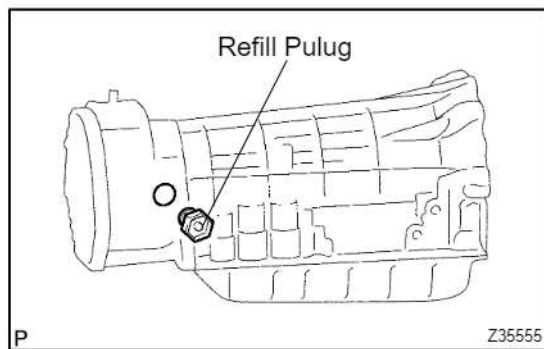
- ◆ Add fluid only when the meter indicator light is on.
- ◆ Perform the procedure while the engine is idling.



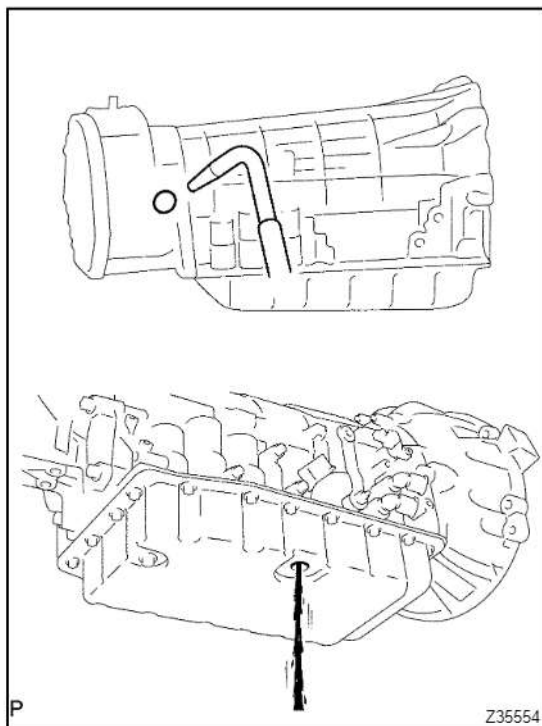
- (8) Remove the overflow plug.



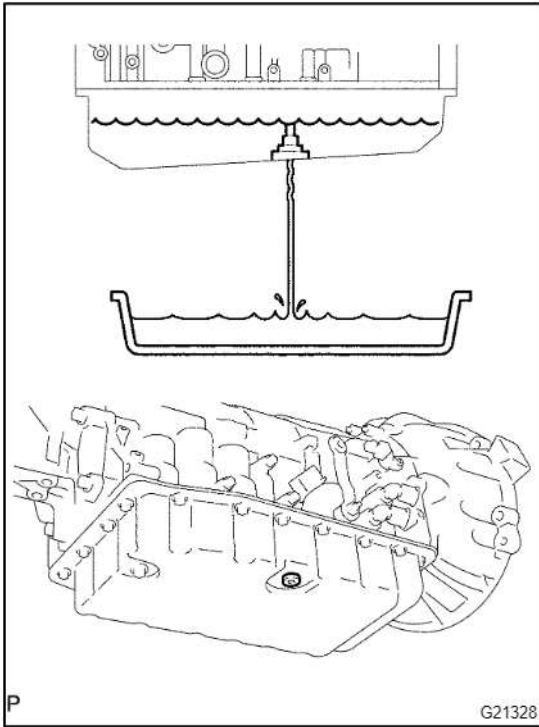
- (e) When fluid overflows: (*5)
- (1) Install a new gasket and overflow plug when the draining ATF becomes a trickle.
Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)
 - (2) Install a new o-ring and refill plug.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)
 - (3) Lower down the vehicle.
 - (4) Turn the ignition switch off and remove the SST.



- (f) When fluid does not overflow: (*6)
- (1) Remove the refill plug.



- (2) Add ATF to the refill hole until it drains out from the overflow hole.



- (3) Install a new gasket and overflow plug when the draining ATF becomes a trickle.

Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)

- (4) Install a new gasket and refill plug.

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

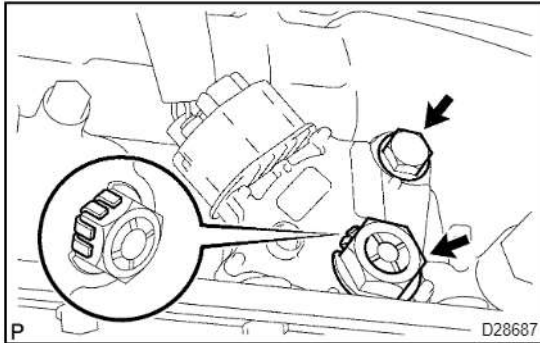
- (5) Lower down the vehicle.

- (6) Turn the ignition switch off.

PARK/NEUTRAL POSITION SWITCH ASSY REPLACEMENT

400UR-02

1. REMOVE ENGINE UNDER COVER SUB-ASSY NO.1
2. REMOVE ENGINE UNDER COVER ASSY REAR
3. DISCONNECT PARK/NEUTRAL POSITION SWITCH CONNECTOR



4. REMOVE PARK/NEUTRAL POSITION SWITCH ASSY
 - (a) Pry off the lock washer and remove the nut.
 - (b) Remove the bolt and park/neutral position switch.

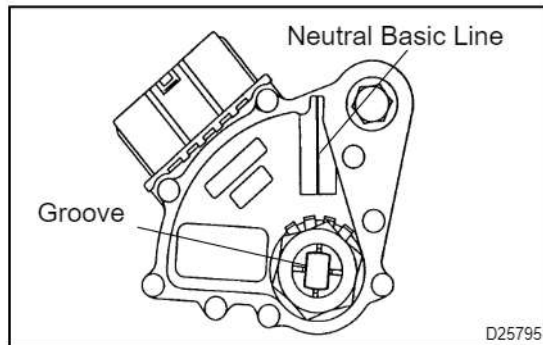
5. INSTALL PARK/NEUTRAL POSITION SWITCH ASSY
 - (a) Install the park/neutral position switch with bolt.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)
 - (b) Install a new lock washer and nut.
Torque: 7 N·m (71 kgf·cm, 62 in·lbf)
 - (c) Bent the claws on the lock washer to stake the nut.
 - (d) Adjust the park/neutral position switch (see page 40-13).
6. CONNECT PARK/NEUTRAL POSITION SWITCH CONNECTOR
7. INSTALL ENGINE UNDER COVER ASSY REAR
8. INSTALL ENGINE UNDER COVER SUB-ASSY NO.1
9. INSPECT PARK/NEUTRAL POSITION SWITCH ASSY (SEE PAGE 40-13)

ADJUSTMENT

1. INSPECT PARK/NEUTRAL POSITION SWITCH ASSY

- (a) Apply the parking brake and turn the ignition switch ON.
- (b) Depress the brake pedal and check that the engine starts only when the shift lever is set in N or P position and it does not start in other positions.
- (c) Check that the back-up light is lit and the reverse warning buzzer sounds only when the shift lever is set in R position and these 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 park/neutral position switch and set the shift lever to the N position.
- (b) Align the groove and neutral basic line.
- (c) Hold the switch in position and tighten the bolt.
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)
- (d) After adjustment, perform the inspection described in step 1.

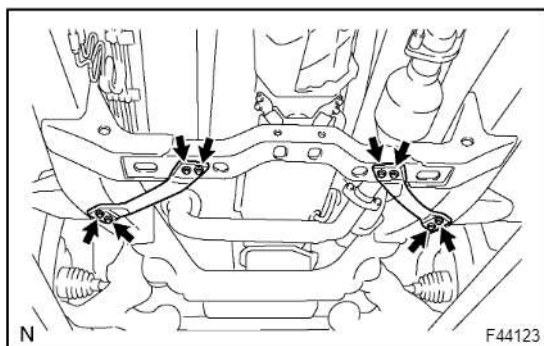
400YN-02



REPLACEMENT

1. REMOVE ENGINE UNDER COVER SUB-ASSY NO.1
2. REMOVE ENGINE UNDER COVER ASSY REAR
3. DISCONNECT OXYGEN SENSOR (See page 15-2)
4. REMOVE EXHAUST PIPE ASSY (See page 15-2)
5. REMOVE PROPELLER SHAFT ASSY (See page 30-11)
6. DRAIN AUTOMATIC TRANSMISSION FLUID
 - (a) Remove the drain plug, gasket and drain ATF.
 - (b) Install a new gasket and drain plug.

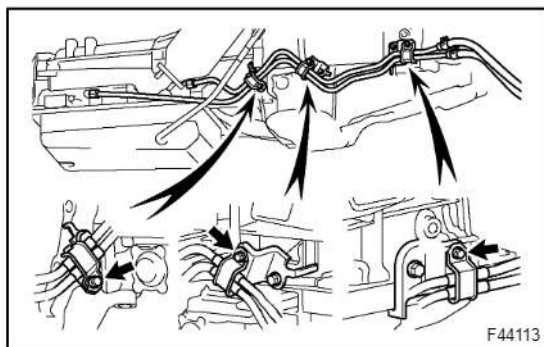
Torque: 20 N·m (205 kgf·cm, 15 ft·lbf)



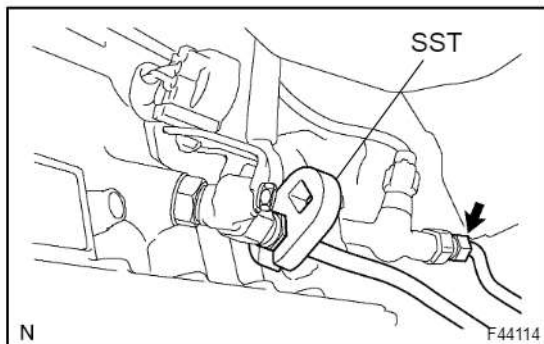
7. REMOVE FRONT SUSPENSION MEMBER BRACKET
 - (a) Remove the 4 bolts and front suspension member bracket.
8. REMOVE FRONT SUSPENSION MEMBER BRACKET LH
 - (a) Remove the 4 bolts and front suspension member bracket LH.

9. REMOVE TRANSMISSION OIL FILLER TUBE SUB-ASSY

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



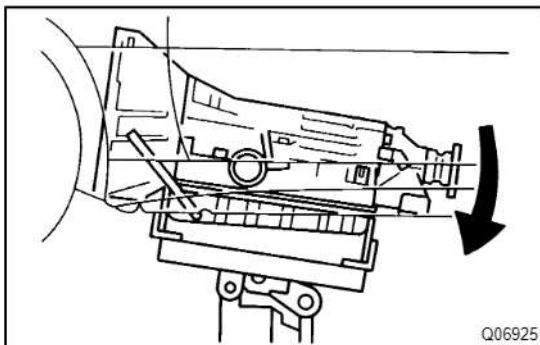
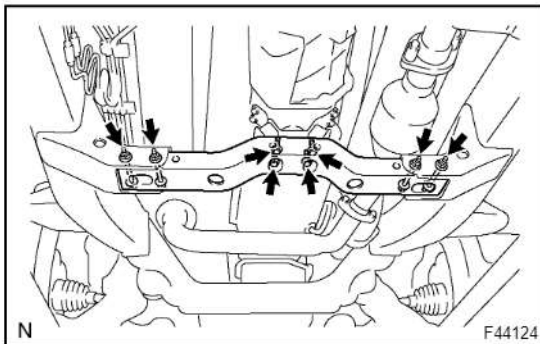
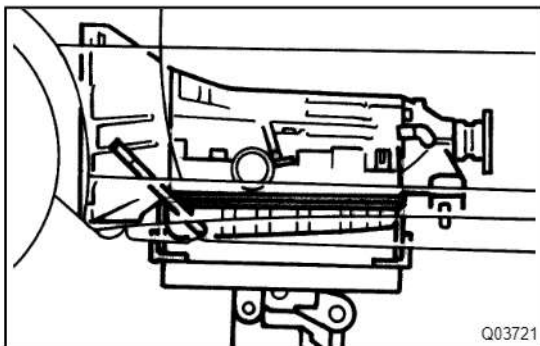
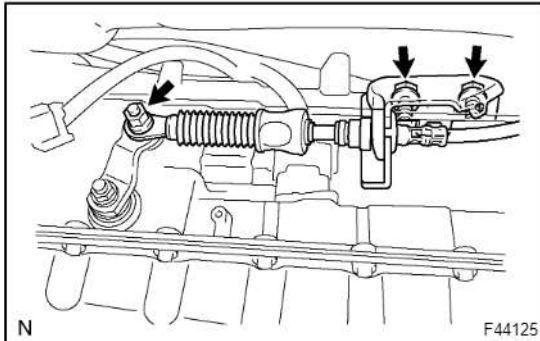
10. DISCONNECT OIL COOLER OUTLET TUBE NO.1
 - (a) Remove the 3 bolts and 3 clamps.



- (b) Using SST, disconnect the oil cooler outlet tube No.1.
SST 09023-12700

11. REMOVE OIL COOLER INLET TUBE NO.1

- (a) Using SST, disconnect the oil cooler inlet tube No.1.
SST 09023-12700

**12. DISCONNECT TRANSMISSION CONTROL CABLE ASSY**

- (a) Remove the nut and disconnect the transmission control cable.
(b) Remove the lock plate and disconnect the transmission control cable.

13. REMOVE TRANSMISSION CONTROL CABLE BRACKET NO.1

- (a) Remove the 2 bolts and transmission control cable bracket No.1.

14. SUPPORT AUTOMATIC TRANSMISSION ASSY**15. REMOVE FRAME CROSSMEMBER SUB-ASSY NO.3**

- (a) Remove the 4 bolts on the frame crossmember sub-assy No.3.
(b) Remove the 4 nuts, 4 bolts and frame crossmember sub-assy No.3.

16. DISCONNECT CONNECTOR

- (a) Tilt down the transmission.

NOTICE:

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

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

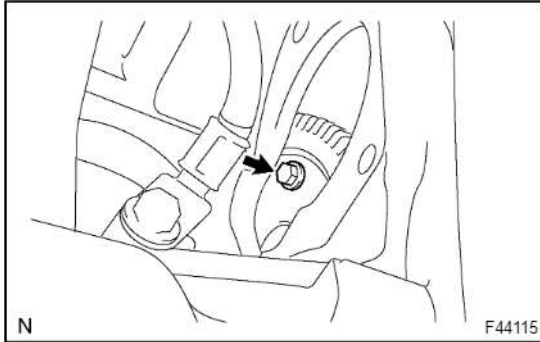
17. DISCONNECT WIRE HARNESS**18. REMOVE STARTER ASSY (See page 19-4)**

19. REMOVE MANIFOLD STAY

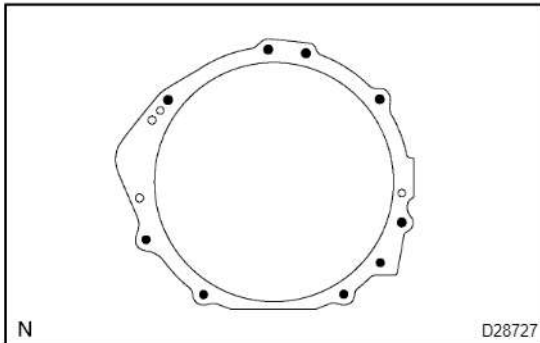
- (a) Remove the 3 bolts and manifold stay.

20. REMOVE MANIFOLD STAY NO.2

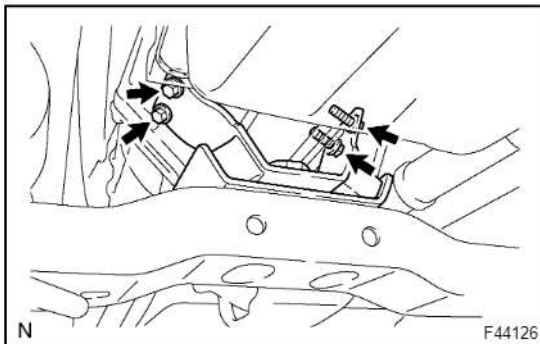
- (a) Remove the 3 bolts and manifold stay No.2.

**21. 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.



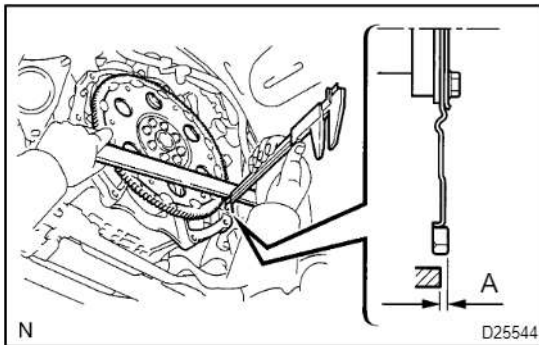
- (c) Remove the 9 bolts.
 (d) Separate and remove the automatic transmission.

**22. REMOVE ENGINE MOUNTING INSULATOR REAR NO.1**

- (a) Remove the 4 bolts and engine mounting insulator rear from the automatic transmission.

23. REMOVE TORQUE CONVERTER CLUTCH ASSY**24. INSPECT TORQUE CONVERTER CLUTCH ASSY (See page 40-43)****25. INSTALL TORQUE CONVERTER CLUTCH ASSY**

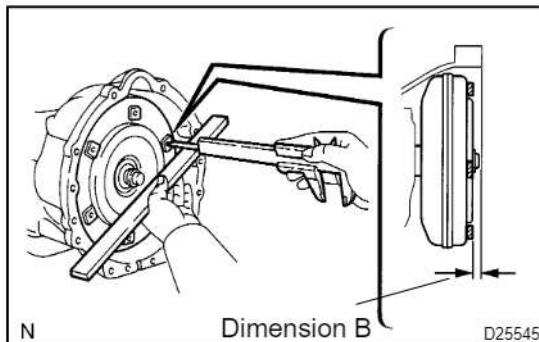
- (a) Install the torque converter clutch to the automatic transmission.



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

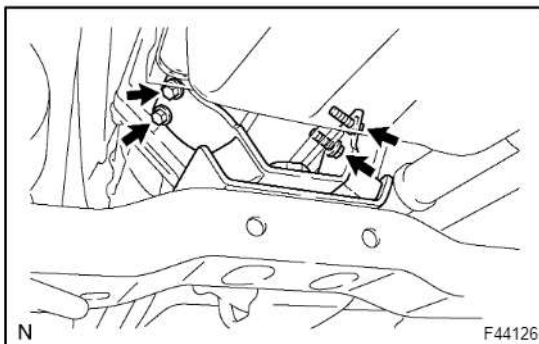
Standard:

A: 22.28 mm (0.8772 in.)



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

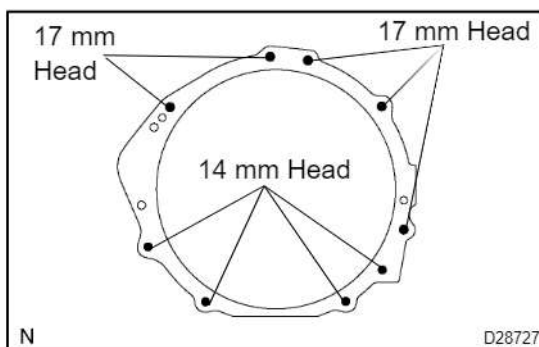
Standard: A + 1 mm (0.03937 in.) or more



26. INSTALL ENGINE MOUNTING INSULATOR REAR NO.1

- (a) Install the engine mounting insulator rear and 4 bolts to the automatic transmission.

Torque: 65 N·m (663 kgf·cm, 48 ft·lbf)



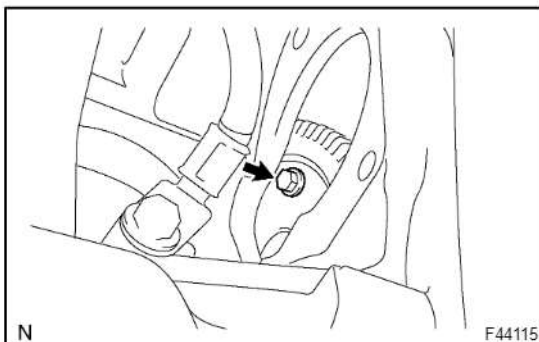
27. INSTALL AUTOMATIC TRANSMISSION ASSY

- (a) Install the automatic transmission and 9 bolts to the engine.

Torque:

17 mm head: 71 N·m (720 kgf·cm, 53 ft·lbf)

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



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

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

HINT:

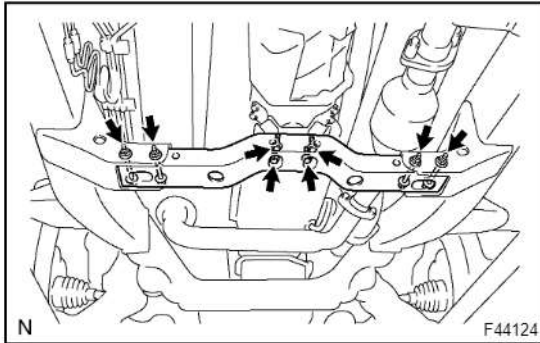
First install black colored bolt and then the 5 bolts.

28. INSTALL MANIFOLD STAY NO.2

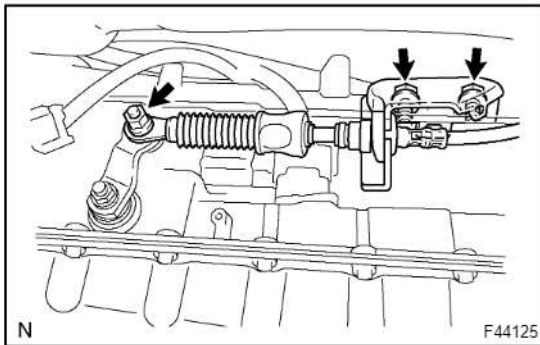
- (a) Install the manifold stay No.2 with 3 bolts.
Torque: 40 N·m (408 kgf·cm, 30 ft·lbf)

29. INSTALL MANIFOLD STAY

- (a) Install the manifold stay with 3 bolts.
Torque: 40 N·m (408 kgf·cm, 30 ft·lbf)

30. INSTALL STARTER ASSY (See page 19-4)**31. INSTALL WIRE HARNESS****32. INSTALL FRAME CROSSMEMBER SUB-ASSY NO.3**

- (a) Install the frame crossmember sub-assy No.3 with 4 bolts and 4 nuts.
Torque: 72 N·m (735 kgf·cm, 53 ft·lbf)
- (b) Install the frame crossmember sub-assy No.3 with 4 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

**33. INSTALL TRANSMISSION CONTROL CABLE BRACKET NO.1**

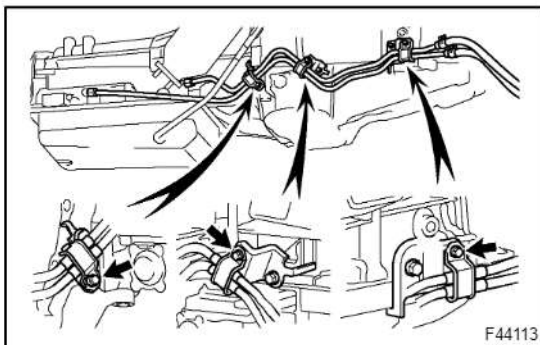
- (a) Install the transmission control cable bracket No.1 with 2 bolts.
Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)

34. CONNECT TRANSMISSION CONTROL CABLE ASSY

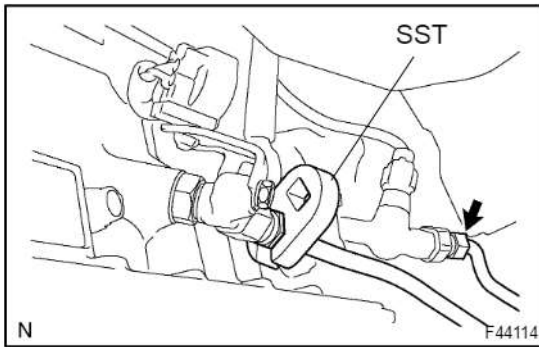
- (a) Connect the transmission control cable with lock plate.
 (b) Connect the transmission control cable with nut.
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

35. INSTALL OIL COOLER OUTLET TUBE NO.1

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



- (c) Install the 3 clamps and 3 bolts.
Torque: 5 N·m (50 kgf·cm, 43 in·lbf)



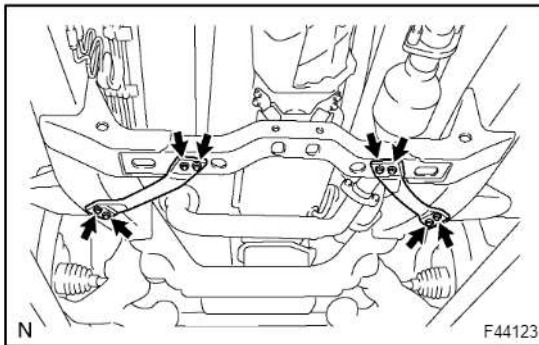
- (d) Using SST, tighten the oil cooler outlet tube No.1.
 SST 09023-12700
 Torque: 34 N·m (346 kgf·cm, 25 ft·lbf)

36. INSTALL OIL COOLER INLET TUBE NO.1

- (a) Using SST, tighten the oil cooler inlet tube No.1.
 SST 09023-12700
 Torque: 34 N·m (346 kgf·cm, 25 ft·lbf)

37. INSTALL TRANSMISSION OIL FILLER TUBE SUB-ASSY

- (a) Coat a new O-ring with ATF, and install them to the oil filler tube.
 (b) Install the oil filler tube and bolt to the automatic transmission.
 Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)
 (c) Install the ATF level gauge.



38. INSTALL FRONT SUSPENSION MEMBER BRACKET LH

- (a) Install the front suspension member bracket LH with 4 bolts.
 Torque: 33 N·m (336 kgf·cm, 24 ft·lbf)

39. INSTALL FRONT SUSPENSION MEMBER BRACKET

- (a) Install the front suspension member bracket with 4 bolts.
 Torque: 33 N·m (336 kgf·cm, 24 ft·lbf)

40. INSTALL PROPELLER SHAFT ASSY (See page 30-11)

41. ADJUST SHIFT LEVER POSITION (See page 40-76)

42. INSTALL EXHAUST PIPE ASSY (See page 15-2)

43. INSTALL OXYGEN SENSOR (See page 15-2)

44. INSTALL ENGINE UNDER COVER SUB-ASSY NO.1

Torque: 26 N·m (296 kgf·cm, 21 ft·lbf)

45. INSTALL ENGINE UNDER COVER ASSY REAR

Torque: 26 N·m (296 kgf·cm, 21 ft·lbf)

46. ADD AUTOMATIC TRANSMISSION FLUID

47. INSPECT AUTOMATIC TRANSMISSION FLUID (See page 40-3)

48. INSPECT SHIFT LEVER POSITION (See page 40-76)

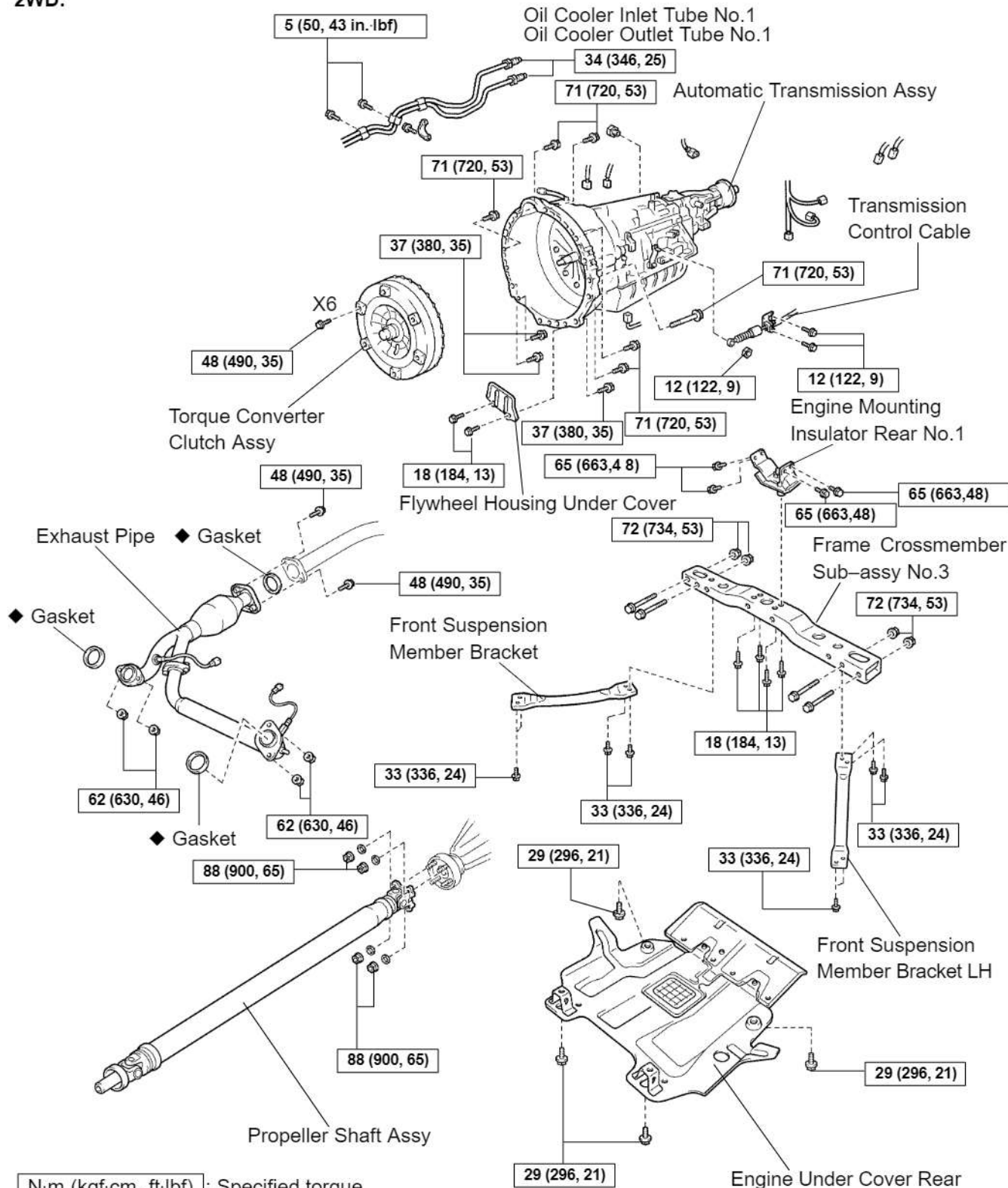
49. CHECK FOR EXHAUST GAS LEAKS

AUTOMATIC TRANSMISSION ASSY (A750E) (From August, 2003)

COMPONENTS

400US-02

2WD:



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

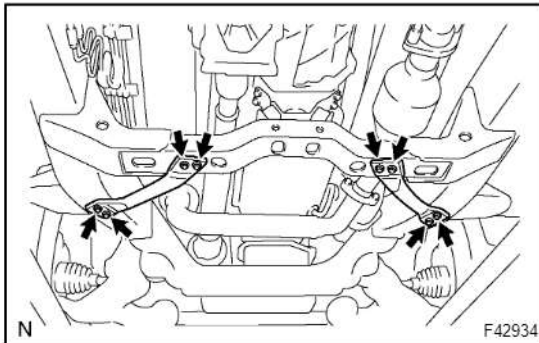
◆ Non-reusable part

G21810

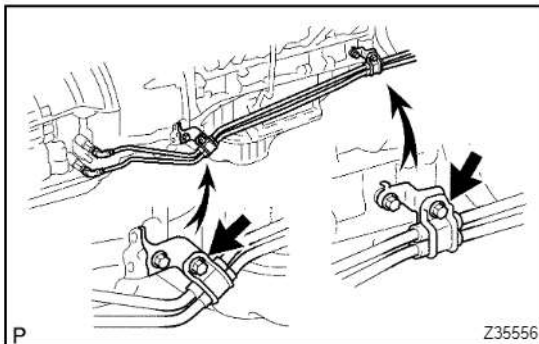
REPLACEMENT

1. REMOVE ENGINE UNDER COVER SUB-ASSY NO.1
2. REMOVE ENGINE UNDER COVER ASSY REAR
3. DISCONNECT OXYGEN SENSOR (SEE PAGE 15-5)
4. REMOVE EXHAUST PIPE ASSY (SEE PAGE 15-5)
5. REMOVE PROPELLER SHAFT ASSY (SEE PAGE 30-11)
6. DRAIN AUTOMATIC TRANSMISSION FLUID
 - (a) Remove the drain plug and gasket, and drain ATF.
 - (b) Install a new gasket and drain plug.

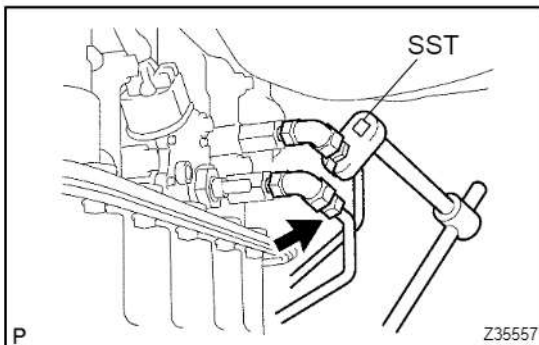
Torque: 28 N·m (285 kgf·cm, 21ft·lbf)



7. REMOVE FRONT SUSPENSION MEMBER BRACKET
 - (a) Remove the 4 bolts and front suspension member bracket.
8. REMOVE FRONT SUSPENSION MEMBER BRACKET LH
 - (a) Remove the 4 bolts and front suspension member bracket LH.

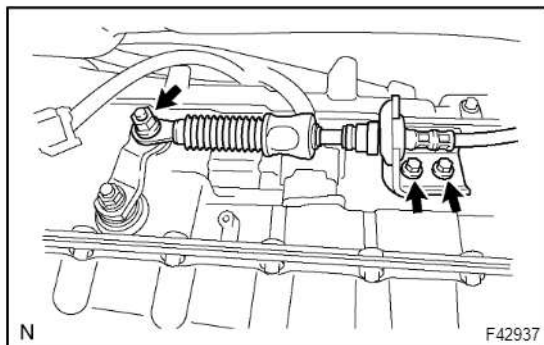


9. DISCONNECT OIL COOLER OUTLET TUBE NO.1
 - (a) Remove the 2 bolts and 2 clamps.



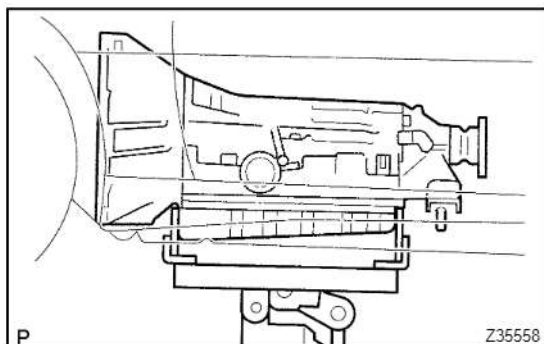
- (b) Using SST, disconnect the oil cooler outlet tube No.1.
SST 09023-12700

10. REMOVE OIL COOLER INLET TUBE NO.1
 - (a) Using SST, disconnect the oil cooler inlet tube No.1.
SST 09023-12700



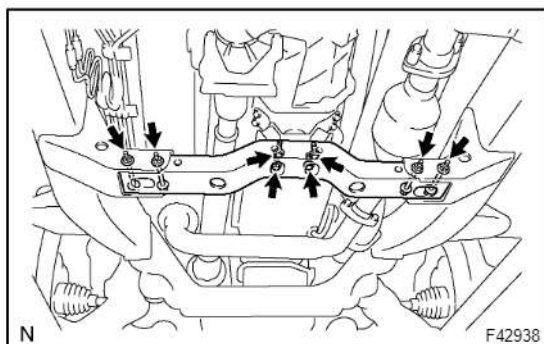
11. DISCONNECT TRANSMISSION CONTROL CABLE ASSY

- Remove the nut and disconnect the transmission control cable.
- Remove the 2 bolts and disconnect the transmission control cable.



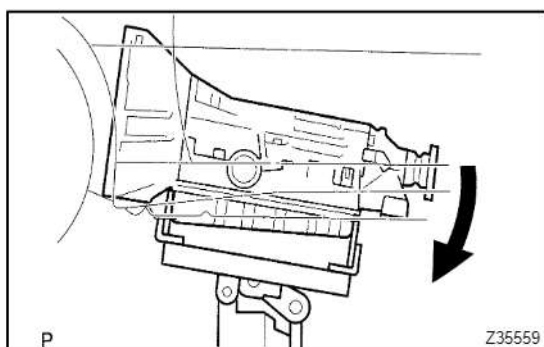
12. SUPPORT AUTOMATIC TRANSMISSION ASSY

- Support the automatic transmission assy with a transmission jack.



13. REMOVE FRAME CROSSMEMBER SUB-ASSY NO.3

- Remove the 4 bolts on the frame crossmember sub-assy No.3.
- Remove the 4 nuts, 4 bolts and frame crossmember sub-assy No.3.



14. DISCONNECT CONNECTOR

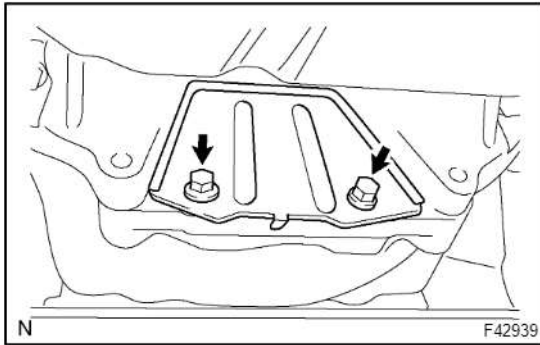
- Tilt down the transmission.

NOTICE:

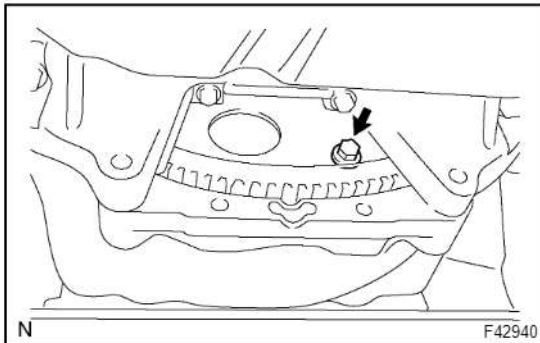
Take care so that the cooling fan does not come in contact with the fan shroud.

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

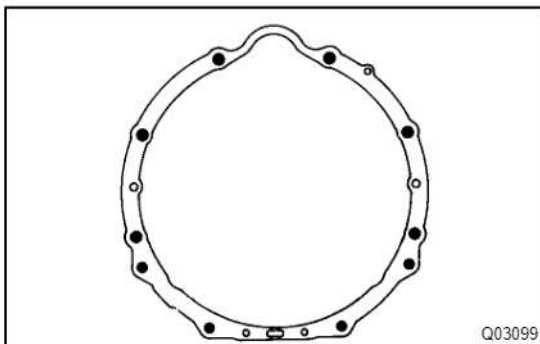
15. DISCONNECT WIRE HARNESS

**16. REMOVE FLYWHEEL HOUSING UNDER COVER**

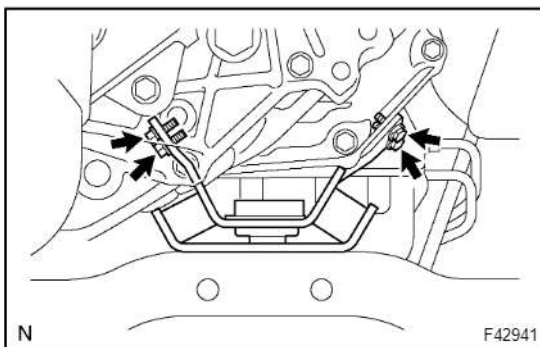
- (a) Remove the 2 bolts and flywheel housing under cover.

**17. 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.



- (c) Remove the 10 bolts.
 (d) Separate and remove the automatic transmission.

**18. REMOVE ENGINE MOUNTING INSULATOR REAR NO.1**

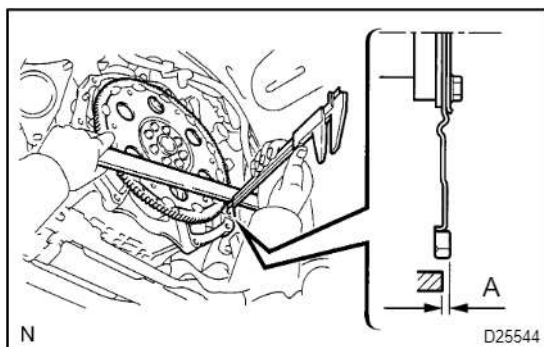
- (a) Remove the 4 bolts and engine mounting insulator rear from the automatic transmission.

19. REMOVE TORQUE CONVERTER CLUTCH ASSY**20. INSPECT TORQUE CONVERTER CLUTCH ASSY (SEE PAGE 40-45)**

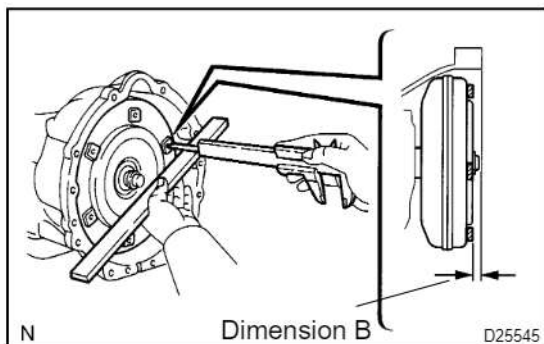
SST 09350-32014 (09351-32020)

21. INSTALL TORQUE CONVERTER CLUTCH ASSY

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

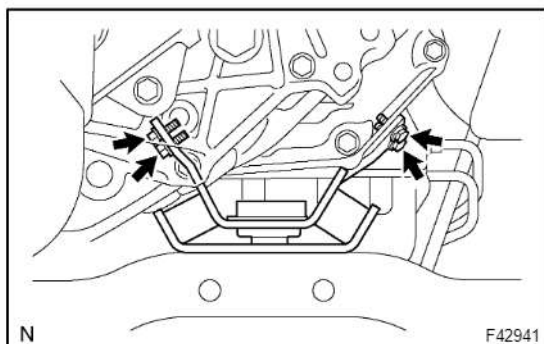


- (b) Using calipers and a straight edge, measure dimension A between the engine and the end surface of the drive plate.



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

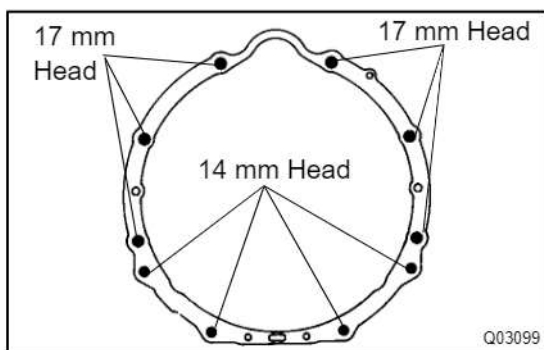
Standard: A + 1 mm or more



22. INSTALL ENGINE MOUNTING INSULATOR REAR NO.1

- (a) Install the engine mounting insulator rear and 4 bolts to the automatic transmission.

Torque: 65 N·m (663 kgf·cm, 48 ft·lbf)



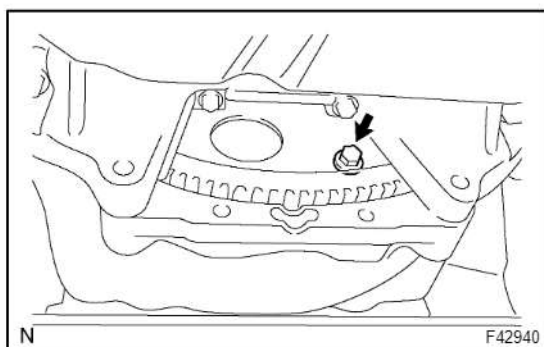
23. INSTALL AUTOMATIC TRANSMISSION ASSY

- (a) Install the automatic transmission and 10 bolts to the engine.

Torque:

17 mm head: 71 N·m (720 kgf·cm, 53 ft·lbf)

14 mm head: 37 N·m (380 kgf·cm, 35 ft·lbf)

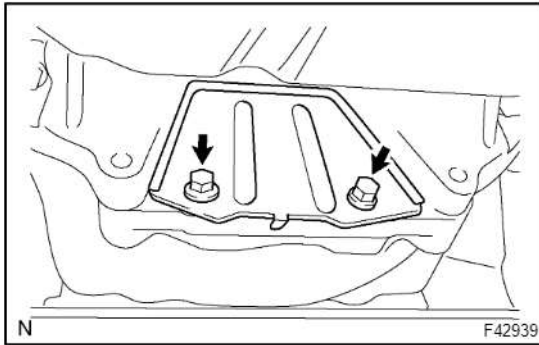


- (b) Install the 6 torque converter clutch mounting bolts.

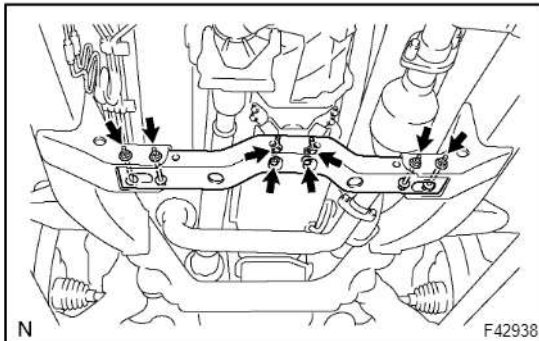
Torque: 48 N·m (490 kgf·cm, 35 ft·lbf)

HINT:

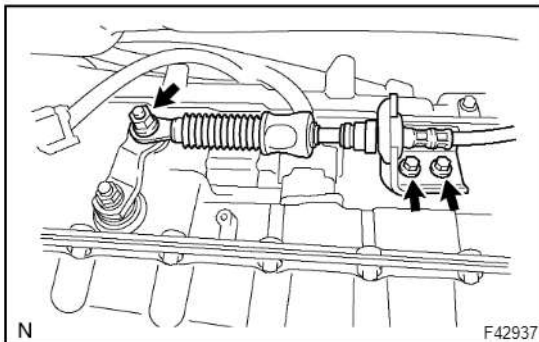
First install black colored bolt and then the 5 bolts.

**24. INSTALL FLYWHEEL HOUSING UNDER COVER**

- (a) Install the flywheel housing under cover and 2 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

25. INSTALL WIRE HARNESS**26. INSTALL FRAME CROSSMEMBER SUB-ASSY NO.3**

- (a) Install the frame crossmember sub-assy No.3 with 4 bolts and 4 nuts.
Torque: 72 N·m (734 kgf·cm, 53 ft·lbf)
- (b) Install the frame crossmember sub-assy No.3 with 4 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

**27. INSTALL TRANSMISSION CONTROL CABLE BRACKET NO.1**

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

Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

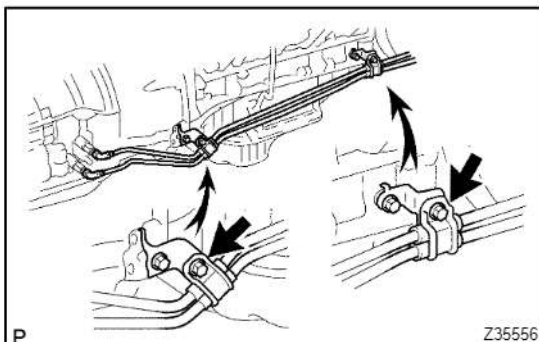
28. CONNECT TRANSMISSION CONTROL CABLE ASSY

- (a) Connect the transmission control cable with nut.

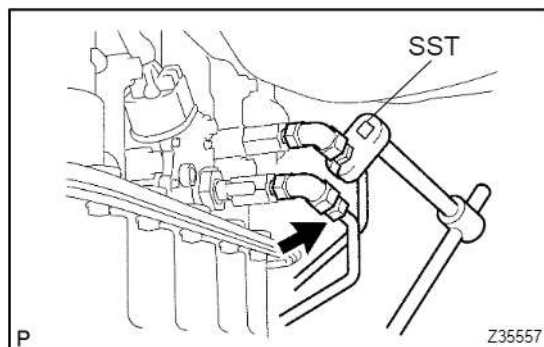
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

29. INSTALL OIL COOLER OUTLET TUBE NO.1

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



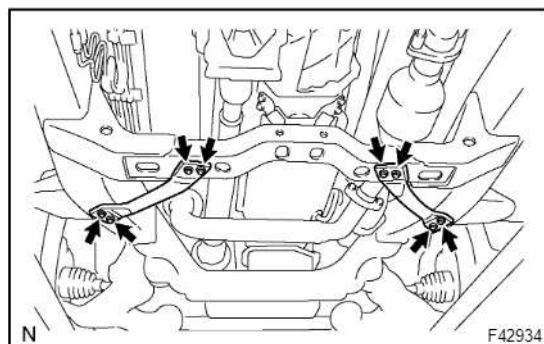
- (c) Install the 2 clamps and 2 bolts.
Torque: 5 N·m (50 kgf·cm, 43 in·lbf)



- (d) Using SST, tighten the oil cooler outlet tube No.1.
SST 09023-12700
Torque: 34 N·m (346 kgf·cm, 25 ft·lbf)

30. INSTALL OIL COOLER INLET TUBE NO.1

- (a) Using SST, tighten the oil cooler inlet tube No.1.
SST 09023-12700
Torque: 34 N·m (346 kgf·cm, 25 ft·lbf)



31. INSTALL FRONT SUSPENSION MEMBER BRACKET LH

- (a) Install the front suspension member bracket LH with 4 bolts.

Torque: 33 N·m (336 kgf·cm, 24 ft·lbf)

32. INSTALL FRONT SUSPENSION MEMBER BRACKET

- (a) Install the front suspension member bracket with 4 bolts.

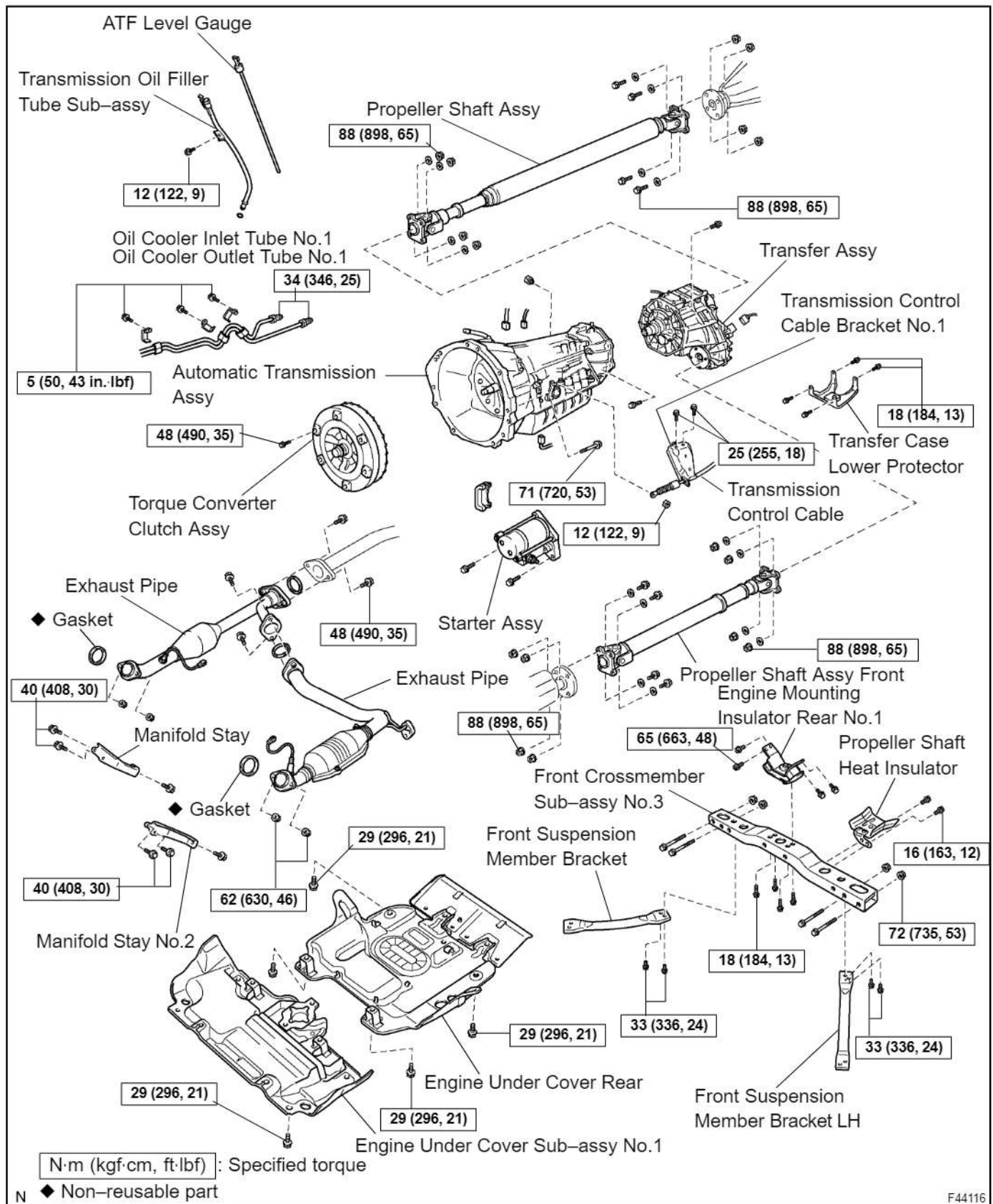
Torque: 33 N·m (336 kgf·cm, 24 ft·lbf)

33. INSTALL PROPELLER SHAFT ASSY (SEE PAGE 30-11)
34. ADJUST SHIFT LEVER POSITION (SEE PAGE 40-76)
35. INSTALL EXHAUST PIPE ASSY (SEE PAGE 15-5)
36. INSTALL OXYGEN SENSOR (SEE PAGE 15-5)
37. INSTALL ENGINE UNDER COVER SUB-ASSY NO.1
38. INSTALL ENGINE UNDER COVER ASSY REAR
39. ADD AUTOMATIC TRANSMISSION FLUID
40. ADJUST AUTOMATIC TRANSMISSION FLUID (SEE PAGE 40-4)
41. INSPECT SHIFT LEVER POSITION (SEE PAGE 40-76)
42. CHECK FOR EXHAUST GAS LEAKS (SEE PAGE 15-5)

AUTOMATIC TRANSMISSION ASSY (A340F)

COMPONENTS

400YP-02

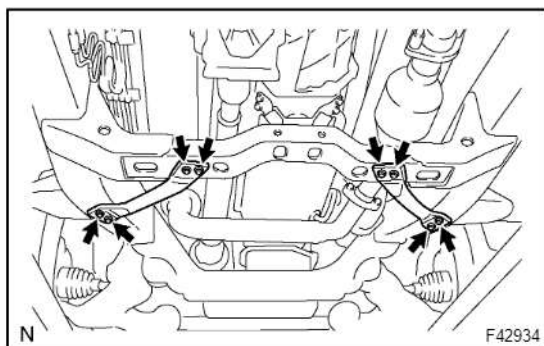


F44116

REPLACEMENT

1. REMOVE ENGINE UNDER COVER SUB-ASSY NO.1
2. REMOVE ENGINE UNDER COVER ASSY REAR
3. DISCONNECT OXYGEN SENSOR (See page 15-2)
4. REMOVE EXHAUST PIPE ASSY (See page 15-2)
5. REMOVE PROPELLER SHAFT ASSY FRONT (See page 30-4)
6. REMOVE PROPELLER SHAFT ASSY (See page 30-11)
7. DRAIN AUTOMATIC TRANSMISSION FLUID
 - (a) Remove the drain plug, gasket and drain ATF.
 - (b) Install a new gasket and drain plug.

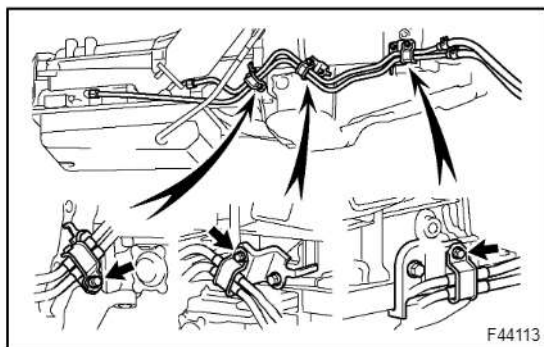
Torque: 20 N·m (205 kgf·cm, 15 ft·lbf)
8. REMOVE PROPELLER SHAFT HEAT INSULATOR
 - (a) Remove the 2 bolts and propeller shaft heat insulator.



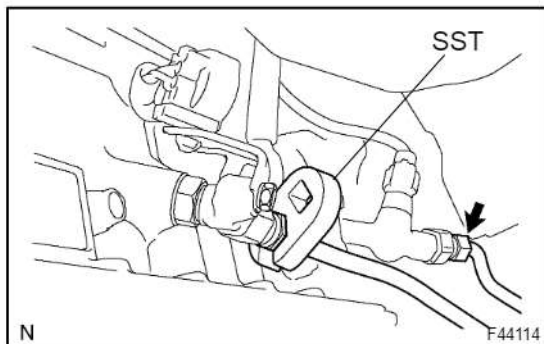
9. REMOVE FRONT SUSPENSION MEMBER BRACKET
 - (a) Remove the 4 bolts and front suspension member bracket.
10. REMOVE FRONT SUSPENSION MEMBER BRACKET LH
 - (a) Remove the 4 bolts and front suspension member bracket LH.

11. REMOVE TRANSMISSION OIL FILLER TUBE SUB-ASSY

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



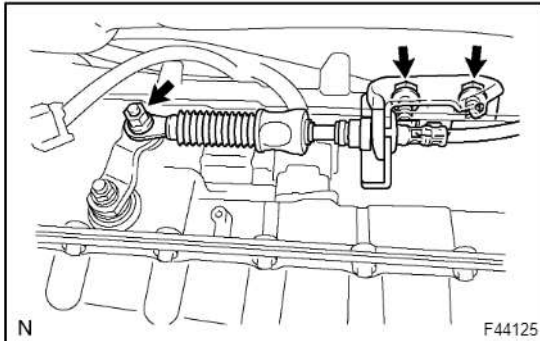
12. DISCONNECT OIL COOLER OUTLET TUBE NO.1
 - (a) Remove the 3 bolts and 3 clamps.



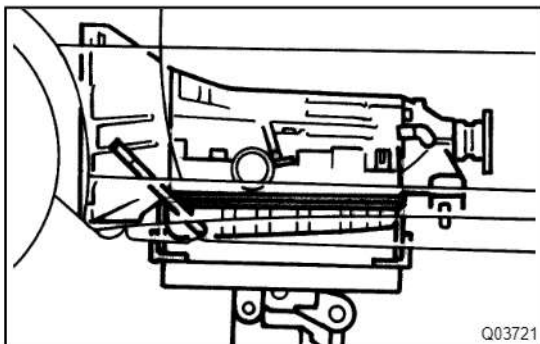
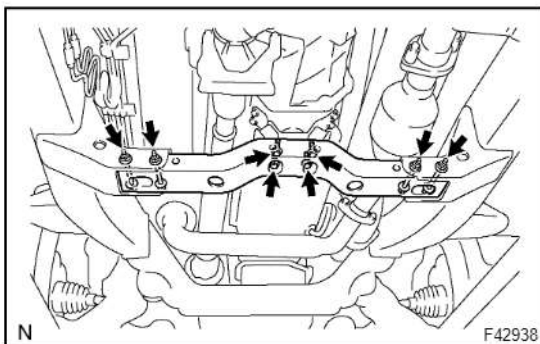
- (b) Using SST, disconnect the oil cooler outlet tube No.1.
SST 09023-12700

13. REMOVE OIL COOLER INLET TUBE NO.1

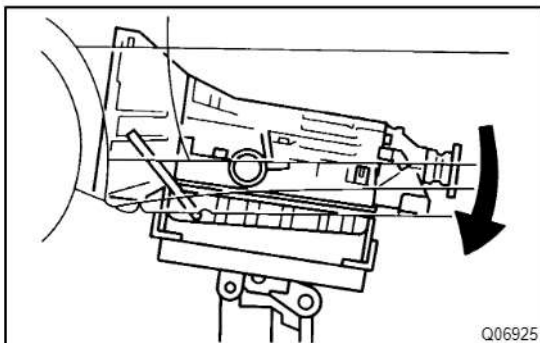
- (a) Using SST, disconnect the oil cooler inlet tube No.1.
SST 09023-12700

**14. DISCONNECT TRANSMISSION CONTROL CABLE ASSY**

- (a) Remove the nut and disconnect the transmission control cable.
(b) Remove the lock plate and disconnect the transmission control cable.

15. REMOVE TRANSMISSION CONTROL CABLE BRACKET NO.1**16. SUPPORT AUTOMATIC TRANSMISSION ASSY****17. REMOVE FRAME CROSSMEMBER SUB-ASSY NO.3**

- (a) Remove the 4 bolts on the frame crossmember sub-assy No.3.
(b) Remove the 4 nuts, 4 bolts and frame crossmember sub-assy No.3.

**18. DISCONNECT CONNECTOR**

- (a) Tilt down the transmission.

NOTICE:

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

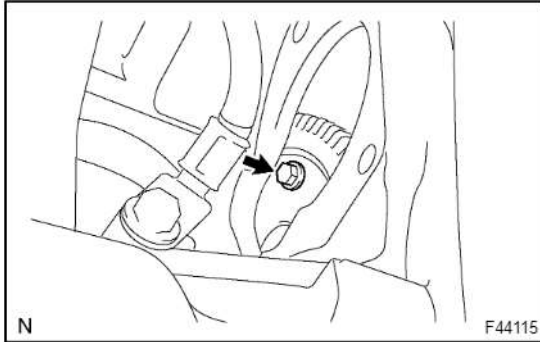
- (b) Disconnect the park/neutral position switch connector.
(c) Disconnect the transmission wire connector.
(d) Disconnect the 2 speed sensor connectors.

19. DISCONNECT WIRE HARNESS**20. REMOVE STARTER ASSY (See page 19-5)****21. REMOVE MANIFOLD STAY**

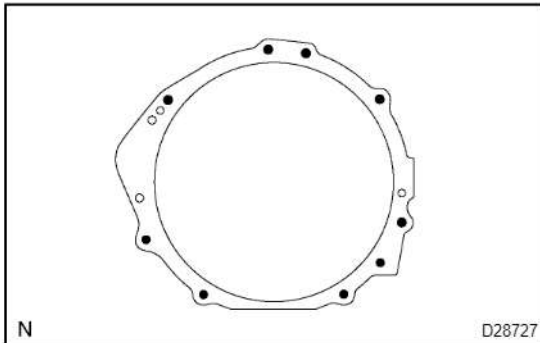
- (a) Remove the 3 bolts and manifold stay.

22. REMOVE MANIFOLD STAY NO.2

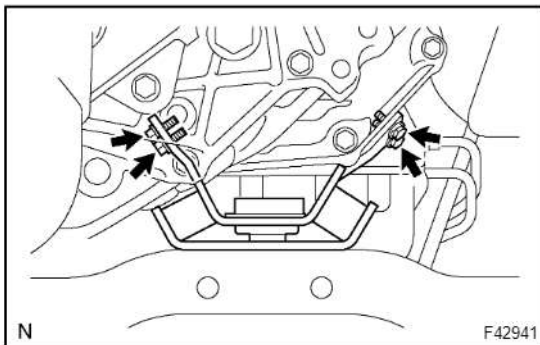
- (a) Remove the 3 bolts and manifold stay No.2.

23. SEPARATE FRONT DIFFERENTIAL ASSY (See page 29-8)**24. 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.

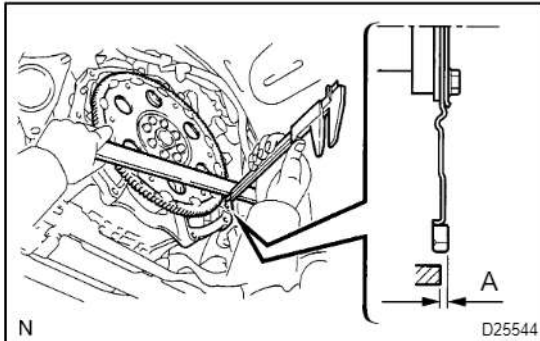


- (c) Remove the 9 bolts.
 (d) Separate and remove the automatic transmission.

25. REMOVE TRANSFER ASSY (See page 31-46)**26. REMOVE ENGINE MOUNTING INSULATOR REAR NO.1****27. REMOVE TORQUE CONVERTER CLUTCH ASSY****28. INSPECT TORQUE CONVERTER CLUTCH ASSY (See page 40-43)**

29. INSTALL TORQUE CONVERTER CLUTCH ASSY

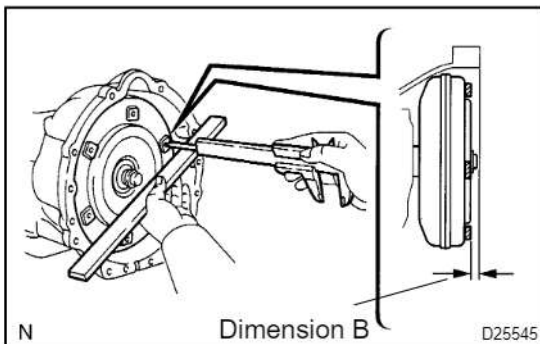
- (a) Install the torque converter clutch to the automatic transmission.



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

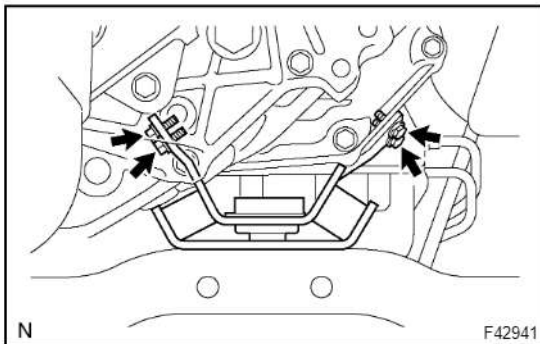
Standard:

A: 22.28 mm (0.8772 in.)



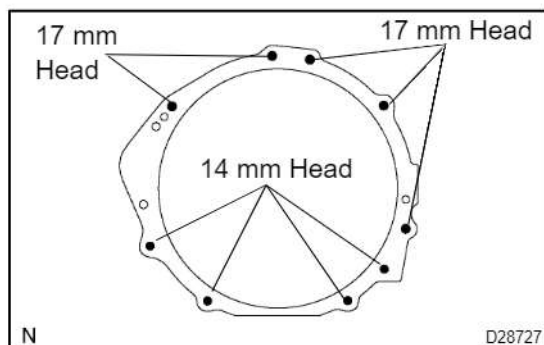
- (c) Using calipers and a straight edge, measure the dimension B shown in the illustration and check that B is greater than A measured in (b).

Standard: A + 1 mm (0.03937 in.) or more

**30. INSTALL ENGINE MOUNTING INSULATOR REAR NO.1**

- (a) Install the engine mounting insulator rear and 4 bolts to the automatic transmission.

Torque: 65 N·m (663 kgf·cm, 48 ft·lbf)

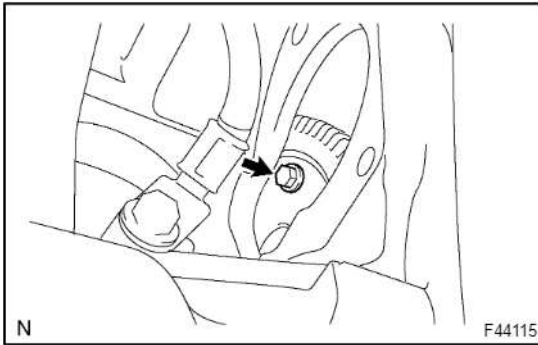
31. INSTALL TRANSFER ASSY (See page 31-46)**32. INSTALL AUTOMATIC TRANSMISSION ASSY**

- (a) Install the automatic transmission and 9 bolts to the engine.

Torque:

17 mm head: 71 N·m (720 kgf·cm, 53 ft·lbf)

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



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

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

HINT:

First install black colored bolt and then the 5 bolts.

33. CONNECT FRONT DIFFERENTIAL ASSY (See page 29-8)

34. INSTALL MANIFOLD STAY NO.2

- (a) Install the manifold stay No.2 with 3 bolts.

Torque: 40 N·m (408 kgf·cm, 30 ft·lbf)

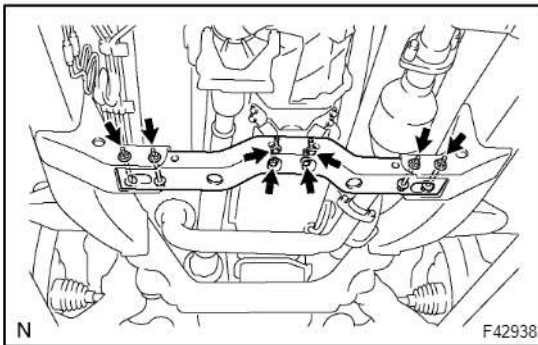
35. INSTALL MANIFOLD STAY

- (a) Install the manifold stay with 3 bolts.

Torque: 40 N·m (408 kgf·cm, 30 ft·lbf)

36. INSTALL STARTER ASSY (See page 19-5)

37. INSTALL WIRE HARNESS



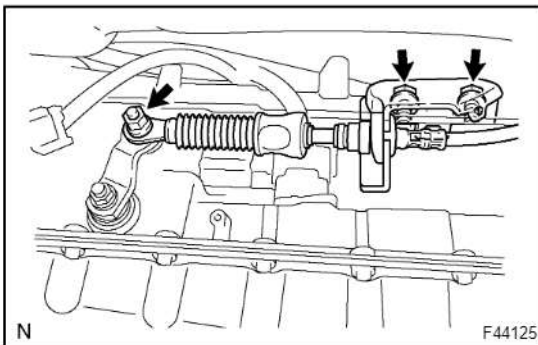
38. INSTALL FRAME CROSSMEMBER SUB-ASSY NO.3

- (a) Install the frame crossmember sub-assy No.3 with 4 bolts and 4 nuts.

Torque: 72 N·m (735 kgf·cm, 53 ft·lbf)

- (b) Install the frame crossmember sub-assy No.3 with 4 bolts.

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



39. INSTALL TRANSMISSION CONTROL CABLE BRACKET NO.1

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

Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)

40. CONNECT TRANSMISSION CONTROL CABLE ASSY

- (a) Connect the transmission control cable with lock plate.

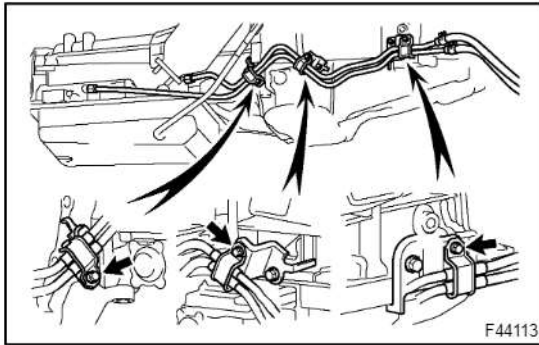
- (b) Connect the transmission control cable with nut.

Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

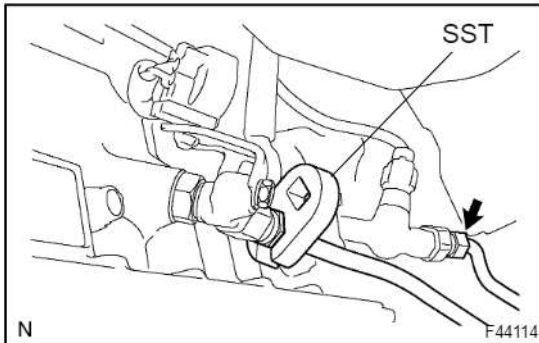
41. INSTALL OIL COOLER OUTLET TUBE NO.1

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

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



- (c) Install the 3 clamps and 3 bolts.
Torque: 5 N·m (50 kgf·cm, 43 in·lbf)



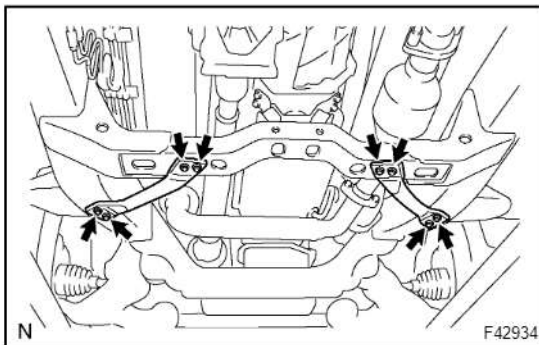
- (d) Using SST, tighten the oil cooler outlet tube No.1.
SST 09023-12700
Torque: 34 N·m (346 kgf·cm, 25 ft·lbf)

42. INSTALL OIL COOLER INLET TUBE NO.1

- (a) Using SST, tighten the oil cooler inlet tube No.1.
SST 09023-12700
Torque: 34 N·m (346 kgf·cm, 25 ft·lbf)

43. INSTALL TRANSMISSION OIL FILLER TUBE SUB-ASSY

- (a) Coat a new O-ring with ATF, and install them to the oil filler tube.
(b) Install the oil filler tube and bolt to the automatic transmission.
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)
(c) Install the ATF level gauge.



44. INSTALL FRONT SUSPENSION MEMBER BRACKET LH

- (a) Install the front suspension member bracket LH with 4 bolts.

Torque: 33 N·m (336 kgf·cm, 24 ft·lbf)

45. INSTALL FRONT SUSPENSION MEMBER BRACKET

- (a) Install the front suspension member bracket with 4 bolts.

Torque: 33 N·m (336 kgf·cm, 24 ft·lbf)

46. INSTALL PROPELLER SHAFT HEAT INSULATOR

- (a) Install the propeller shaft heat insulator with 2 bolts.
Torque: 16 N·m (163 kgf·cm, 12 ft·lbf)

47. INSTALL PROPELLER SHAFT ASSY (See page 30-11)

48. INSTALL PROPELLER SHAFT ASSY FRONT (See page 30-4)

49. ADJUST SHIFT LEVER POSITION (See page 40-76)

50. INSTALL EXHAUST PIPE ASSY (See page 15-2)

51. INSTALL OXYGEN SENSOR (See page 15-2)

52. INSTALL ENGINE UNDER COVER SUB-ASSY NO.1

Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)

53. **INSTALL ENGINE UNDER COVER ASSY REAR**
Torque: 29 N·m (296 kgf·cm, 21 ft·lbf)
54. **ADD AUTOMATIC TRANSMISSION FLUID**
55. **INSPECT AUTOMATIC TRANSMISSION FLUID** (See page 40-3)
56. **INSPECT SHIFT LEVER POSITION** (See page 40-76)
57. **CHECK FOR EXHAUST GAS LEAKS**

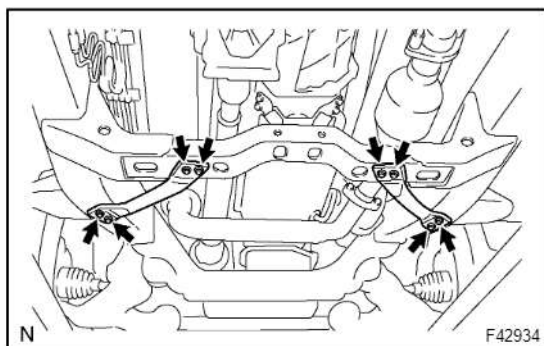
400UU-03

cardiagn.com

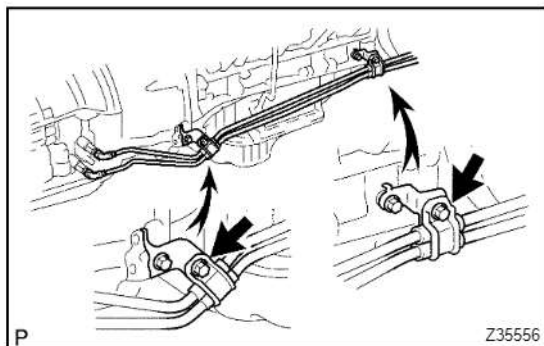
REPLACEMENT

1. REMOVE ENGINE UNDER COVER SUB-ASSY NO.1
2. REMOVE ENGINE UNDER COVER ASSY REAR
3. DISCONNECT OXYGEN SENSOR (SEE PAGE 15-5)
4. REMOVE EXHAUST PIPE ASSY (SEE PAGE 15-5)
5. REMOVE PROPELLER SHAFT ASSY FRONT (SEE PAGE 30-4)
6. REMOVE PROPELLER SHAFT ASSY (SEE PAGE 30-11)
7. DRAIN AUTOMATIC TRANSMISSION FLUID
 - (a) Remove the drain plug and gasket, and drain ATF.
 - (b) Install a new gasket and drain plug.

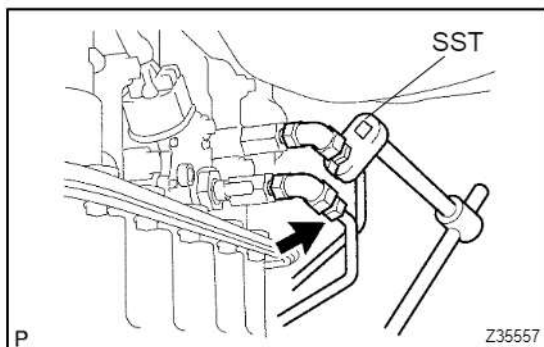
Torque: 28 N·m (285 kgf·cm, 21ft·lbf)



8. REMOVE FRONT SUSPENSION MEMBER BRACKET
 - (a) Remove the 4 bolts and front suspension member bracket.
9. REMOVE FRONT SUSPENSION MEMBER BRACKET LH
 - (a) Remove the 4 bolts and front suspension member bracket LH.

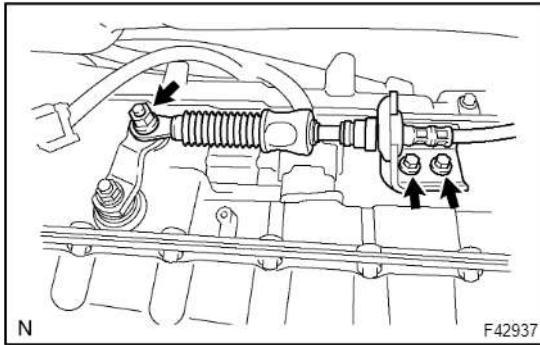


10. DISCONNECT OIL COOLER OUTLET TUBE NO.1
 - (a) Remove the 2 bolts and 2 clamps.



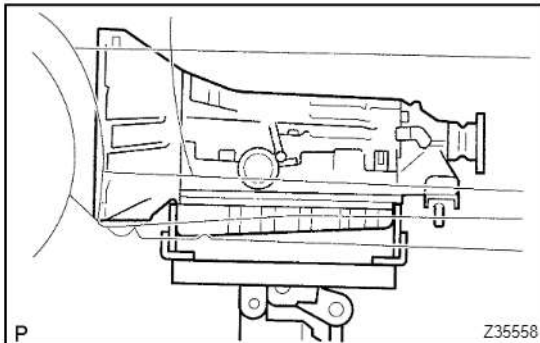
- (b) Using SST, disconnect the oil cooler outlet tube No.1.
SST 09023-12700

11. REMOVE OIL COOLER INLET TUBE NO.1
 - (a) Using SST, disconnect the oil cooler inlet tube No.1.
SST 09023-12700



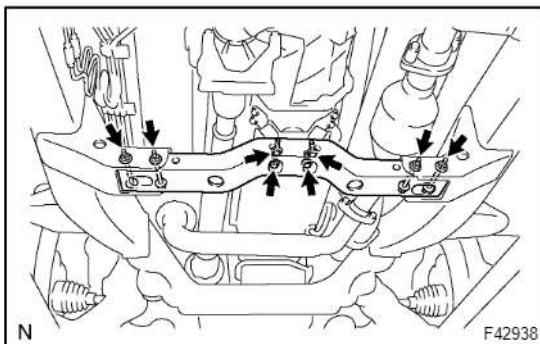
12. DISCONNECT TRANSMISSION CONTROL CABLE ASSY

- (a) Remove the nut and disconnect the transmission control cable.
- (b) Remove the 2 bolts and disconnect the transmission control cable.



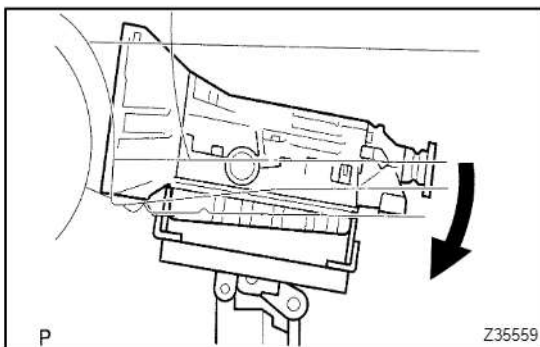
13. SUPPORT AUTOMATIC TRANSMISSION ASSY

- (a) Support the automatic transmission assy with a transmission jack.



14. REMOVE FRAME CROSSMEMBER SUB-ASSY NO.3

- (a) Remove the 4 bolts on the frame crossmember sub-assy No.3.
- (b) Remove the 4 nuts, 4 bolts and frame crossmember sub-assy No.3.



15. DISCONNECT CONNECTOR

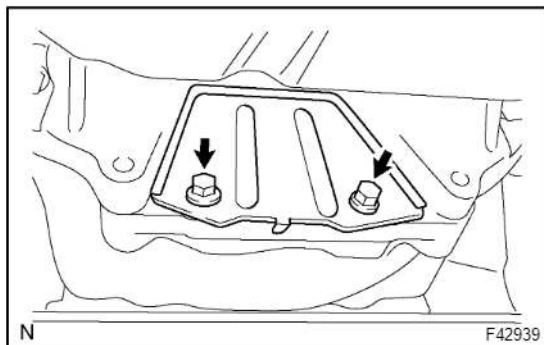
- (a) Tilt down the transmission.

NOTICE:

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

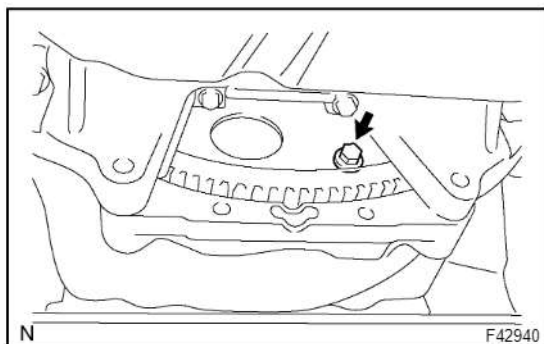
- (b) Disconnect the park/neutral position switch connector.
- (c) Disconnect the transmission wire connector.
- (d) Disconnect the 2 speed sensor connectors.

16. DISCONNECT WIRE HARNESS



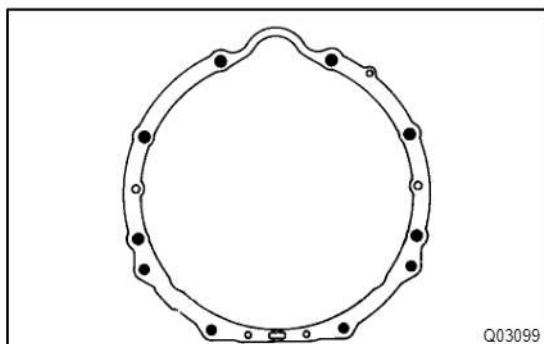
17. REMOVE FLYWHEEL HOUSING UNDER COVER

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



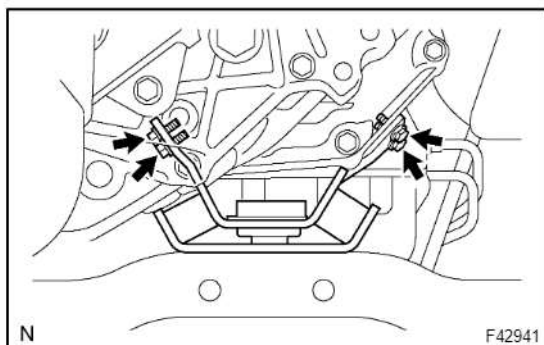
18. REMOVE AUTOMATIC TRANSMISSION ASSY

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



- (c) Remove the 10 bolts.
- (d) Separate and remove the automatic transmission.

19. REMOVE TRANSFER ASSY (SEE PAGE 31-46)



20. REMOVE ENGINE MOUNTING INSULATOR REAR NO.1

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

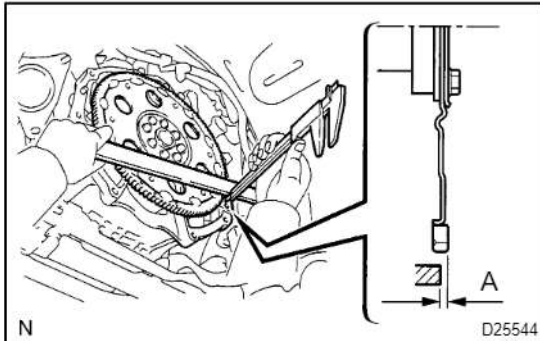
21. REMOVE TORQUE CONVERTER CLUTCH ASSY

22. INSPECT TORQUE CONVERTER CLUTCH ASSY (SEE PAGE 40-45)

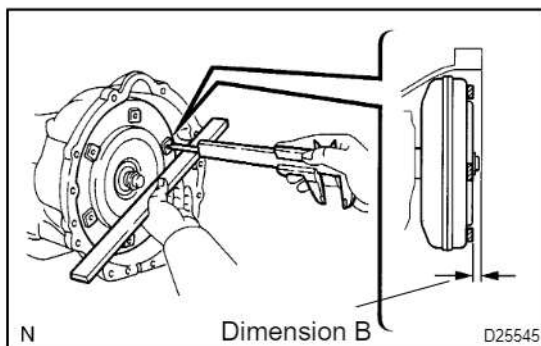
SST 09350-32014 (09351-32020)

23. INSTALL TORQUE CONVERTER CLUTCH ASSY

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

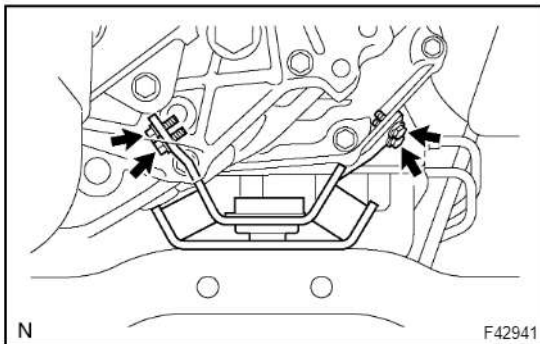


- (b) Using calipers and a straight edge, measure dimension A between the engine and the end surface of the drive plate.



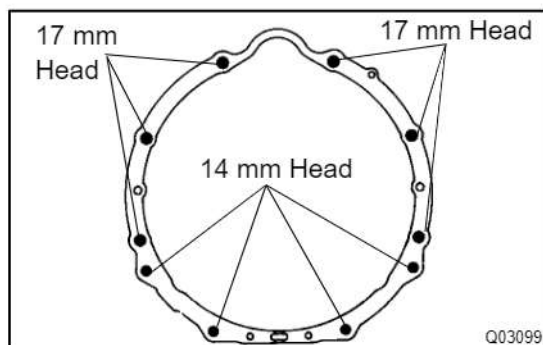
- (c) Using calipers and a straight edge, measure the dimension B shown in the illustration and check that B is greater than A measured in (b).

Standard: A + 1 mm or more

**24. INSTALL ENGINE MOUNTING INSULATOR REAR NO.1**

- (a) Install the engine mounting insulator rear and 4 bolts to the automatic transmission.

Torque: 65 N·m (663 kgf·cm, 48 ft·lbf)

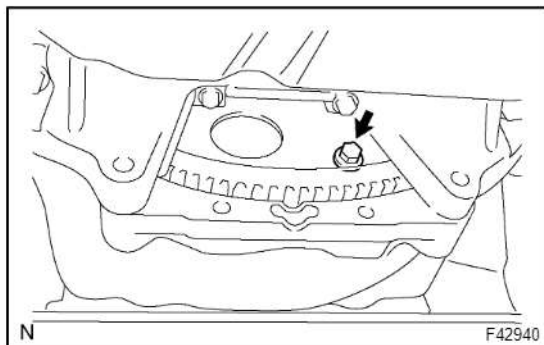
25. INSTALL TRANSFER ASSY (SEE PAGE 31-46)**26. INSTALL AUTOMATIC TRANSMISSION ASSY**

- (a) Install the automatic transmission and 10 bolts to the engine.

Torque:

17 mm head: 71 N·m (720 kgf·cm, 53 ft·lbf)

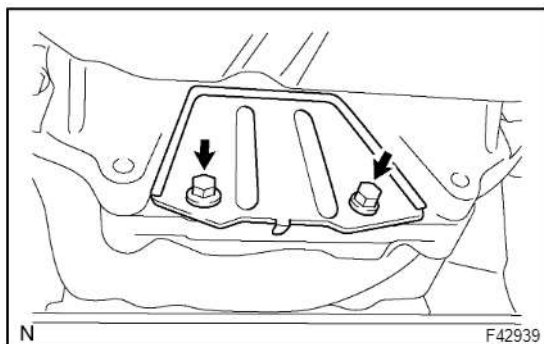
14 mm head: 37 N·m (380 kgf·cm, 35 ft·lbf)



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

HINT:

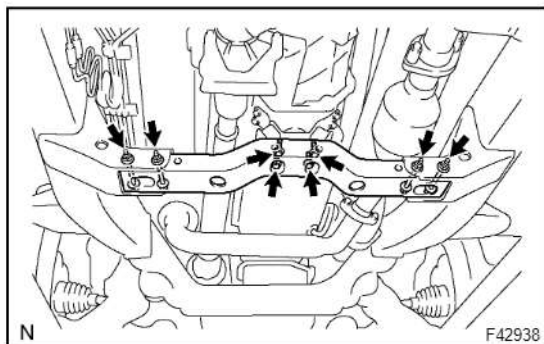
First install black colored bolt and then the 5 bolts.



27. INSTALL FLYWHEEL HOUSING UNDER COVER

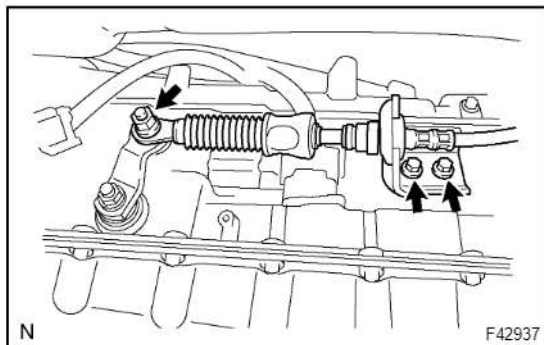
- (a) Install the flywheel housing under cover and 2 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)

28. INSTALL WIRE HARNESS



29. INSTALL FRAME CROSSMEMBER SUB-ASSY NO.3

- (a) Install the frame crossmember sub-assy No.3 with 4 bolts and 4 nuts.
Torque: 72 N·m (734 kgf·cm, 53 ft·lbf)
 (b) Install the frame crossmember sub-assy No.3 with 4 bolts.
Torque: 18 N·m (184 kgf·cm, 13 ft·lbf)



30. INSTALL TRANSMISSION CONTROL CABLE BRACKET NO.1

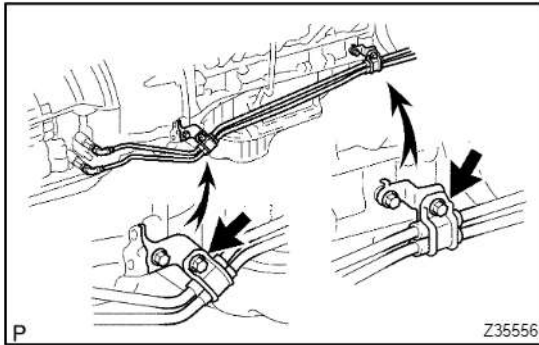
- (a) Install the transmission control cable bracket No.1 with 2 bolts.
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

31. CONNECT TRANSMISSION CONTROL CABLE ASSY

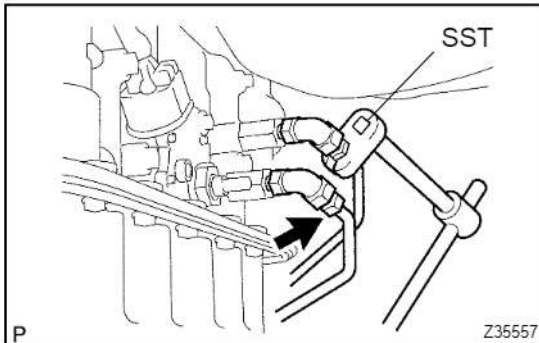
- (a) Connect the transmission control cable with nut.
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)

32. INSTALL OIL COOLER OUTLET TUBE NO.1

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



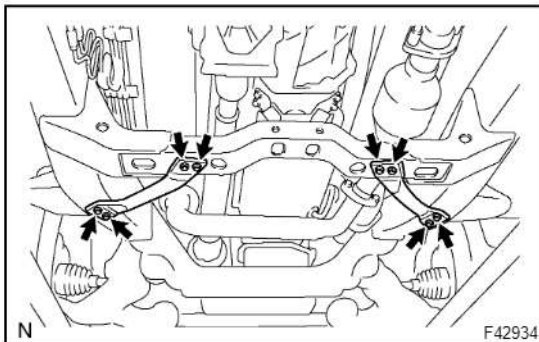
- (c) Install the 2 clamps and 2 bolts.
Torque: 5 N·m (50 kgf·cm, 43 in·lbf)



- (d) Using SST, tighten the oil cooler outlet tube No.1.
SST 09023-12700
Torque: 34 N·m (346 kgf·cm, 25 ft·lbf)

33. INSTALL OIL COOLER INLET TUBE NO.1

- (a) Using SST, tighten the oil cooler inlet tube No.1.
SST 09023-12700
Torque: 34 N·m (346 kgf·cm, 25 ft·lbf)



34. INSTALL FRONT SUSPENSION MEMBER BRACKET LH

- (a) Install the front suspension member bracket LH with 4 bolts.

Torque: 33 N·m (336 kgf·cm, 24 ft·lbf)

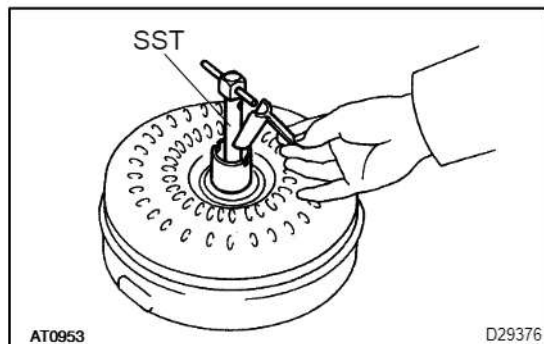
35. INSTALL FRONT SUSPENSION MEMBER BRACKET

- (a) Install the front suspension member bracket with 4 bolts.
Torque: 33 N·m (336 kgf·cm, 24 ft·lbf)

36. INSTALL PROPELLER SHAFT ASSY (SEE PAGE 30-11)
37. INSTALL PROPELLER SHAFT ASSY FRONT (SEE PAGE 30-4)
38. ADJUST SHIFT LEVER POSITION (SEE PAGE 40-76)
39. INSTALL EXHAUST PIPE ASSY (SEE PAGE 15-5)
40. INSTALL OXYGEN SENSOR (SEE PAGE 15-5)
41. INSTALL ENGINE UNDER COVER SUB-ASSY NO.1
42. INSTALL ENGINE UNDER COVER ASSY REAR
43. ADD AUTOMATIC TRANSMISSION FLUID
44. ADJUST AUTOMATIC TRANSMISSION FLUID (SEE PAGE 40-4)
45. INSPECT SHIFT LEVER POSITION (SEE PAGE 40-76)
46. CHECK FOR EXHAUST GAS LEAKS (SEE PAGE 15-5)

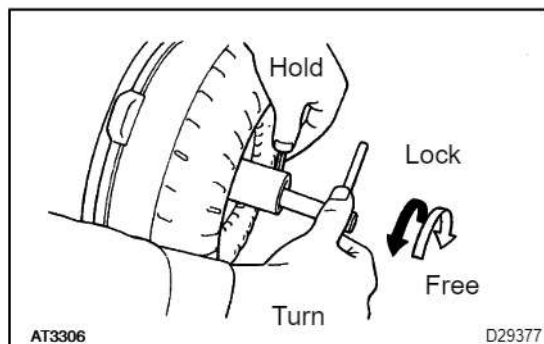
TORQUE CONVERTER CLUTCH AND DRIVE PLATE (A340E/A340F) INSPECTION

4016N-01



1. INSPECT TORQUE CONVERTER CLUTCH ASSY

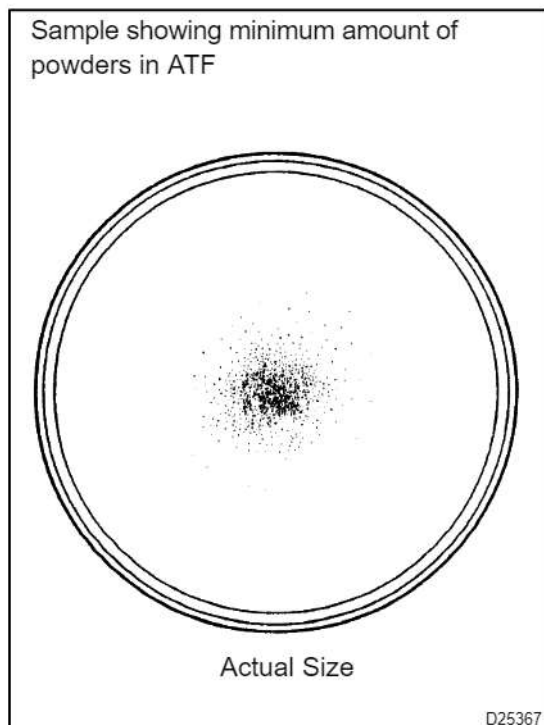
- (a) Inspect the one-way clutch.
 - (1) Install SST in the inner race of one-way clutch.
SST 09350-32014 (09351-32010)
 - (2) Set SST so that it fits in the notch of the converter hub and outer race of the one-way clutch.
SST 09350-32014 (09351-32020)



- (3) With the torque converter standing on its side, the clutch locks when turned counterclockwise and rotate freely and smoothly clockwise.

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

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



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

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

Malfunction item:

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

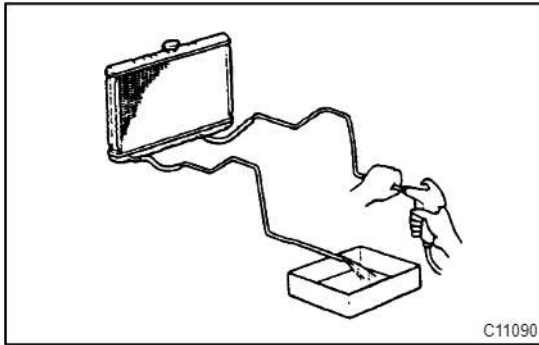
One-way clutch is free or locked in both directions.

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

HINT:

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

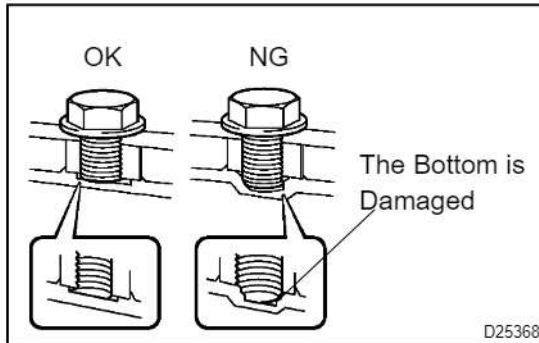
- (c) Replace the ATF in the torque converter clutch.
 - (1) If the ATF is discolored and/or has a foul odor, completely stir the ATF in the torque converter clutch and drain it with the face for installation facing up.



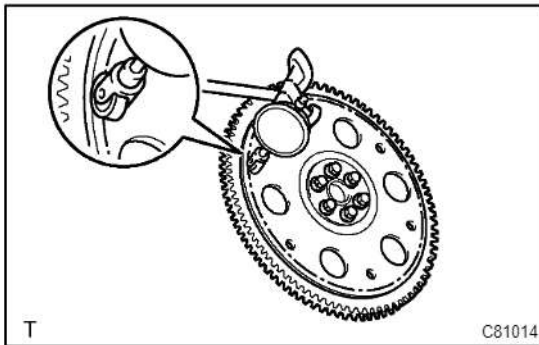
- (d) Clean and check the oil cooler and oil pipe line.
 (1) If the torque converter clutch is inspected or the ATF is exchanged, clean the oil cooler and oil pipe line.

HINT:

- ◆ Spray compressed air of 196 kPa (2 kgf/cm², 28 psi) from the inlet hose.
 - ◆ If plenty of fine powders are identified in the ATF, add new ATF using a bucket pump and clean it again.
- (2) If the ATF is cloudy, inspect the oil cooler (radiator).



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



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

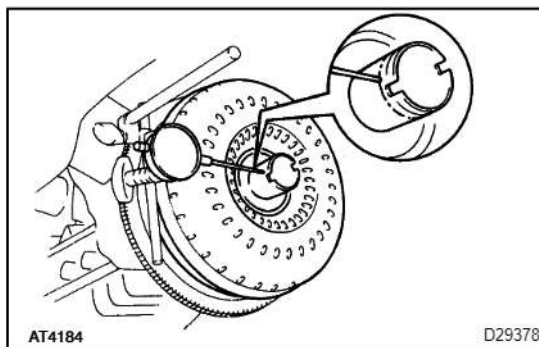
- (a) Set up a dial indicator and measure the drive plate runout.
 (b) Check the damage of the ring gear.

Maximum runout: 0.20 mm (0.0079 in.)

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

Torque:

178 N·m (1,820 kgf·cm, 132 ft·lbf)



3. INSPECT RUNOUT OF TORQUE CONVERTER CLUTCH ASSY

- (a) Temporarily mount the torque converter to the drive plate, set up a dial indicator and measure the torque converter sleeve run out.

Maximum runout: 0.30 mm (0.0118 in.)

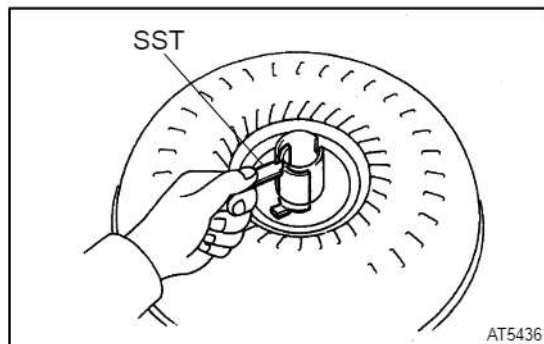
If run out is not within the specification, try to correct by reorienting the installation of the converter.

HINT:

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

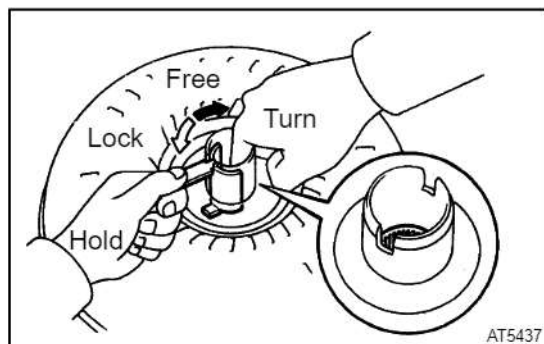
TORQUE CONVERTER CLUTCH AND DRIVE PLATE (A750E/A750F) (From August, 2003) INSPECTION

40160-01



1. INSPECT TORQUE CONVERTER CLUTCH ASSY

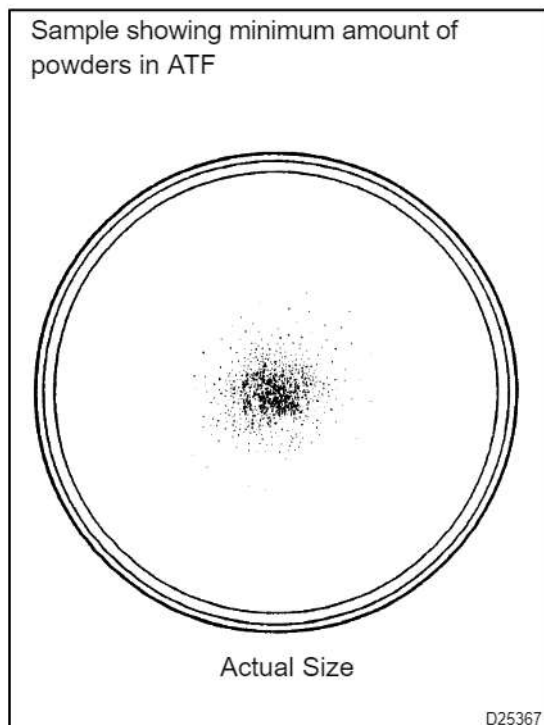
- (a) Inspect the one-way clutch.
 - (1) Install SST so that it fits in the notch of the converter hub and outer race of the one-way clutch.
SST 09350-32014 (09351-32020)



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

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

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



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

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

Malfunction item:

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

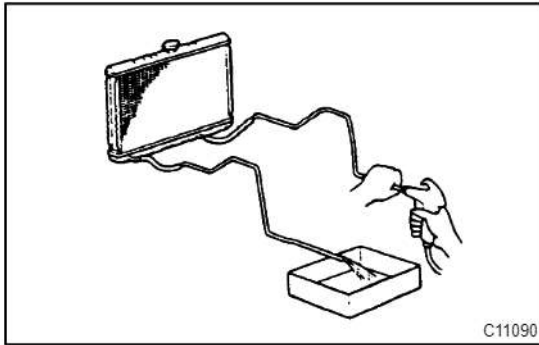
One-way clutch is free or locked in both directions.

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

HINT:

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

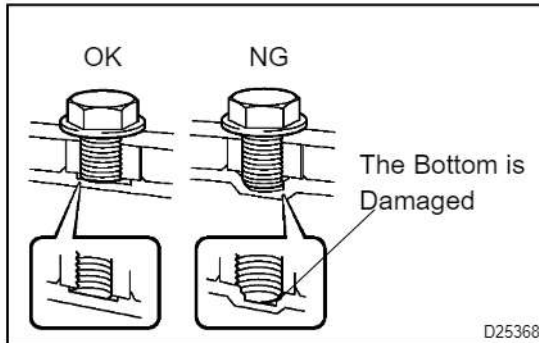
- (c) Replace the ATF in the torque converter clutch.
 - (1) If the ATF is discolored and/or has a foul odor, completely stir the ATF in the torque converter clutch and drain it with the face for installation facing up.



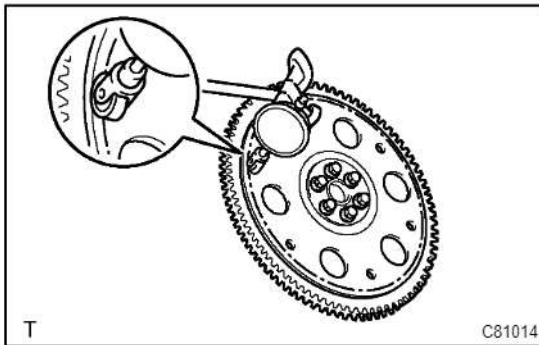
- (d) Clean and check the oil cooler and oil pipe line.
 (1) If the torque converter clutch is inspected or the ATF is exchanged, clean the oil cooler and oil pipe line.

HINT:

- ◆ Spray compressed air of 196 kPa (2 kgf/cm², 28 psi) from the inlet hose.
 - ◆ If plenty of fine powders are identified in the ATF, add new ATF using a bucket pump and clean it again.
- (2) If the ATF is cloudy, inspect the oil cooler (radiator).



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

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

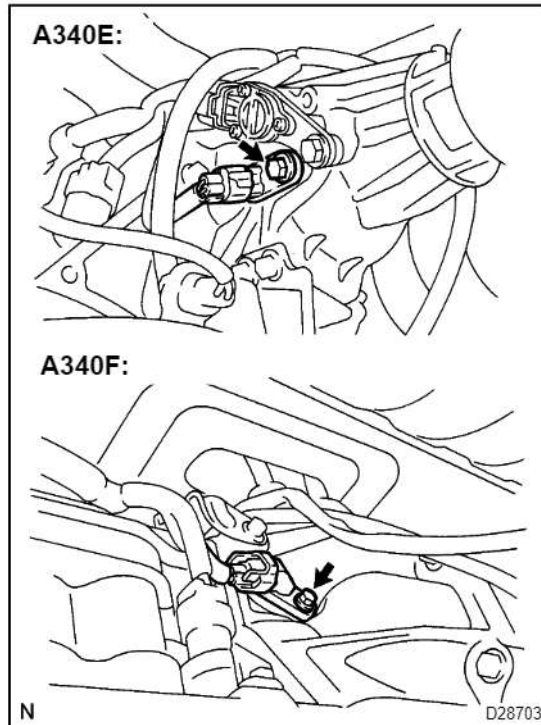
- (a) Set up a dial indicator and measure the drive plate runout.
 (b) Check the damage of the ring gear.

Maximum runout: 0.20 mm (0.0079 in.)

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

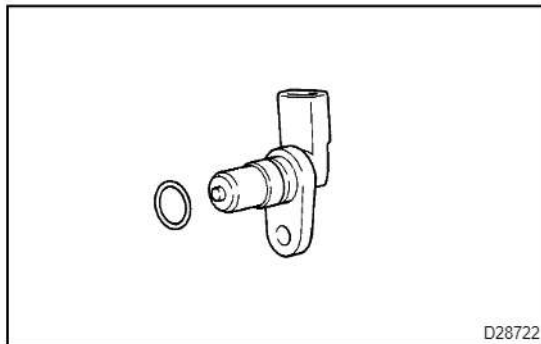
SPEED SENSOR (A340E/A340F) REPLACEMENT

4016P-01

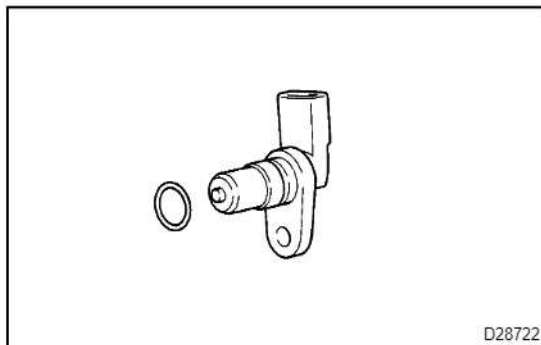


1. REMOVE SPEED SENSOR

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

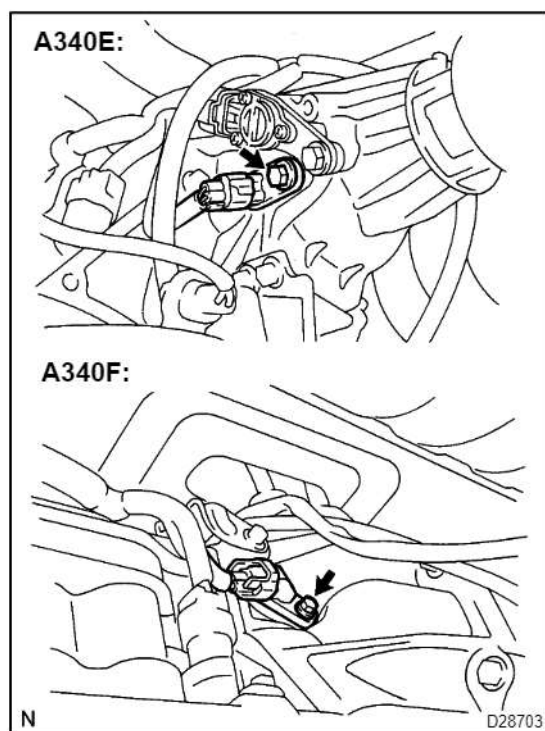


- (c) Remove the O-ring from the speed sensor.



2. INSTALL SPEED SENSOR

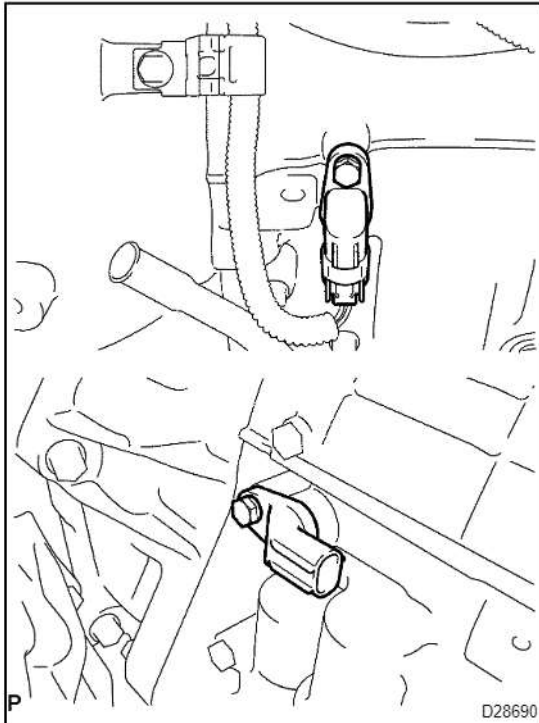
- (a) Coat a new O-ring with ATF and install it to the speed sensor.



- (b) Install the speed sensor with the bolt.
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)
- (c) Connect the speed sensor connector.

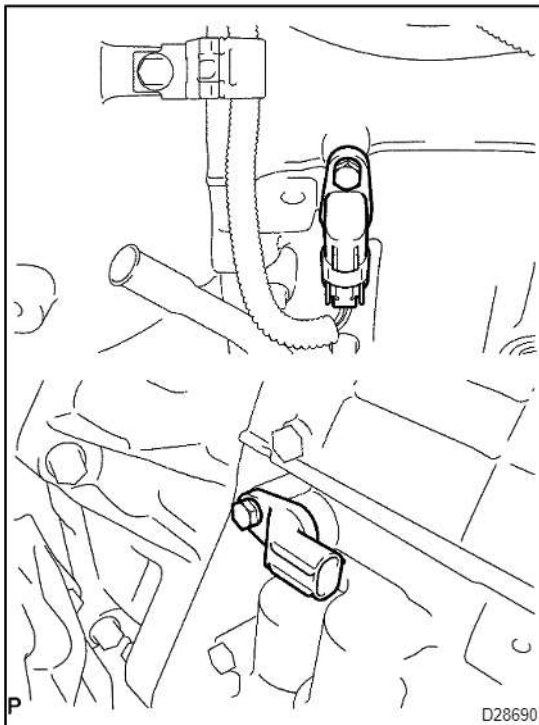
SPEED SENSOR (A750E/A750F) (From August, 2003) REPLACEMENT

4016Q-01



1. REMOVE SPEED SENSOR

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



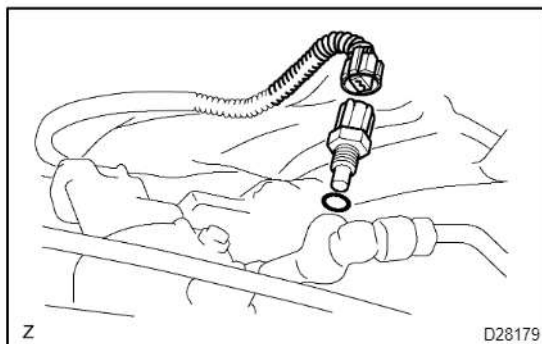
2. INSTALL SPEED SENSOR

- (a) Coat a new O-ring with ATF.
- (b) Install the speed sensor with the bolt.
Torque: 5.4 N·m (55 kgf·cm, 48 in.·lbf)
- (c) Connect the connector.

cardiagn.com

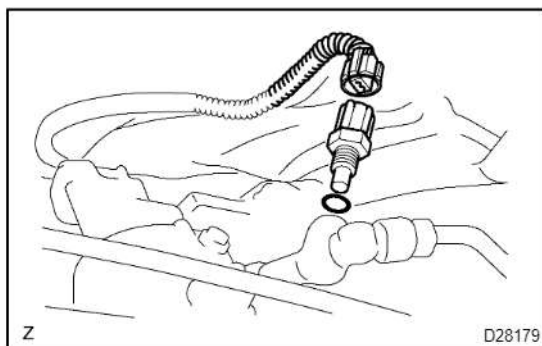
TEMPERATURE SENSOR (A340E/A340F) REPLACEMENT

400YT-02



1. REMOVE TEMPERATURE SENSOR

- (a) Disconnect the temperature sensor connector.
- (b) Remove the temperature sensor.



2. INSTALL TEMPERATURE SENSOR

- (a) Install the temperature sensor.
Torque: 15 N·m (150 kgf·cm, 11 ft·lbf)
- (b) Connect the temperature sensor connector.

NOTICE:

Be careful not to twist the harness.

3. INSPECT AUTOMATIC TRANSMISSION FLUID (See Page 40-3)

TRANSMISSION VALVE BODY ASSY (A340E/A340F)

4016R-01

REPLACEMENT

CAUTION:

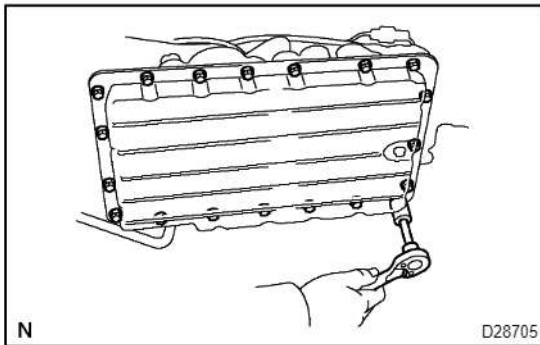
When working with FIPG material, you must observe the following items.

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

1. DRAIN AUTOMATIC TRANSMISSION FLUID

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

2. REMOVE TRANSMISSION OIL FILLER TUBE SUB-ASSY

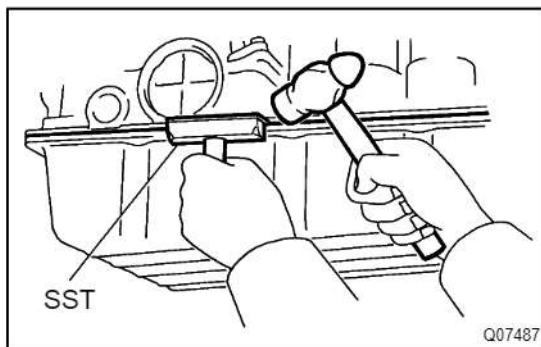


3. REMOVE AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY

NOTICE:

Some fluid will remain in the oil pan.

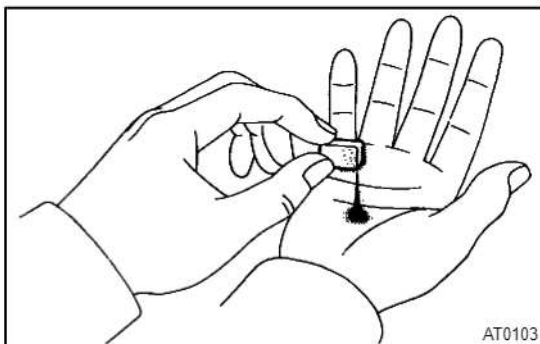
- (a) Remove the 19 bolts and oil pan sub-assy.



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

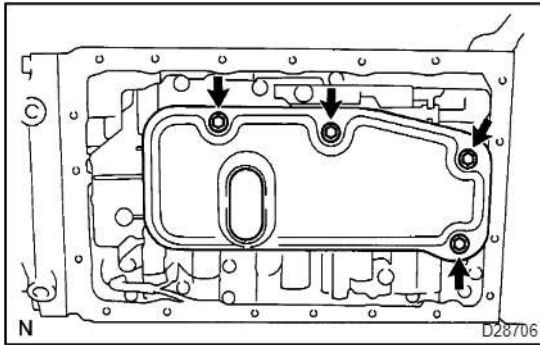
NOTICE:

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



- (c) Examine particles in pan.

- (1) Remove the magnets and use them to collect steel particles. Carefully look at the foreign matter and particles in the pan and on the magnets to anticipate the type of wear you will find in the transmission.
Steel (magnetic) ... bearing, gear and clutch plate wear
Brass (non-magnetic) ... bushing wear



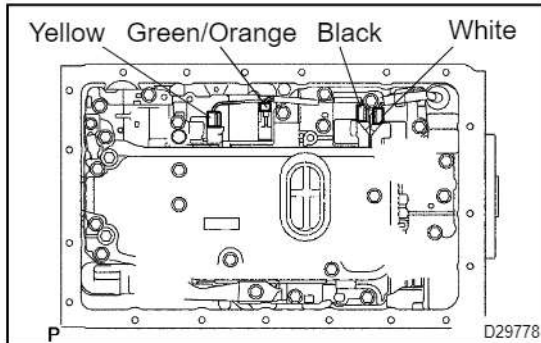
4. REMOVE VALVE BODY OIL STRAINER ASSY

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

NOTICE:

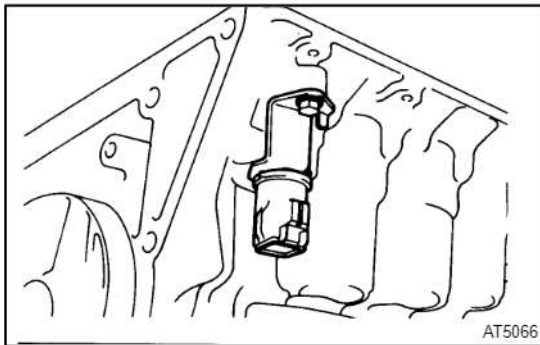
Be careful as some fluid will come out of the oil strainer.

- (b) Remove the 5 gaskets from the oil strainer.

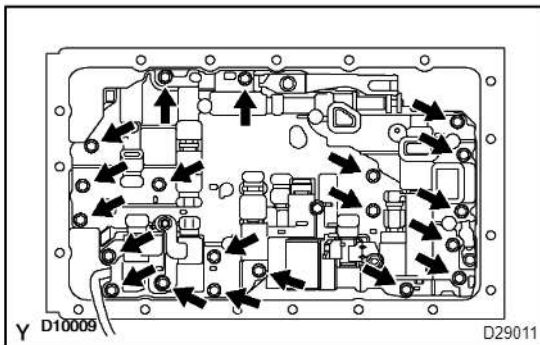


5. REMOVE TRANSMISSION WIRE

- (a) Disconnect the 4 connectors from each shift solenoid valve.

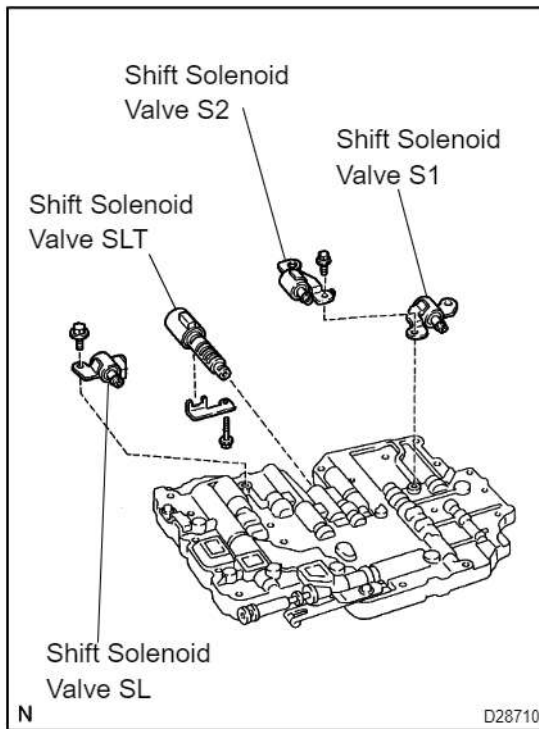


- (b) Remove the bolt and the stopper plate from the case.
 (c) Pull out the solenoid wiring from the transmission case.
 (d) Remove the O-rings from the solenoid wiring.

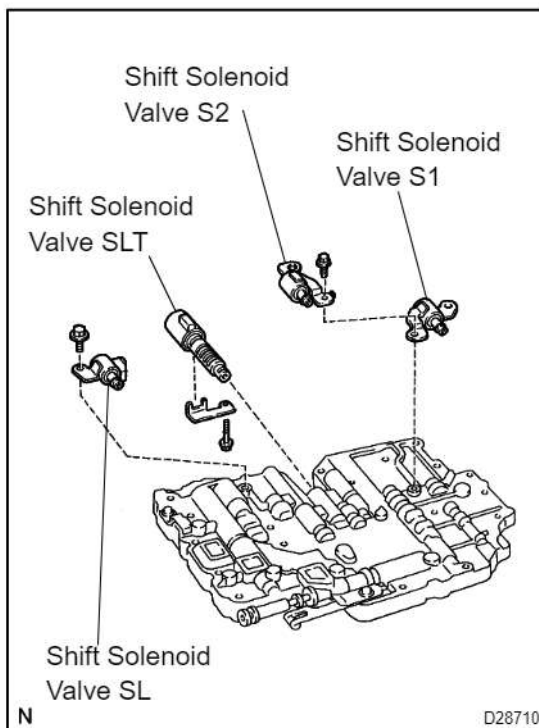


6. REMOVE TRANSMISSION VALVE BODY ASSY

- (a) Remove the 20 bolts and valve body assy.

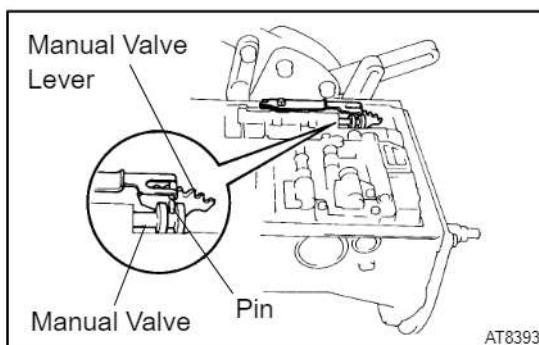


- (b) Remove the bolt and shift solenoid valve S1 and S2.
- (c) Remove the bolt and shift solenoid valve SL.
- (d) Remove the bolt and shift solenoid valve SLT.

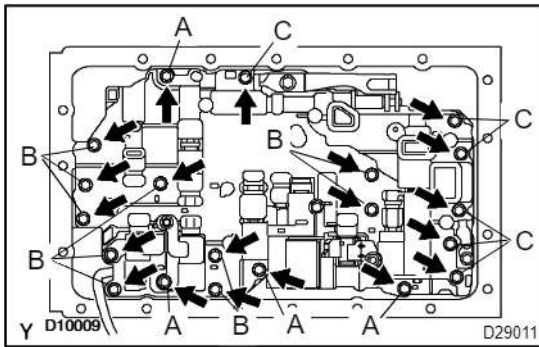


7. INSTALL TRANSMISSION VALVE BODY ASSY

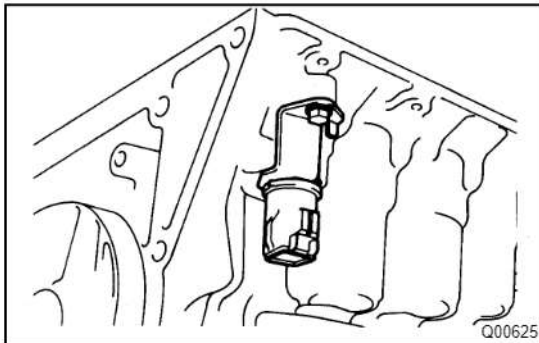
- (a) Install the shift solenoid valve SL with the bolt.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)
- (b) Install the shift solenoid valve S1 and S2 with the bolt.
Torque: 6.4 N·m (65 kgf·cm, 56 in·lbf)
- (c) Install the shift solenoid valve SLT with the bolt.
Torque: 6.4 N·m (65 kgf·cm, 56 in·lbf)



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

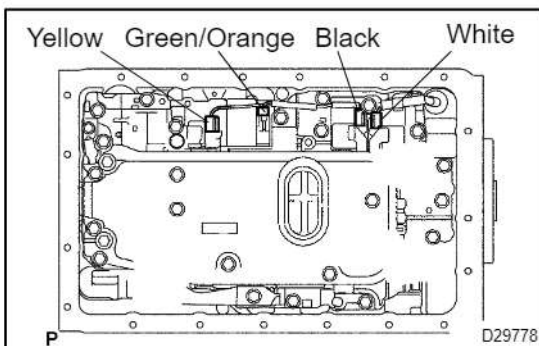


- (e) Install the 20 bolts.
Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)
Bolt length:
Bolt A: 23 mm (0.91 in.)
Bolt B: 28 mm (1.10 in.)
Bolt C: 36 mm (1.42 in.)

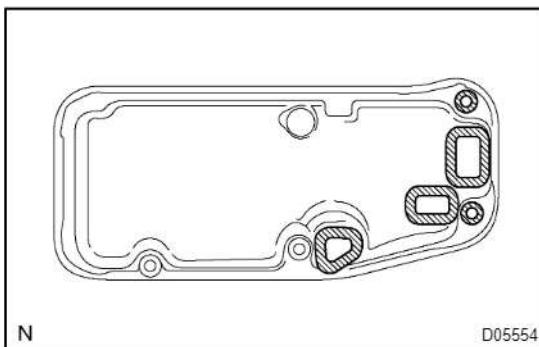


8. INSTALL TRANSMISSION WIRE

- (a) Coat a new O-ring with ATF, and install it to the solenoid wiring.
 (b) Install the solenoid wiring to the case, and install the stopper plate.
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)

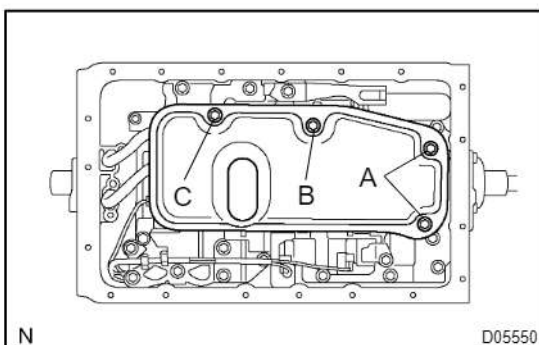


- (c) Connect the connectors to each shift solenoid valve.

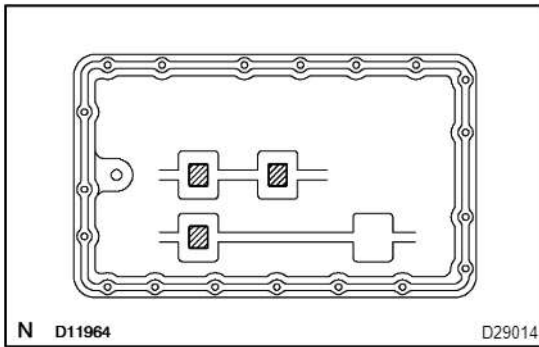


9. INSTALL VALVE BODY OIL STRAINER ASSY

- (a) Install 5 new gaskets.



- (b) Install the oil strainer with the 4 bolts.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)
Bolt length:
Bolt A: 14 mm (0.55 in.)
Bolt B: 20 mm (0.79 in.)
Bolt C: 23 mm (0.91 in.)

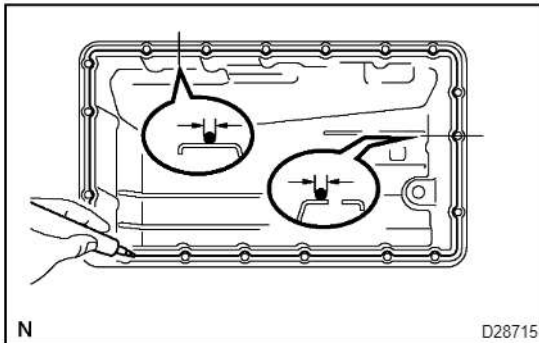


10. INSTALL AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY

HINT:

Remove any packing material and be careful not to drop oil on the contacting surfaces of the transmission case and oil pan sub-assy.

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



- (b) Apply FIPG to the oil pan, as shown in the illustration.

FIPG:

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

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

11. INSTALL TRANSMISSION OIL FILLER TUBE SUB-ASSY

12. ADD AUTOMATIC TRANSMISSION FLUID

13. INSPECT AUTOMATIC TRANSMISSION FLUID (See Page 40-3)

TRANSMISSION VALVE BODY ASSY (A750E/A750F) (From August, 2003)

4016S-01

REPLACEMENT

CAUTION:

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

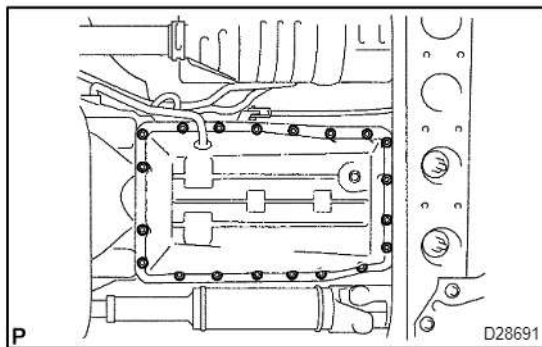
- ◆ Using a razor blade and gasket scraper, remove all the old FIPG material from the gasket surfaces.
- ◆ Thoroughly clean all components to remove all the loose material.
- ◆ Clean both sealing surfaces with a non-remove solvent.
- ◆ Apply FIPG in an approx. 1 mm (0.04 in) wide bead along the sealing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

1. DRAIN AUTOMATIC TRANSMISSION FLUID

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

Torque: 28 N·m (285 kgf·cm, 21 ft·lbf)

2. REMOVE TRANSMISSION OIL FILLER TUBE SUB-ASSY

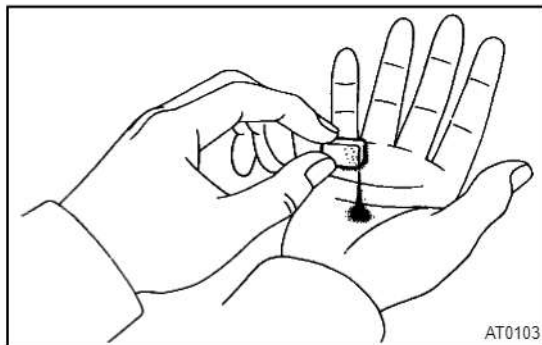


3. REMOVE AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY

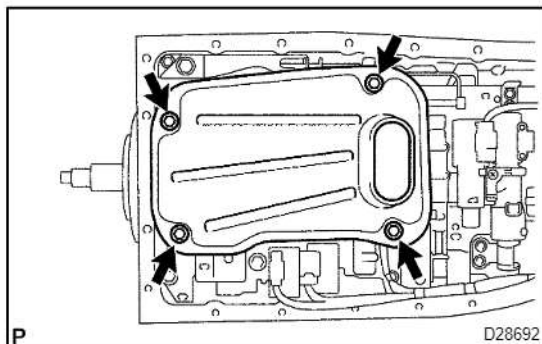
NOTICE:

Some fluid will remain in the oil pan.

- (a) Remove the 20 bolts, gasket and oil pan sub-assy.



- (b) Examine particles in pan.
 - (1) Remove the magnets and use them to collect steel particles. Carefully look at the foreign matter and particles in the pan and on the magnets to anticipate the type of wear you will find in the transmission.
 - Steel (magnetic) ... bearing, gear and clutch plate wear
 - Brass (non-magnetic) ... bushing wear

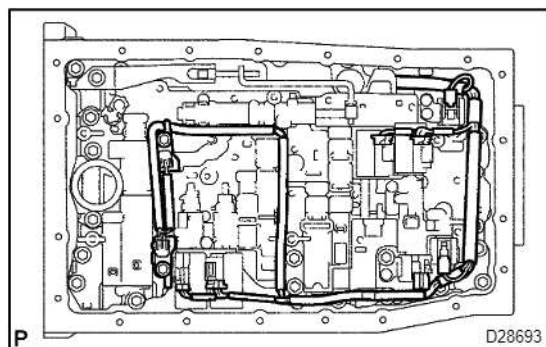


4. REMOVE VALVE BODY OIL STRAINER ASSY

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

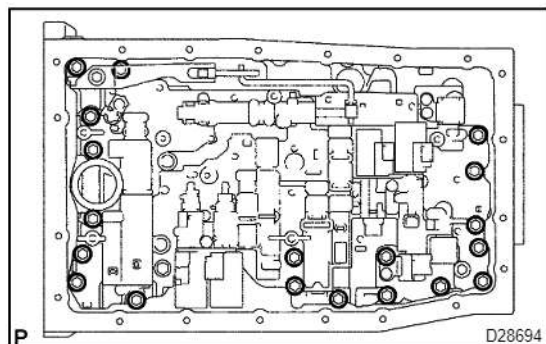
NOTICE:

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



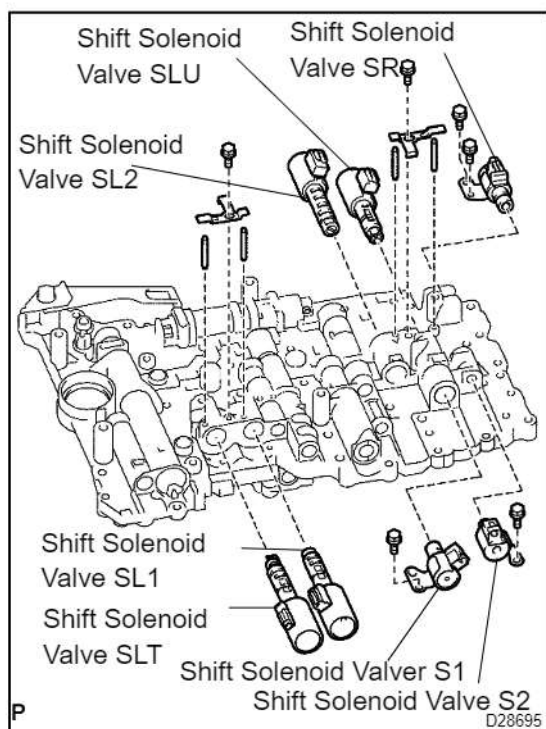
5. REMOVE TRANSMISSION WIRE

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

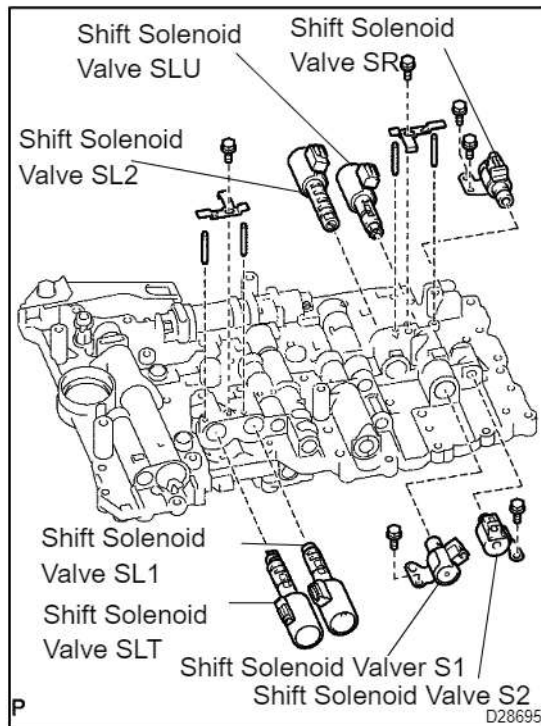


6. REMOVE TRANSMISSION VALVE BODY ASSY

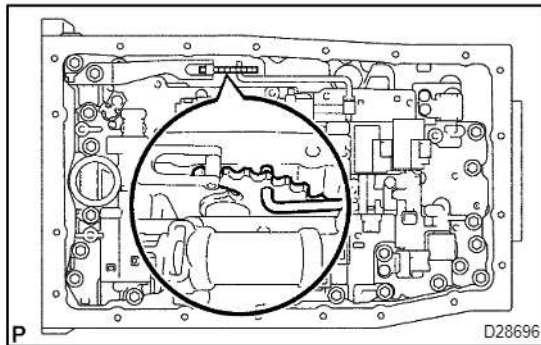
- (a) Remove the 19 bolts and valve body.
- (b) Remove the 3 drum seal gaskets.



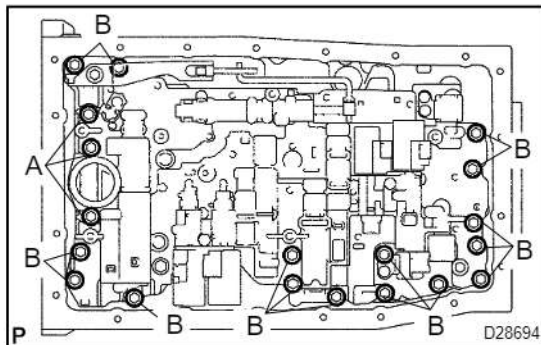
- (c) Remove the bolt, lock plate, pin and shift solenoid valve SLT and SL1.
- (d) Remove the bolt, lock plate, pin and shift solenoid valve SLU and SL2.
- (e) Remove the 2 bolts and shift solenoid valve SR.
- (f) Remove the bolt and shift solenoid valve S1.
- (g) Remove the bolt and shift solenoid S2.

**7. INSTALL TRANSMISSION VALVE BODY ASSY**

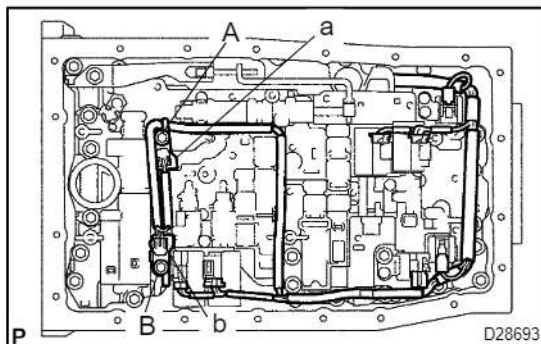
- (a) Install the shift solenoid valve S2 with the bolt.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)
- (b) Install the shift solenoid valve S1 with the bolt.
Torque: 6.4 N·m (65 kgf·cm, 56 in·lbf)
- (c) Install the shift solenoid valve SR with the 2 bolts.
Torque: 6.4 N·m (65 kgf·cm, 56 in·lbf)
- (d) Install the shift solenoid valve SLU and SL2 with the pin, lock plate and bolt.
Torque: 6.4 N·m (65 kgf·cm, 56 in·lbf)
- (e) Install the shift solenoid valve SLT and SL1 with the pin, lock plate and bolt.
Torque: 6.4 N·m (65 kgf·cm, 56 in·lbf)



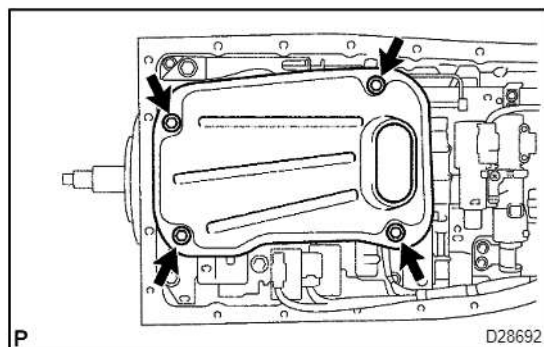
- (f) Align the groove of the manual valve to pin of the lever.



- (g) Install the 19 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.)

**8. INSTALL TRANSMISSION WIRE**

- (a) Connect the 7 connectors to the solenoid valves.
- (b) Install the clamp with the bolt.
Torque:
A: 10 N·m (100 kgf·cm, 7 in·lbf)
B: 11 N·m (110 kgf·cm, 8 in·lbf)
- (c) Connect the ATF temperature sensor.
Wiring color:
a: Orange
b: Blue



9. INSTALL VALVE BODY OIL STRAINER ASSY

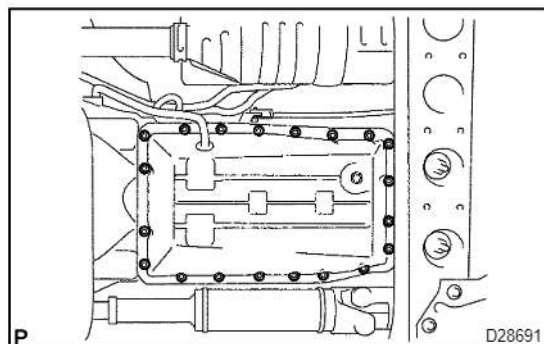
- (a) Install the a new O-ring and oil strainer with the 4 bolts.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

10. INSTALL AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY

HINT:

Remove any packing material and be careful not to drop oil on the contacting surfaces of the transmission case and oil pan.

- (a) Install a new gasket and oil pan sub-assy.



- (b) Install the oil pan with the 20 bolts.

Torque: 4.4 N·m (45 kgf·cm, 39 in·lbf)

11. INSTALL TRANSMISSION OIL FILLER TUBE SUB-ASSY

12. ADD AUTOMATIC TRANSMISSION FLUID

13. INSPECT AUTOMATIC TRANSMISSION FLUID (SEE PAGE 40-4)

TRANSMISSION WIRE (A340E/A340F)

4016T-01

REPLACEMENT

CAUTION:

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

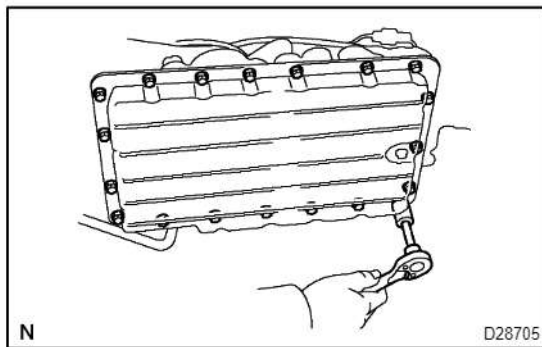
- ◆ Using a razor blade and gasket scraper, remove all the old FIPG material from the gasket surfaces.
- ◆ Thoroughly clean all components to remove all the loose material.
- ◆ Clean both sealing surfaces with a non-remove solvent.
- ◆ Apply FIPG in an approx. 1 mm (0.04 in.) wide bead along the sealing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

1. DRAIN AUTOMATIC TRANSMISSION FLUID

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

Torque: 20 N·m (204 kgf·cm, 15 ft·lbf)

2. REMOVE TRANSMISSION OIL FILLER TUBE SUB-ASSY

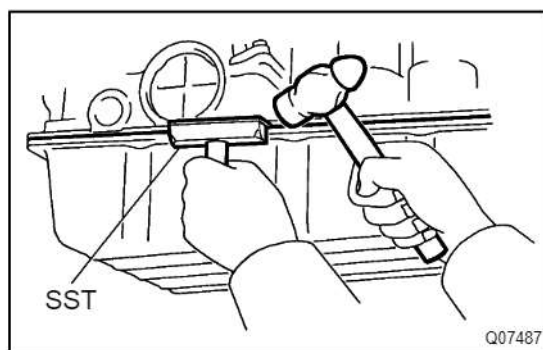


3. REMOVE AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY

NOTICE:

Some fluid will remain in the oil pan.

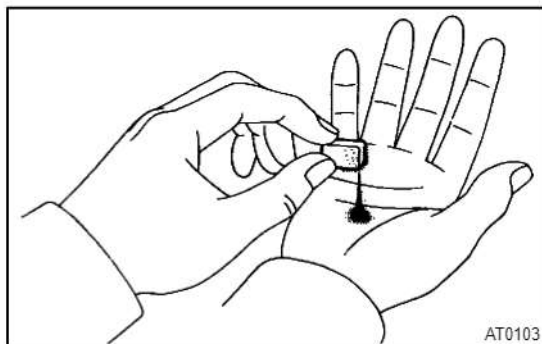
- (a) Remove the 19 bolts and oil pan sub-assy.



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

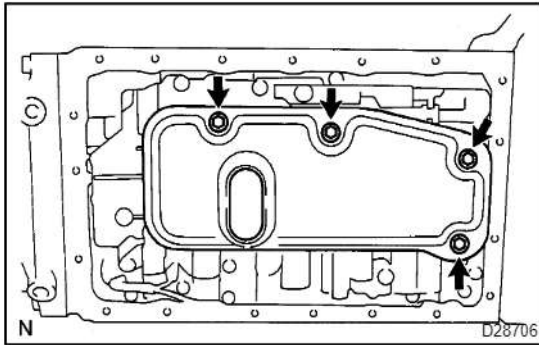
NOTICE:

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



- (c) Examine particles in pan.

- (1) Remove the magnets and use them to collect steel particles. Carefully look at the foreign matter and particles in the pan and on the magnets to anticipate the type of wear you will find in the transmission.
Steel (magnetic) ... bearing, gear and clutch plate wear
Brass (non-magnetic) ... bushing wear



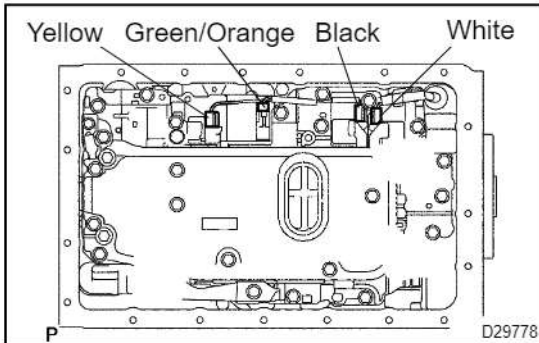
4. REMOVE VALVE BODY OIL STRAINER ASSY

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

NOTICE:

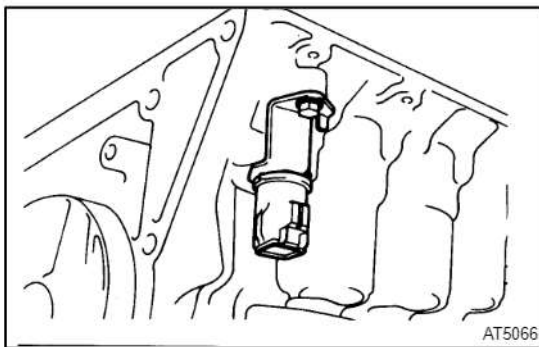
Be careful as some fluid will come out of the oil strainer.

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

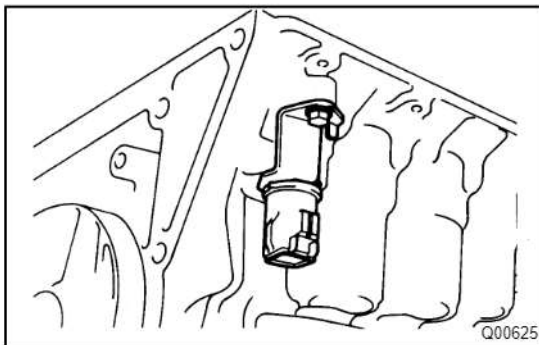


5. REMOVE TRANSMISSION WIRE

- (a) Disconnect the 4 connectors from each shift solenoid valve.



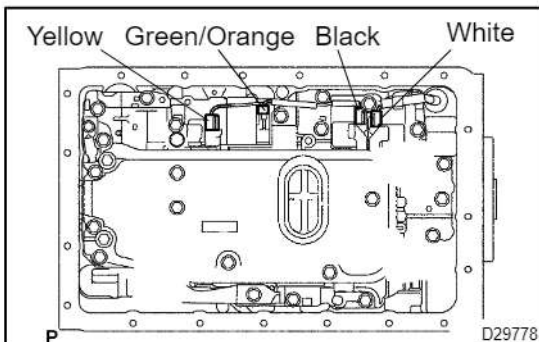
- (b) Remove the bolt and the stopper plate from the case.
 (c) Pull out the solenoid wiring from the transmission case.
 (d) Remove the O-rings from the solenoid wiring.



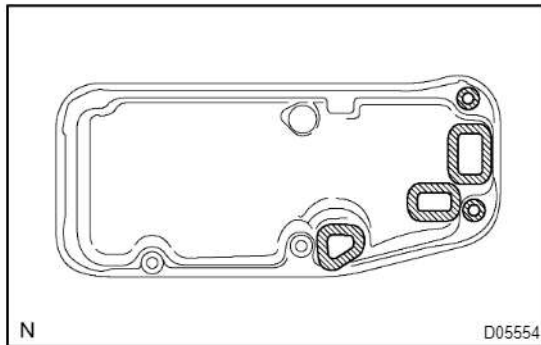
6. INSTALL TRANSMISSION WIRE

- (a) Coat a new O-ring with ATF, and install it to the solenoid wiring.
 (b) Install the solenoid wiring to the case, and install the stopper plate.

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

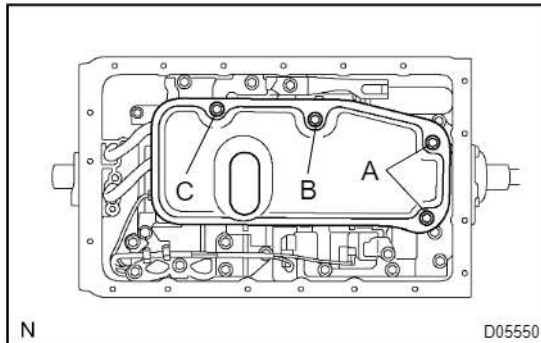


- (c) Connect the connectors to each shift solenoid valve.



7. INSTALL VALVE BODY OIL STRAINER ASSY

- (a) Install 5 new gaskets.



- (b) Install the oil strainer with the 4 bolts.

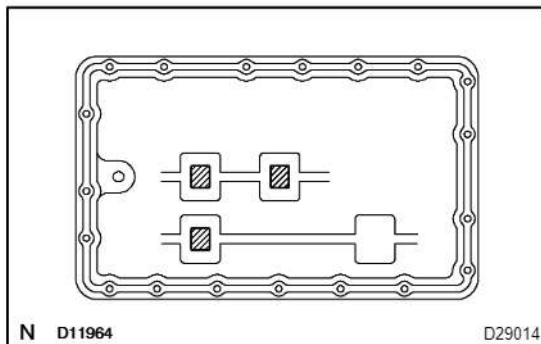
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)

Bolt length:

Bolt A: 14 mm (0.55 in.)

Bolt B: 20 mm (0.79 in.)

Bolt C: 23 mm (0.91 in.)

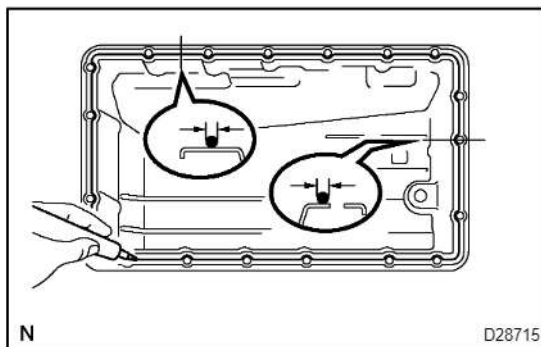


8. INSTALL AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY

HINT:

Remove any packing material and be careful not to drop oil on the contacting surfaces of the transmission case and oil pan sub-assy.

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



- (b) Apply FIPG to the oil pan, as shown in the illustration.

FIPG:

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

- (c) Install the oil pan sub-assy with 19 bolts.

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

9. INSTALL TRANSMISSION OIL FILLER TUBE SUB-ASSY

10. ADD AUTOMATIC TRANSMISSION FLUID

11. INSPECT AUTOMATIC TRANSMISSION FLUID (See Page 40-3)

TRANSMISSION WIRE (A750E/A750F) (From August, 2003)

REPLACEMENT

CAUTION:

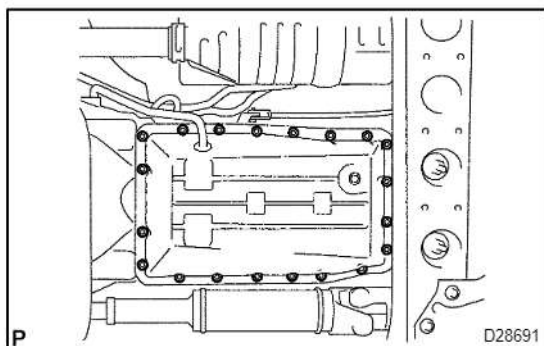
When working with FIPG material, you must observe the following items.

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

1. DRAIN AUTOMATIC TRANSMISSION FLUID

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

Torque: 28 N·m (285 kgf·cm, 21 ft·lbf)

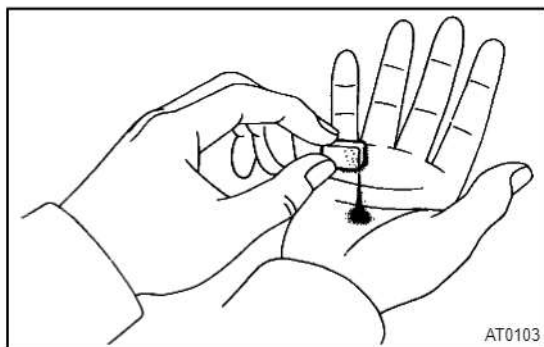


2. REMOVE AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY

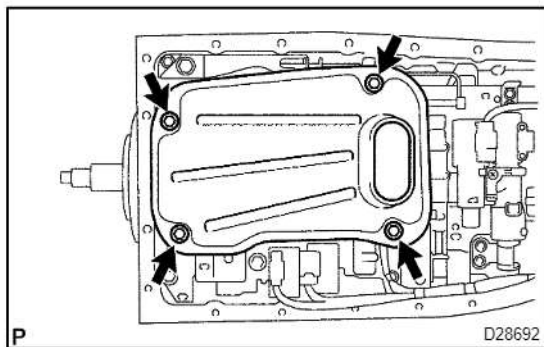
NOTICE:

Some fluid will remain in the oil pan.

- (a) Remove the 20 bolts.



- (b) Examine particles in pan.
 - (1) Remove the magnets and use them to collect steel particles. Carefully look at the foreign matter and particles in the pan and on the magnets to anticipate the type of wear you will find in the transmission.
 - Steel (magnetic) ... bearing, gear and clutch plate wear
 - Brass (non-magnetic) ... bushing wear

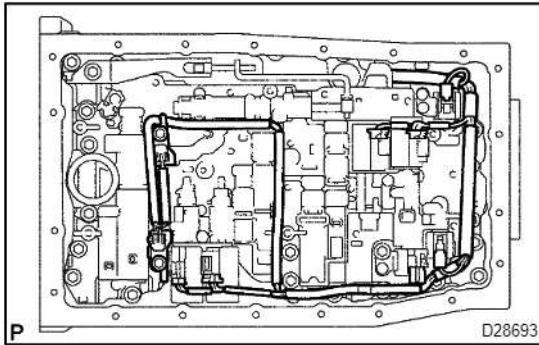


3. REMOVE VALVE BODY OIL STRAINER ASSY

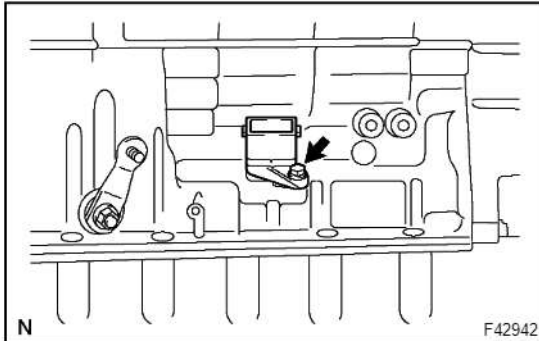
- (a) Remove the 4 bolts and oil strainer.

NOTICE:

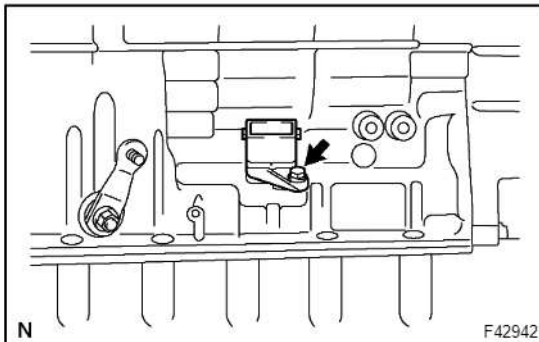
Be careful as some fluid will come out of the oil strainer.

**4. REMOVE TRANSMISSION WIRE**

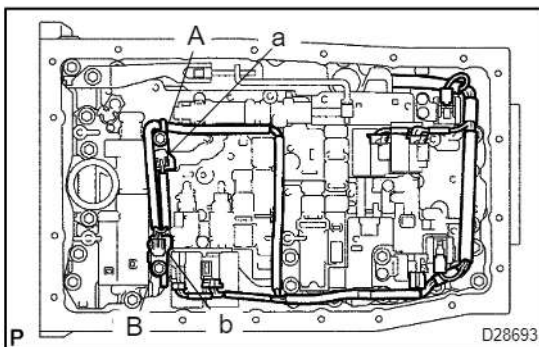
- (a) Remove the bolt and clamp.
- (b) Disconnect the ATF temperature sensor.
- (c) Disconnect the 7 connectors from the solenoid valves.



- (d) Disconnect the transmission wire connector.
- (e) Remove the bolt and pull out the transmission wire.

**5. INSTALL TRANSMISSION WIRE**

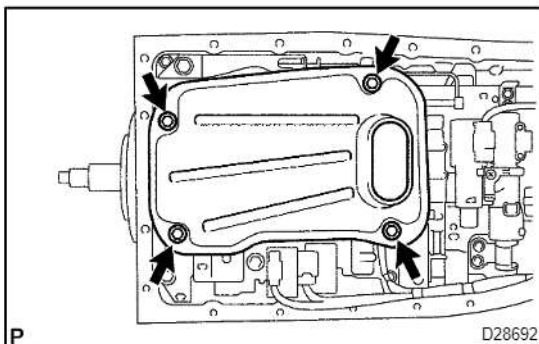
- (a) Install the transmission wire with the bolt.
Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)
- (b) Connect the transmission wire connector.



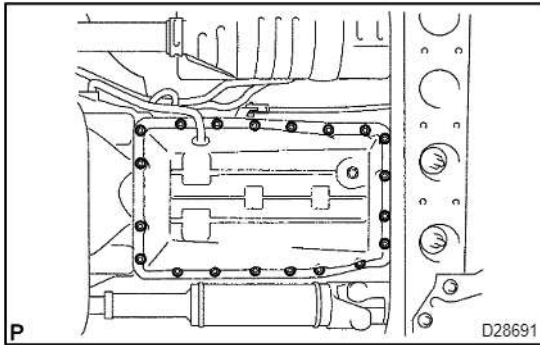
- (c) Connect the 7 connectors to the solenoid valves.
- (d) Install the clamp with the bolt.

Torque:**A: 10 N·m (100 kgf·cm, 7 in·lbf)****B: 11 N·m (110 kgf·cm, 8 in·lbf)**

- (e) Connect the ATF temperature sensor.

Wiring color:**a: Orange****b: Blue****6. INSTALL VALVE BODY OIL STRAINER ASSY**

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



7. INSTALL AUTOMATIC TRANSMISSION OIL PAN SUB-ASSY

HINT:

Remove any packing material and be careful not to drop oil on the contacting surfaces of the transmission case and oil pan.

- (a) Install the oil pan with the 20 bolts.

Torque: 4.4 N·m (45 kgf·cm, 39 in·lbf)

8. ADD AUTOMATIC TRANSMISSION FLUID

9. INSPECT AUTOMATIC TRANSMISSION FLUID (SEE PAGE 40-4)

AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL (A340E)

400YW-02

REPLACEMENT

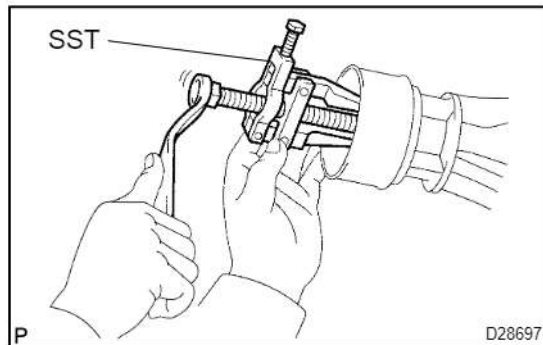
1. REMOVE PROPELLER SHAFT ASSY (See Page 30-11)

2. DRAIN AUTOMATIC TRANSMISSION FLUID

(a) Remove the drain plug, gasket and drain ATF.

(b) Install a new gasket and drain plug.

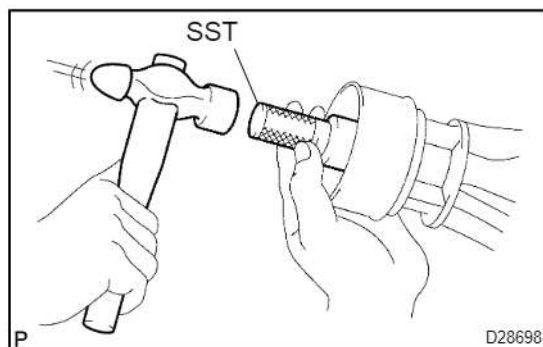
Torque: 20 N·m (205 kgf·cm, 15 ft·lbf)



3. REMOVE AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL

(a) Using SST, remove the oil seal.

SST 09308-10010



4. INSTALL AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL

(a) Using SST and a hammer, carefully drive in a new oil seal in as far as will go.

SST 09325-40010

Oil seal depth from flat end:

5.8 – 6.2 mm (0.228 – 0.244 in.)

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

5. INSTALL PROPELLER SHAFT ASSY (See Page 30-11)

6. ADD AUTOMATIC TRANSMISSION FLUID

7. INSPECT AUTOMATIC TRANSMISSION FLUID (See Page 40-3)

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AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL (A750E) (From August, 2003)

4016V-01

REPLACEMENT

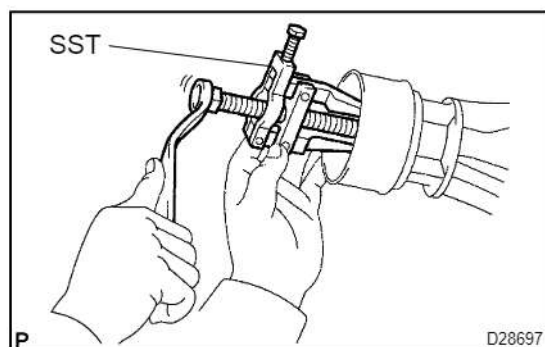
1. REMOVE PROPELLER SHAFT ASSY (SEE PAGE 30-11)

2. DRAIN AUTOMATIC TRANSMISSION FLUID

(a) Remove the drain plug, gasket and drain ATF.

(b) Install a new gasket and drain plug.

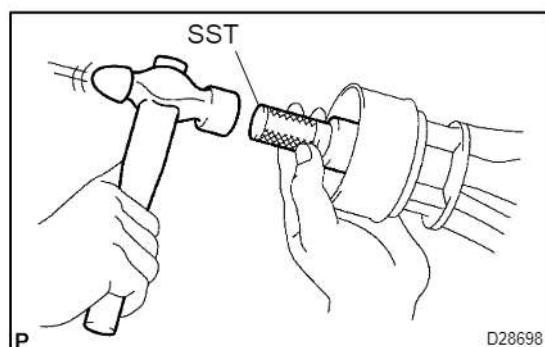
Torque: 28 N·m (285 kgf·cm, 21 ft·lbf)



3. REMOVE AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL

(a) Using SST, remove the oil seal.

SST 09308-00010



4. INSTALL AUTOMATIC TRANSMISSION EXTENSION HOUSING OIL SEAL

(a) Using SST and a hammer, carefully drive in a new oil seal in as far as will go.

SST 09316-60011 (09316-00011, 09316-00051)

Oil seal depth from flat end:

5.4 – 5.8 mm (0.213 – 0.228 in.)

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

5. INSTALL PROPELLER SHAFT ASSY (SEE PAGE 30-11)

6. ADD AUTOMATIC TRANSMISSION FLUID

7. INSPECT AUTOMATIC TRANSMISSION FLUID(SEE PAGE 40-4)

SHIFT LOCK SYSTEM

40082-05

ON-VEHICLE INSPECTION

1. CHECK SHIFT LOCK OPERATION

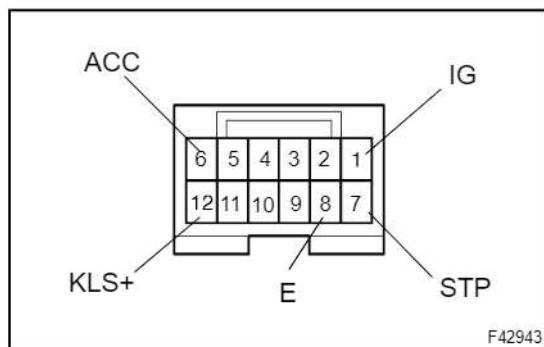
- Shift the shift lever to P position.
- Turn the ignition switch to LOCK.
- Check that the shift lever cannot be shifted to any other positions than P.
- Turn the ignition switch ON, depress the brake pedal and check that the shift lever can be shifted to any other positions.

2. CHECK SHIFT LOCK RELEASE LINK OPERATION

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

3. CHECK KEY INTERLOCK OPERATION

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



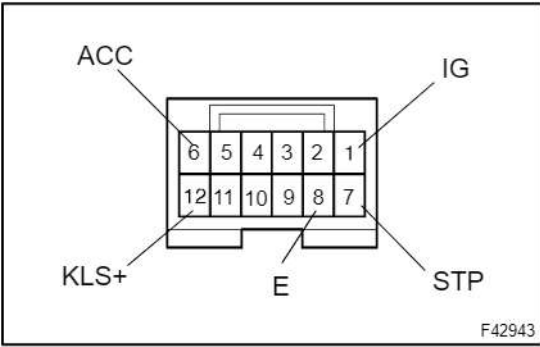
4. INSPECT SHIFT LOCK CONTROL ECU SUB-ASSY

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

HINT:

Do not disconnect the shift lock control ECU connector.

Terminal	Measuring Condition	Voltage (V)
1 (KLS+) - 7 (E)	(1) Ignition switch ACC and P position	0
	(2) Ignition switch ACC and except P position	7.5 - 11
	(3) Ignition switch ACC and except P position (After approx. 1 second)	6 - 9
4 (ACC) - 7 (E)	Ignition switch ON	10 - 14
	Ignition switch ACC	10 - 14
	Ignition switch OFF	0
9 (STP) - 7 (E)	Depress brake pedal	10 - 14
	Release brake pedal	0
5 (IG) - 7 (E)	Ignition switch ON	10 - 14
	Ignition switch OFF	0



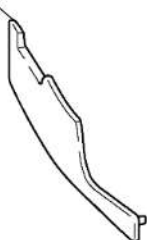
- (b) Using an ohmmeter, measure the resistance at terminal E (7) and body ground.
- HINT:
Do not disconnect the shift lock control ECU connector.

Terminal	Measuring Condition	Specified Value
7 (E) – Body ground	Always	Continuity

FLOOR SHIFT ASSY COMPONENTS

400V0-02

Consol Upper Panel
Garnish No.1



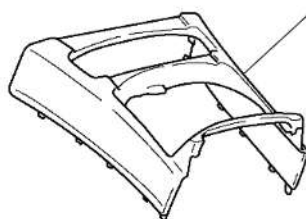
Consol Upper Panel
Garnish No.2



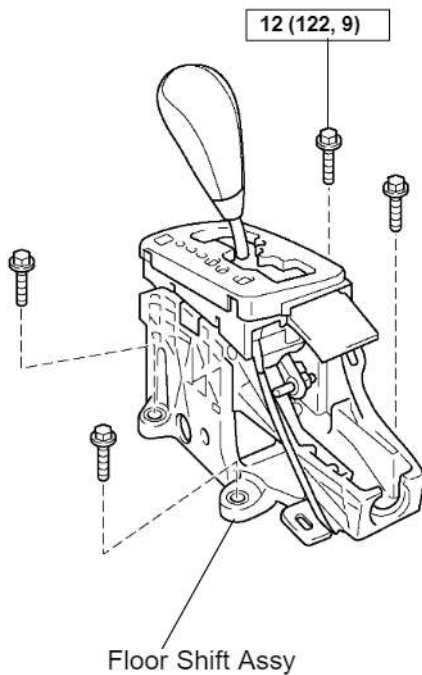
Consol Upper Rear
Panel Sub-assy



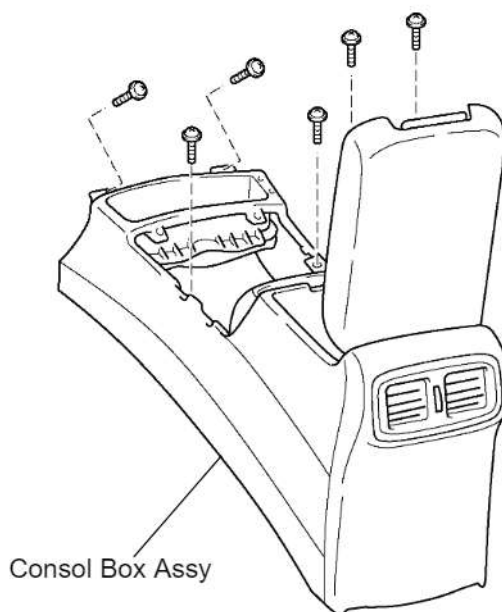
Consol Panel Sub-assy



12 (122, 9)



Floor Shift Assy



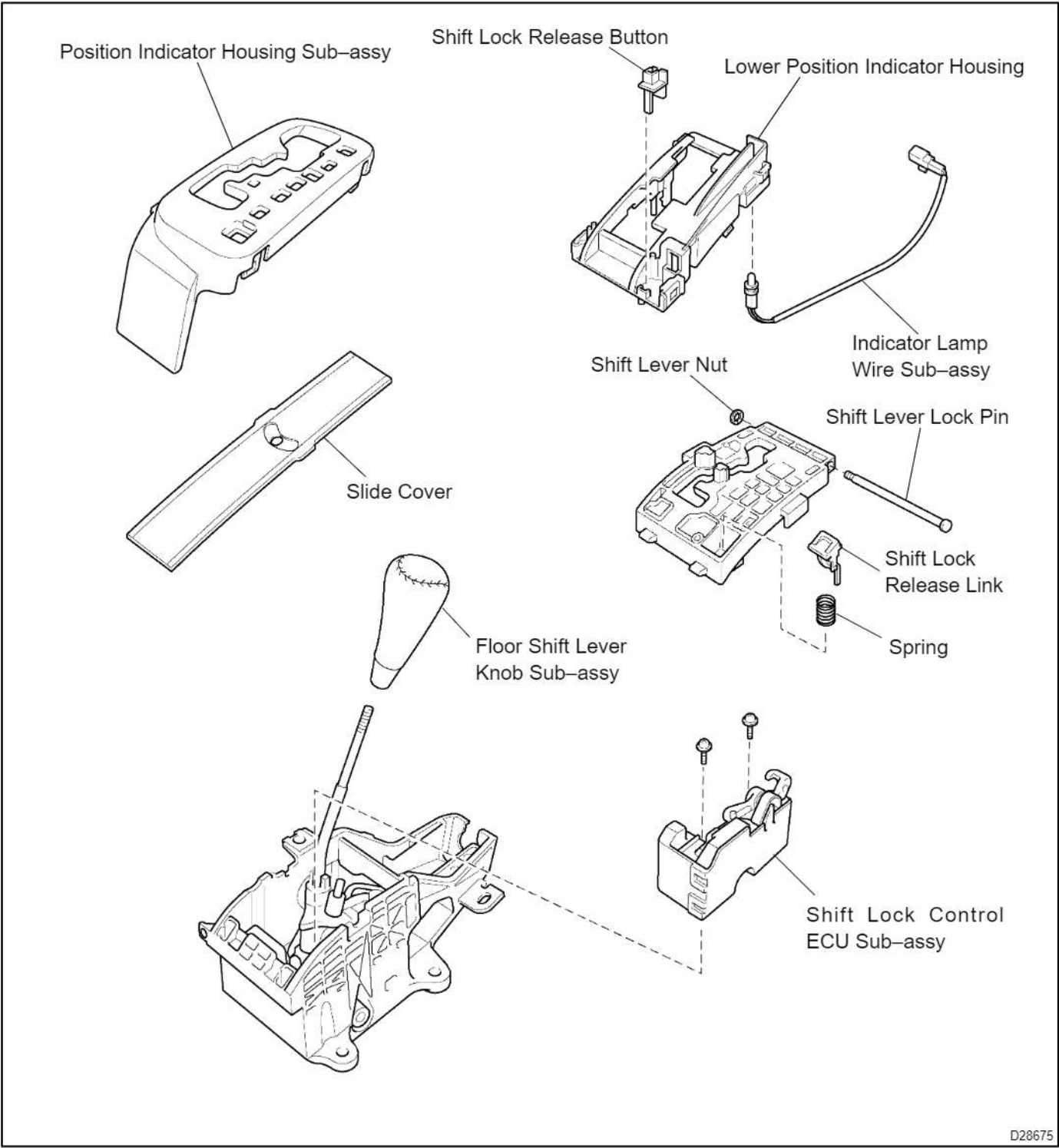
Consol Box Assy

N

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

F42932

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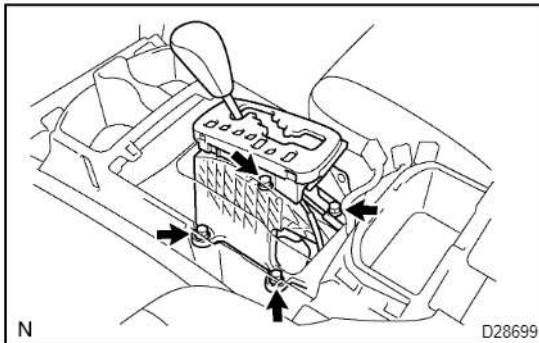


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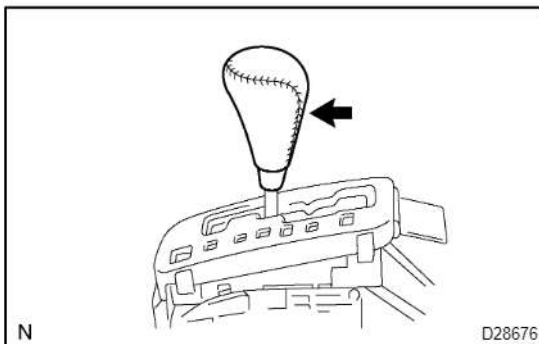
OVERHAUL

1. REMOVE CONSOLE UPPER REAR PANEL SUB-ASSY (SEE PAGE 71-14)
2. REMOVE CONSOLE PANEL SUB-ASSY UPPER (SEE PAGE 71-14)
3. REMOVE CONSOLE UPPER PANEL GARNISH NO.1 (SEE PAGE 71-14)
4. REMOVE CONSOLE UPPER PANEL GARNISH NO.2 (SEE PAGE 71-14)
5. REMOVE CONSOLE BOX ASSY REAR (SEE PAGE 71-14)



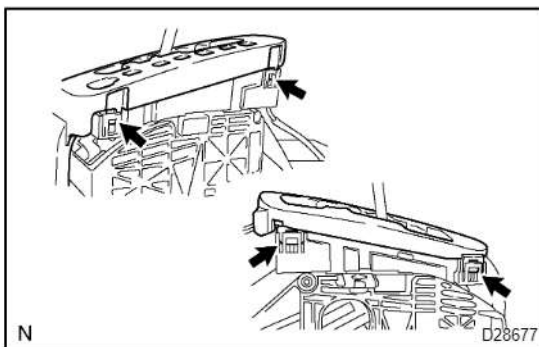
6. REMOVE FLOOR SHIFT ASSY

- (a) Disconnect the 2 connectors and 2 clamps.
- (b) Remove the lock plate and disconnect the transmission control cable.
- (c) Remove the 4 bolts and floor shift assy.



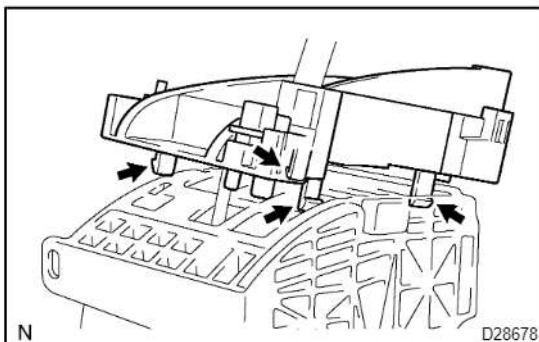
7. REMOVE SHIFT LEVER KNOB SUB-ASSY

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



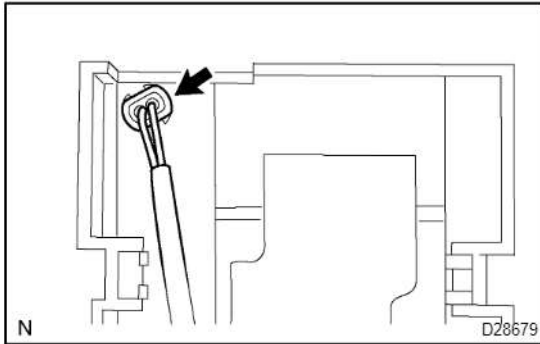
8. REMOVE POSITION INDICATOR HOUSING SUB-ASSY

- (a) Release the 4 claws with a screwdriver and remove the shift position indicator housing sub-assy and slide cover.

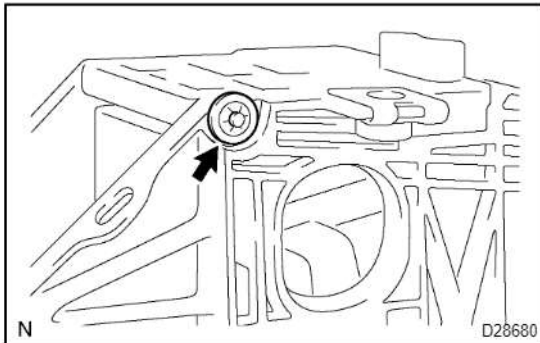


9. REMOVE LOWER POSITION INDICATOR HOUSING

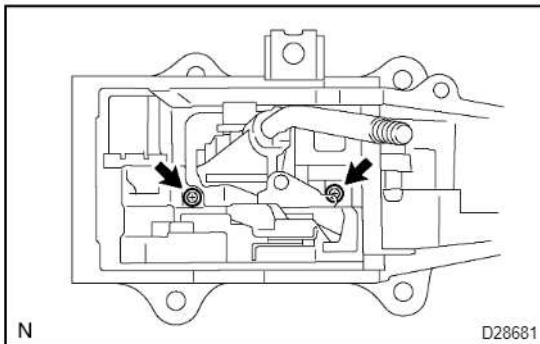
- (a) Disconnect the 3 clamps of indicator lamp wire sub-assy.
- (b) Release the 4 claws with a screwdriver and remove the lower position indicator housing.

10. REMOVE SHIFT LOCK RELEASE BUTTON**11. REMOVE SHIFT LOCK RELEASE BUTTON COVER****12. REMOVE INDICATOR LAMP WIRE SUB-ASSY**

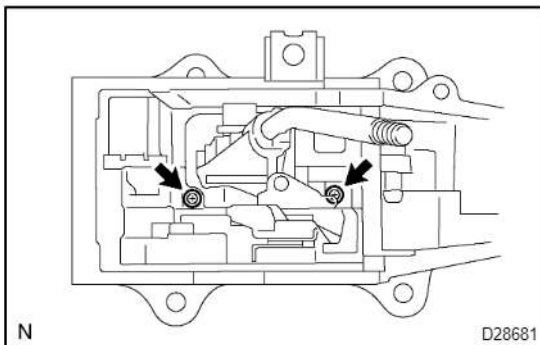
- (a) Remove the indicator lamp wire sub-assy.
- (b) Remove the bulb from the indicator lamp wire sub-assy.

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

- (a) Remove the shift lever nut and shift lever lock pin.
- (b) Remove the shift lever guide housing.
- (c) Release the 2 claws with a screwdriver and remove the shift lock release link and spring.



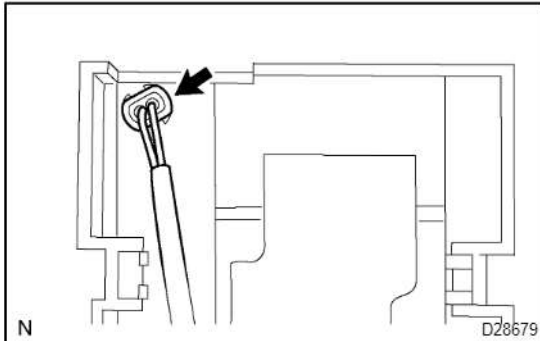
- (d) Remove the 2 screws and the shift lock control ECU.

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

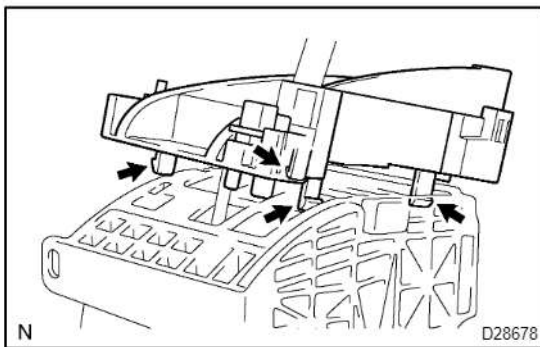
- (a) Install the shift lock control ECU with the 2 screws.
- (b) Install the spring and shift lock release link.
- (c) Install the shift lever guide housing.
- (d) Install the lever lock and shift lever nut.

15. INSTALL INDICATOR LAMP WIRE SUB-ASSY

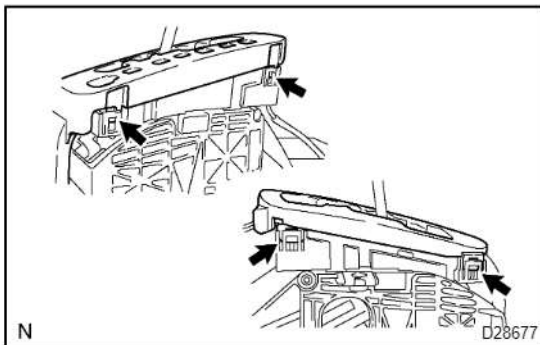
- (a) Install the bulb to the indicator lamp wire sub-assy.



- (b) Install the indicator lamp wire sub-assy.

16. INSTALL SHIFT LOCK RELEASE BUTTON COVER**17. INSTALL SHIFT LOCK RELEASE BUTTON****18. INSTALL LOWER POSITION INDICATOR HOUSING**

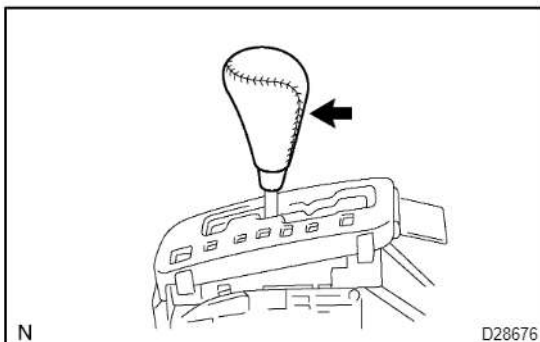
- (a) Install the lower position indicator housing.
(b) Connect the 3 clamps of indicator lamp wire sub-assy.

**19. INSTALL POSITION INDICATOR HOUSING SUB-ASSY**

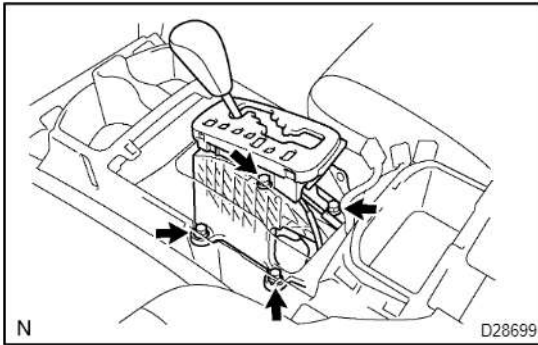
- (a) Install the slide cover and position indicator housing sub-assy to the shift lever guide housing.

HINT:

Firmly make the claws fit.

**20. INSTALL SHIFT LEVER KNOB SUB-ASSY**

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



21. INSTALL FLOOR SHIFT ASSY

- (a) Install the floor shift assy with the 4 bolts.
Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)
- (b) Connect the transmission control cable with the lock plate.
- (c) Connect the 2 clamps and 2 connectors.

22. ADJUST SHIFT LEVER POSITION (SEE PAGE 40-76)

23. INSTALL CONSOLE BOX ASSY REAR

24. INSTALL CONSOLE UPPER PANEL GARNISH NO.2

25. INSTALL CONSOLE UPPER PANEL GARNISH NO.1

26. INSTALL CONSOLE PANEL SUB-ASSY UPPER

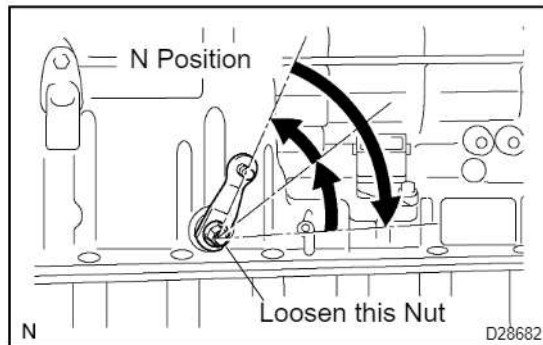
27. INSTALL CONSOLE UPPER REAR PANEL SUB-ASSY

28. INSPECT SHIFT LEVER POSITION (SEE PAGE 40-76)

ADJUSTMENT

1. INSPECT SHIFT LEVER POSITION

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



2. ADJUST SHIFT LEVER POSITION

- (a) Loosen the nut.
- (b) Push the control shaft fully rearward.
- (c) Return the control shaft lever 2 notches to N position.
- (d) Set the shift lever to N position.
- (e) While holding the shift lever lightly toward the R position side, tighten the nut.

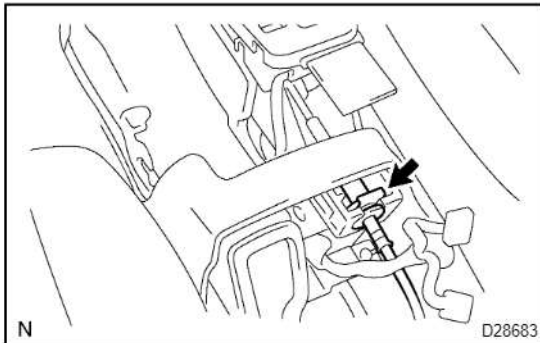
Torque: 15.6 kgf·cm (159 kgf·cm, 12 ft·lbf)

TRANSMISSION CONTROL CABLE ASSY

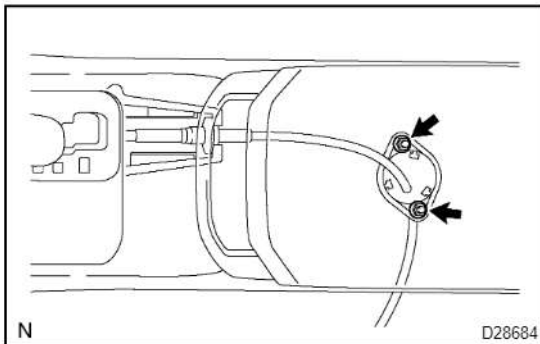
400V2-02

REPLACEMENT

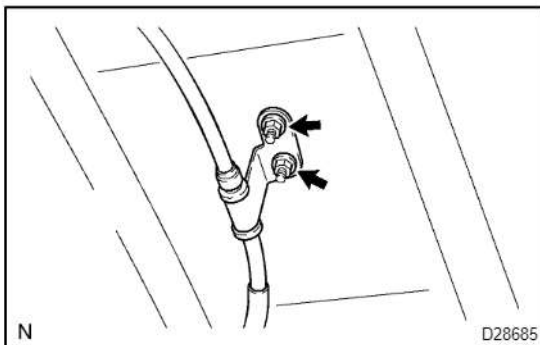
1. REMOVE CONSOLE UPPER REAR PANEL SUB-ASSY
2. REMOVE CONSOLE PANEL SUB-ASSY UPPER
3. REMOVE CONSOLE UPPER PANEL GARNISH NO.1
4. REMOVE CONSOLE UPPER PANEL GARNISH NO.2
5. REMOVE CONSOLE BOX ASSY REAR
6. REMOVE TRANSMISSION CONTROL CABLE ASSY
 - (a) Disconnect the transmission control cable assy from shift lever assy.



- (b) Remove the lock plate and disconnect the transmission control cable.

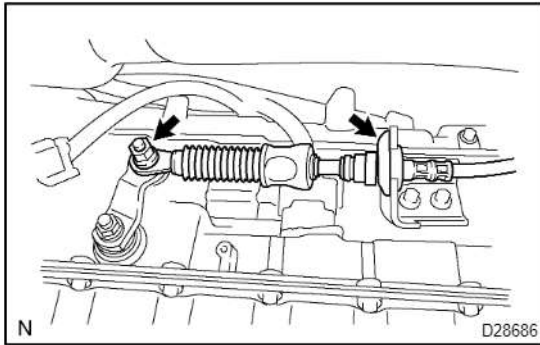


- (c) Remove the 2 bolts and disconnect the transmission control cable assy from body.

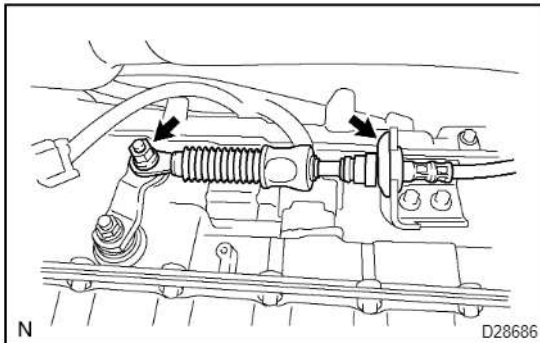


- (d) Remove the 2 nuts and disconnect the transmission control cable assy from body.

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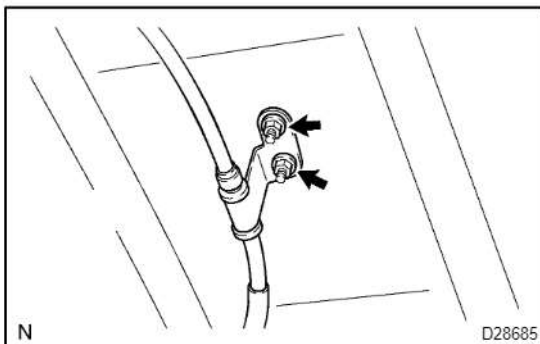


- (e) Remove the lock plate and transmission control cable bracket.
- (f) Remove the nut and transmission control cable assy.

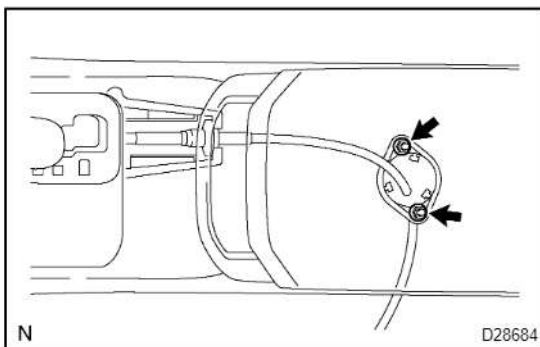


7. INSTALL TRANSMISSION CONTROL CABLE ASSY

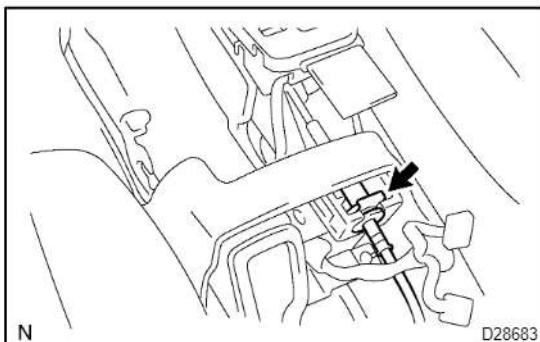
- (a) Install the transmission control cable assy with the nut.
Torque: 12 N·m (122 kgf·cm, 9ft·lbf)
- (b) Install the transmission control cable bracket and lock plate.



- (c) Connect the transmission control cable with the 2 nuts to body.



- (d) Connect the transmission control cable with the 2 bolts to body.

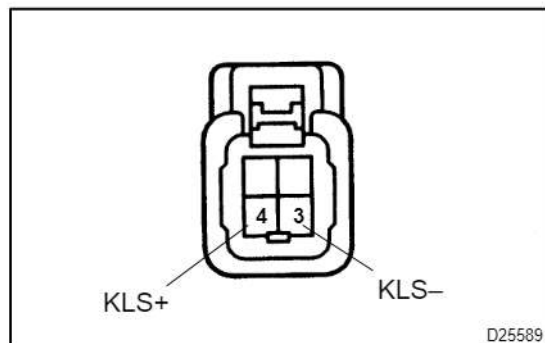


- (e) Connect the transmission control cable with the lock plate to floor shift assy.
- (f) Install the transmission control cable to floor shift assy.

8. INSTALL CONSOLE BOX ASSY REAR
9. INSTALL CONSOLE UPPER PANEL GARNISH NO.2
10. INSTALL CONSOLE UPPER PANEL GARNISH NO.1
11. INSTALL CONSOLE PANEL SUB-ASSY UPPER
12. INSTALL CONSOLE UPPER REAR PANEL SUB-ASSY

KEY INTER LOCK SOLENOID INSPECTION

40085-05



1. INSPECT KEY INTER LOCK SOLENOID

- (a) Disconnect the solenoid connector.
- (b) Connect KLS+ (4) terminal to the batteries' positive (+) terminal, and KLS- (3) terminal to the battery negative (-) terminal, and apply about 12V between KLS+ – KLS- terminals.

Check that operation noise can be heard from the solenoid.

If the solenoid does not operate, replace the solenoid.