

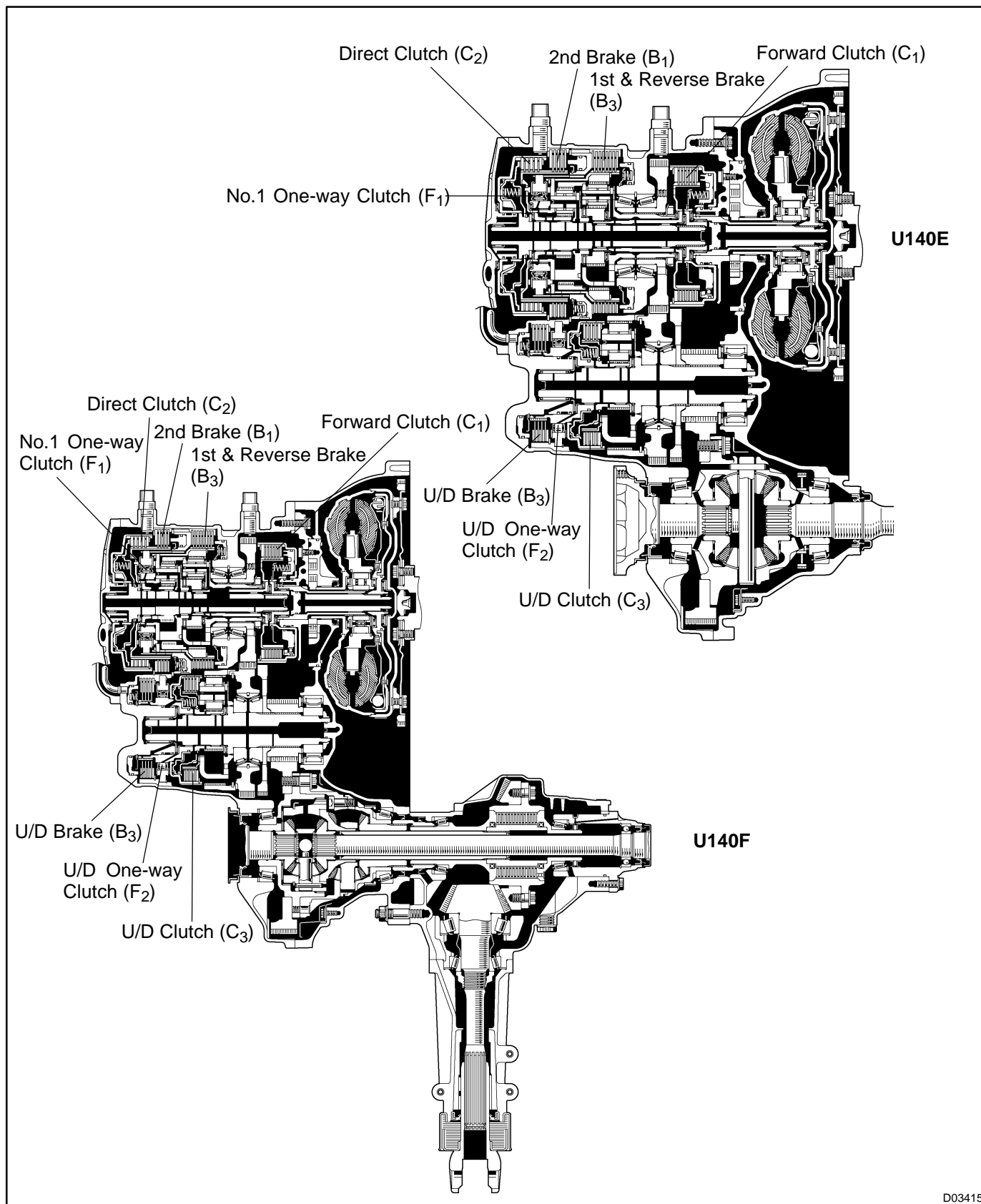
AUTOMATIC TRANSAXLE SYSTEM

PRECAUTION

AX042-01

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

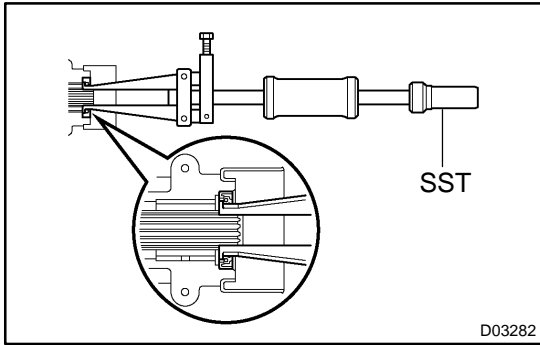
OPERATION



D03415

• ... Operating

Shift lever position	Gear position	C ₁	C ₂	C ₃	B ₁	B ₂	B ₃	F ₁	F ₂
P	Parking						•		
R	Reverse		•			•	•		
N	Neutral						•		
D	1st	•					•	•	•
	2nd	•			•		•		•
	3rd	•	•				•		•
	O/D	•	•	•					
2	1st	•					•	•	•
	2nd	•			•		•		•
L	1st	•				•	•	•	•

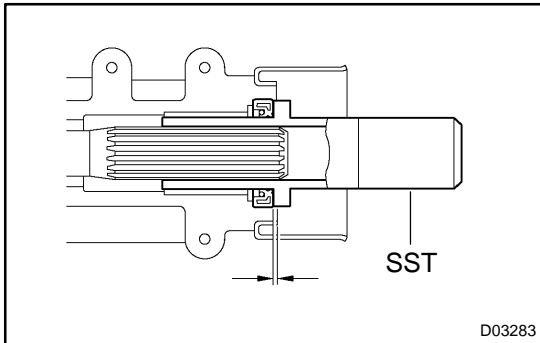


EXTENSION HOUSING OIL SEAL ON-VEHICLE REPAIR

1. DRAIN TRANSFER OIL
2. REMOVE PROPELLER SHAFT (See page [PR-3](#))
3. REMOVE EXTENSION HOUSING OIL SEAL

Using SST, remove the oil seal.

SST 09308-00010



4. INSTALL EXTENSION HOUSING OIL SEAL

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

SST 09325-20010

Oil seal depth: 1.5 ± 0.4 mm (0.059 ± 0.016 in.)

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

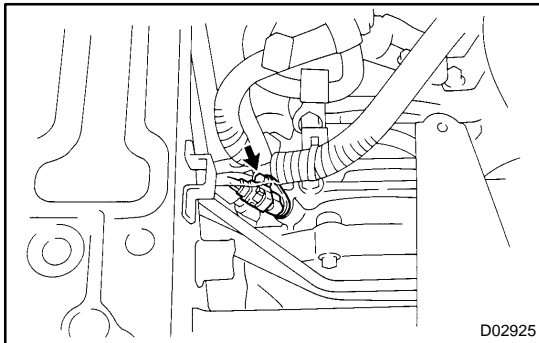
5. INSTALL PROPELLER SHAFT (See page [PR-10](#))

6. FILL TRANSFER OIL

SPEED SENSOR ON-VEHICLE REPAIR

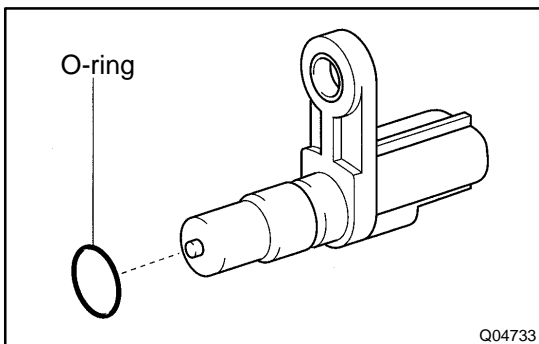
AX09L-01

1. REMOVE BATTERY
2. REMOVE AIR CLEANER ASSEMBLY



3. DISCONNECT INPUT TURBINE SPEED SENSOR CONNECTOR

4. REMOVE INPUT TURBINE SPEED SENSOR
 - (a) Remove the bolt and input turbine speed sensor.



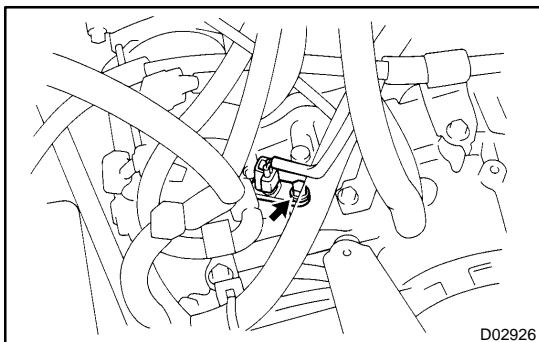
- (b) Remove the O-ring from the input turbine speed sensor.

5. INSTALL INPUT TURBINE SPEED SENSOR

- (a) Coat a new O-ring with ATF and install it to the input turbine speed sensor.
- (b) Install the input turbine speed sensor with the bolt.

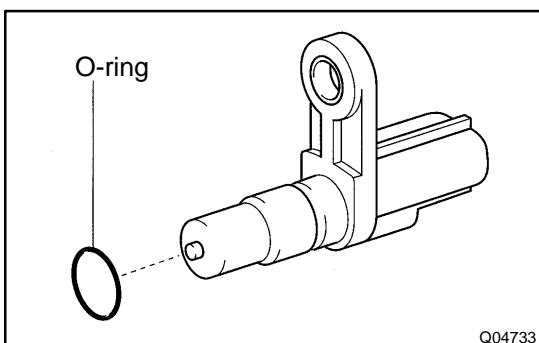
Torque: 11 N·m (115 kgf·cm, 8 ft·lbf)

6. CONNECT INPUT TURBINE SPEED SENSOR CONNECTOR



7. DISCONNECT COUNTER GEAR SPEED SENSOR CONNECTOR

8. REMOVE COUNTER GEAR SPEED SENSOR
 - (a) Remove the bolt and counter gear speed sensor.



- (b) Remove the O-ring from the counter gear speed sensor.

9. INSTALL COUNTER GEAR SPEED SENSOR

- (a) Coat a new O-ring with ATF and install it to the counter gear speed sensor.
- (b) Install the counter gear speed sensor with the bolt.

Torque: 11 N·m (115 kgf·cm, 8 ft·lbf)

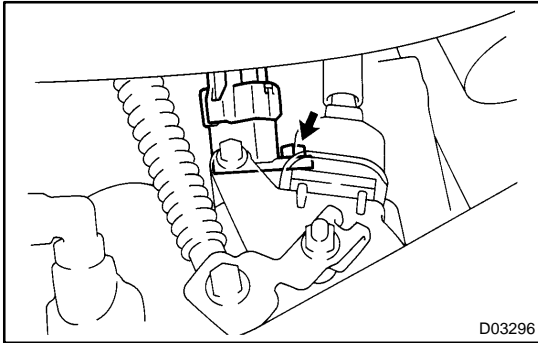
10. CONNECT COUNTER GEAR SPEED SENSOR CONNECTOR

11. INSTALL AIR CLEANER ASSEMBLY
12. INSTALL BATTERY

ATF TEMPERATURE SENSOR ON-VEHICLE REPAIR

AX090-01

1. REMOVE VALVE BODY (See page [AX-9](#))



2. DISCONNECT SOLENOID CONNECTOR
3. REMOVE ATF TEMPERATURE SENSOR

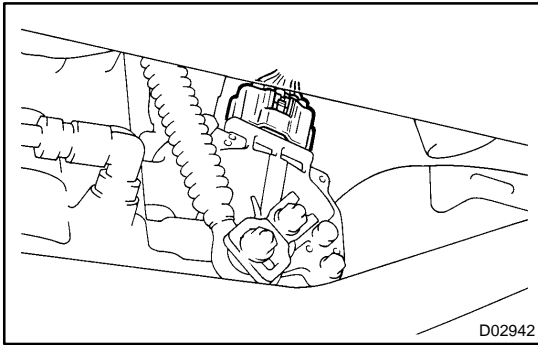
Remove the bolt and solenoid wire.

4. INSTALL ATF TEMPERATURE SENSOR

Install the solenoid wire with the bolt.

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

5. CONNECT SOLENOID CONNECTOR
6. INSTALL VALVE BODY (See page [AX-9](#))

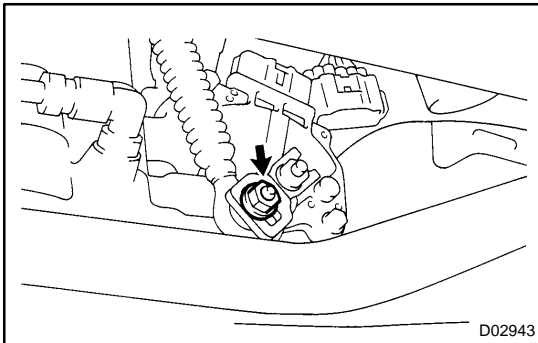


PARK/NEUTRAL POSITION (PNP) SWITCH

AX09N-01

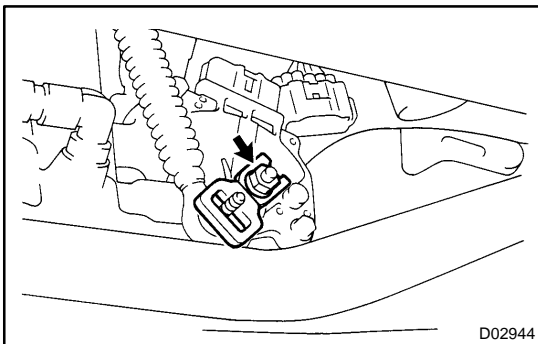
ON-VEHICLE REPAIR

1. REMOVE ENGINE UNDER COVER
2. DISCONNECT PARK/NEUTRAL POSITION SWITCH CONNECTOR

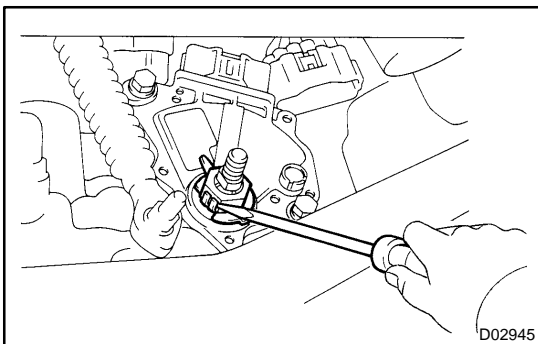


3. REMOVE PARK/NEUTRAL POSITION SWITCH

- (a) Remove the nut.

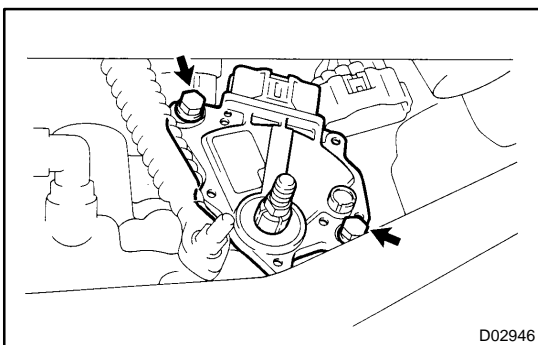


- (b) Remove the nut, washer and control shaft lever.



- (c) Using a screwdriver, pry off the lock plate.

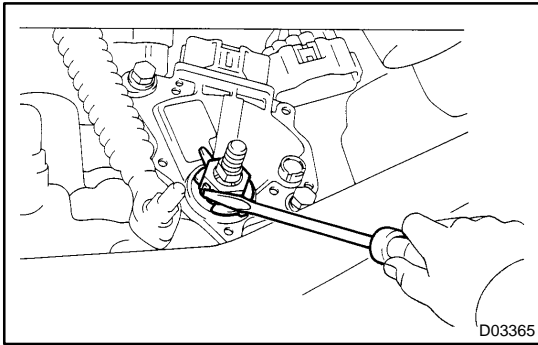
- (d) Remove the nut and lock plate.



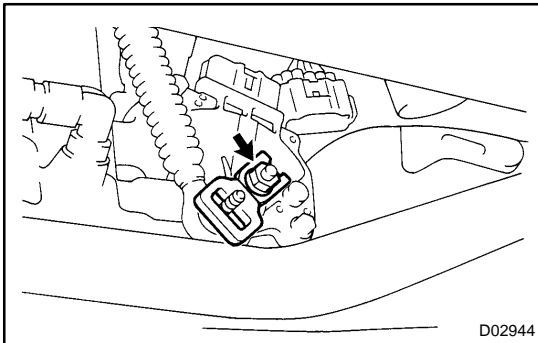
- (e) Remove the 2 bolts and pull out the park/neutral position switch.

4. INSTALL AND ADJUST PARK/NEUTRAL POSITION SWITCH

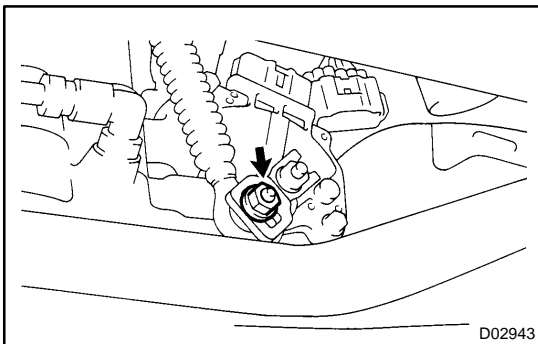
- (a) Install the park/neutral position switch with the 2 bolts.
Torque: 5.4 N·m (55 kgf·cm, 48 in.-lbf)



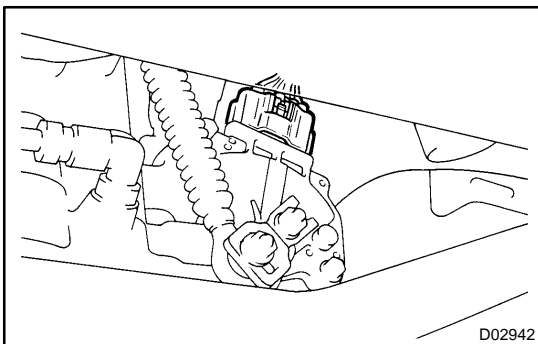
- (b) Install a new lock plate and nut.
Torque: 6.9 N·m (70 kgf·cm, 61 in.-lbf)
- (c) Bend the claws on the lock plate to fix the nut.



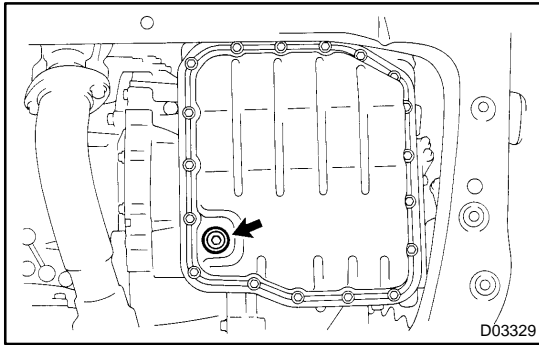
- (d) Install the control shaft lever with the nut.
Torque: 13 N·m (130 kgf·cm, 9 ft-lbf)



- (e) Connect the shift control cable to the control shaft.
Torque: 15 N·m (150 kgf·cm, 11 ft-lbf)



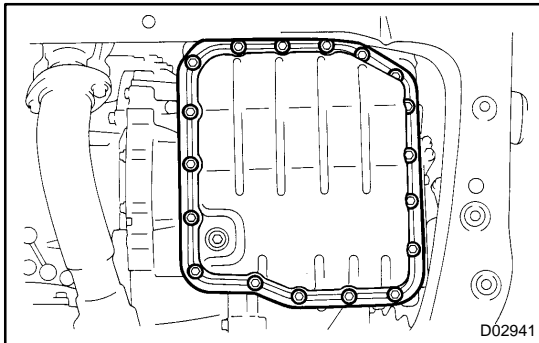
5. **CONNECT PARK/NEUTRAL POSITION SWITCH CONNECTOR**
6. **CHECK PARK/NEUTRAL POSITION OPERATION**
 Check that the engine can be started with the shift lever only in the N or P position, but not in other position.
 If the engine can not be started as stated above, carry out the adjustment procedure (See page [DI-216](#)).
7. **INSTALL ENGINE UNDER COVER**
8. **TEST DRIVE VEHICLE**



VALVE BODY ASSEMBLY ON-VEHICLE REPAIR

AX09P-01

1. REMOVE ENGINE UNDER COVER
2. REMOVE DRAIN PLUG AND DRAIN ATF

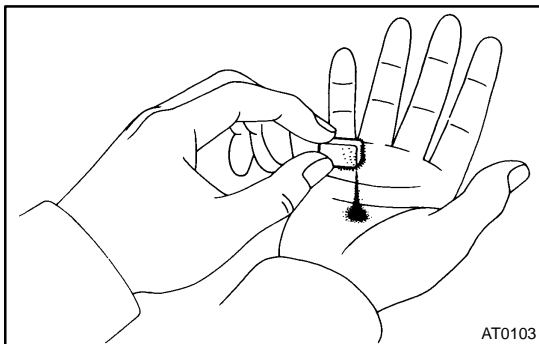


3. REMOVE OIL PAN AND GASKET

NOTICE:

Some fluid will remain in the oil pan.

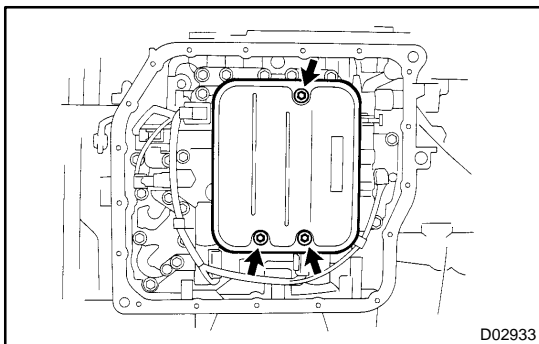
Remove the 18 bolts, and carefully remove the oil pan assembly. Discard the gasket.



4. EXAMINE PARTICLES IN OIL PAN

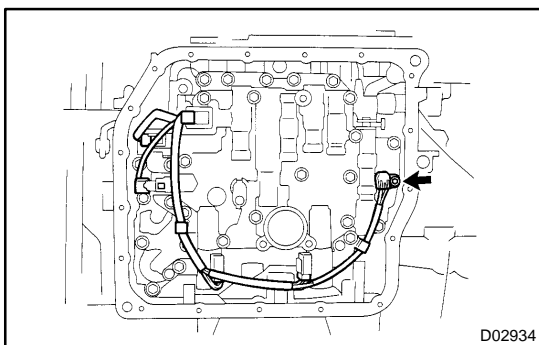
Remove the magnets and use them to collect any steel chips. Look carefully at the chips and particles in the pan and on the magnet to anticipate what type of wear you will find in the trans-axle.

Steel (magnetic)...bearing, gear and plate wear
Brass (non-magnetic)... bushing wear

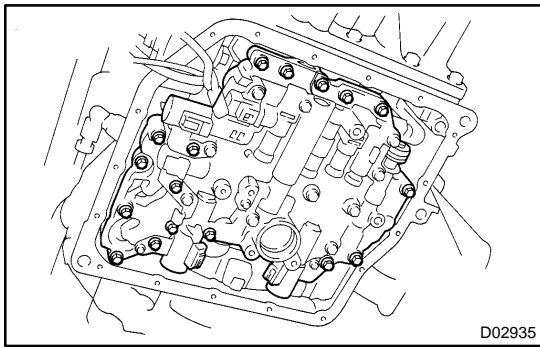


5. REMOVE OIL STRAINER

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



6. DISCONNECT 5 SHIFT SOLENOID VALVE CONNECTORS
7. REMOVE ATF TEMPERATURE SENSOR
Remove the bolt and lock plate, and remove the ATF temperature sensor.
8. SEPARATE WIRE HARNESS FROM 2 CLAMPS

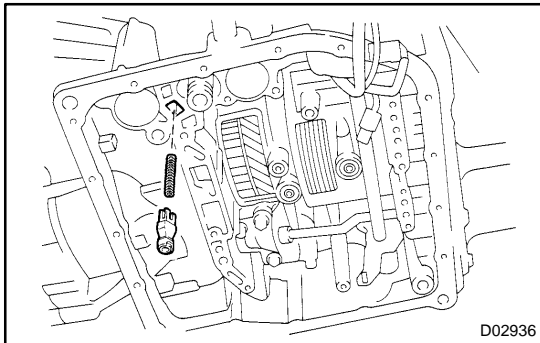


9. REMOVE VALVE BODY

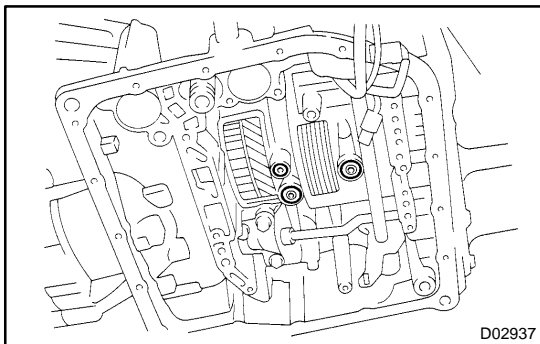
Remove the 17 bolts and valve body.

NOTICE:

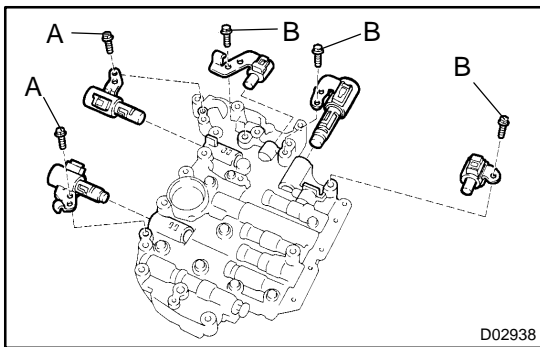
Be careful not to drop the check valve body, spring and accumulator piston.



10. REMOVE CHECK BALL BODY AND SPRING



11. REMOVE 3 APPLY GASKETS



12. REMOVE SHIFT SOLENOID VALVE

Remove the 5 bolts and 5 shift solenoid valves.

13. INSTALL SHIFT SOLENOID VALVE

Install the 5 shift solenoid valves with the 5 bolts.

Torque:

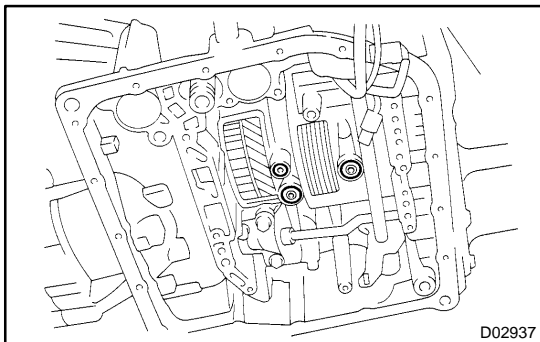
Bolt A: 6.6 N·m (67 kgf·cm, 58 in.-lbf)

Bolt B: 11 N·m (110 kgf·cm, 8 ft-lbf)

Bolt length:

Bolt A: 12 mm (0.47 in.)

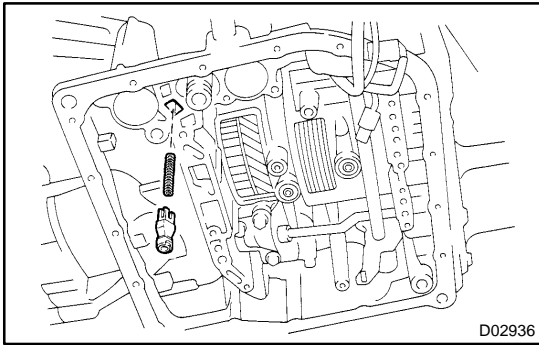
Bolt B: 45 mm (1.77 in.)



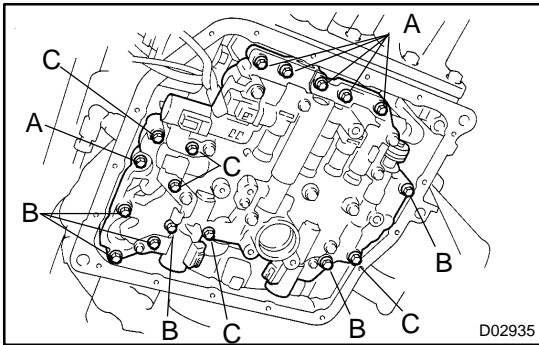
14. INSTALL APPLY GASKET

(a) Coat 3 new apply gaskets with ATF.

(b) Install the gaskets to the transaxle case.



15. INSTALL CHECK VALVE AND SPRING



16. INSTALL VALVE BODY

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

(b) Temporarily install the valve body with the 17 bolts.

Bolt length:

Bolt A: 25 mm (0.98 in.)

Bolt B: 41 mm (1.61 in.)

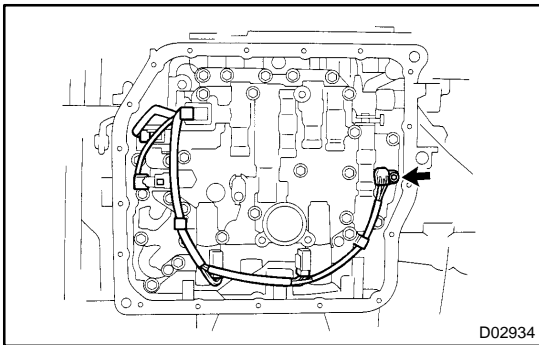
Bolt C: 45 mm (1.77 in.)

(c) Check that the manual valve lever contacts the center of the roller at the tip of the detent spring.

(d) Tighten the 17 bolts.

Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)

17. CLAMP WIRE HARNESS TO 2 CLAMPS

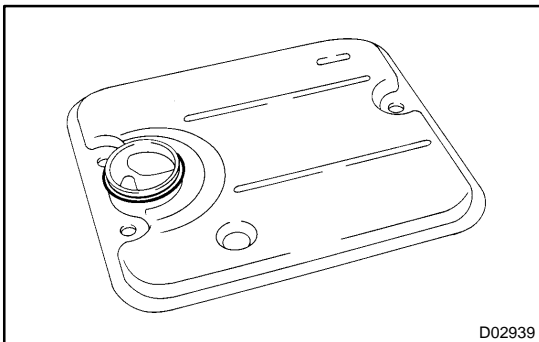


18. INSTALL ATF TEMPERATURE SENSOR

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

Torque: 6.6 N·m (67 kgf·cm, 58 in.-lbf)

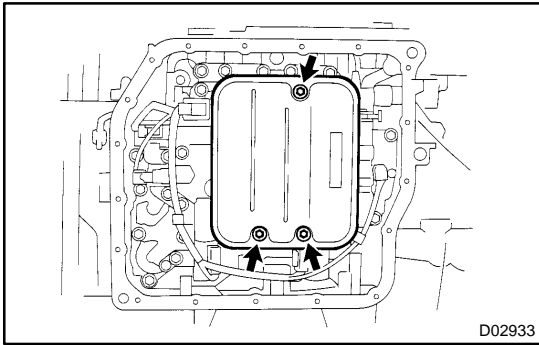
19. CONNECT 5 SHIFT SOLENOID VALVE CONNECTORS



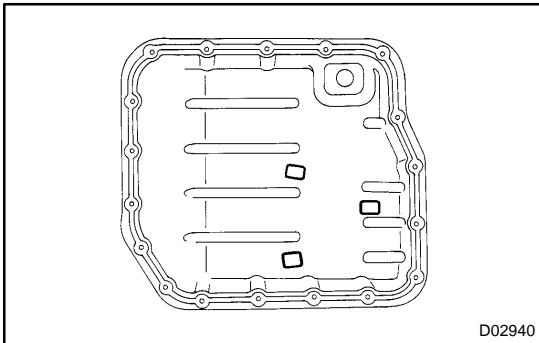
20. INSTALL OIL STRAINER

(a) Coat a new O-ring with ATF.

(b) Install the O-ring to the oil strainer.

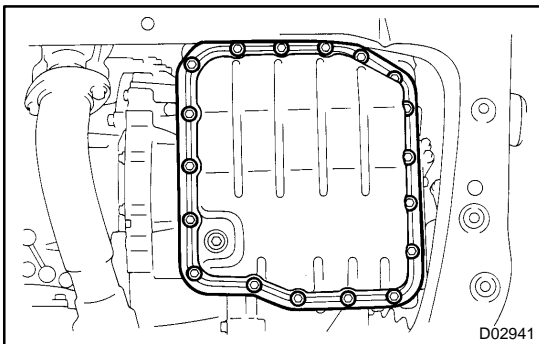


- (c) Install the oil strainer with the 3 bolts.
Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)



21. INSTALL MAGNET IN OIL PAN

Install the 3 magnets in the oil pan, as shown in the illustration.



22. INSTALL OIL PAN

Install the oil pan and a new gasket with the 18 bolts.

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

23. INSTALL DRAIN PLUG

Install a new gasket and drain plug.

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

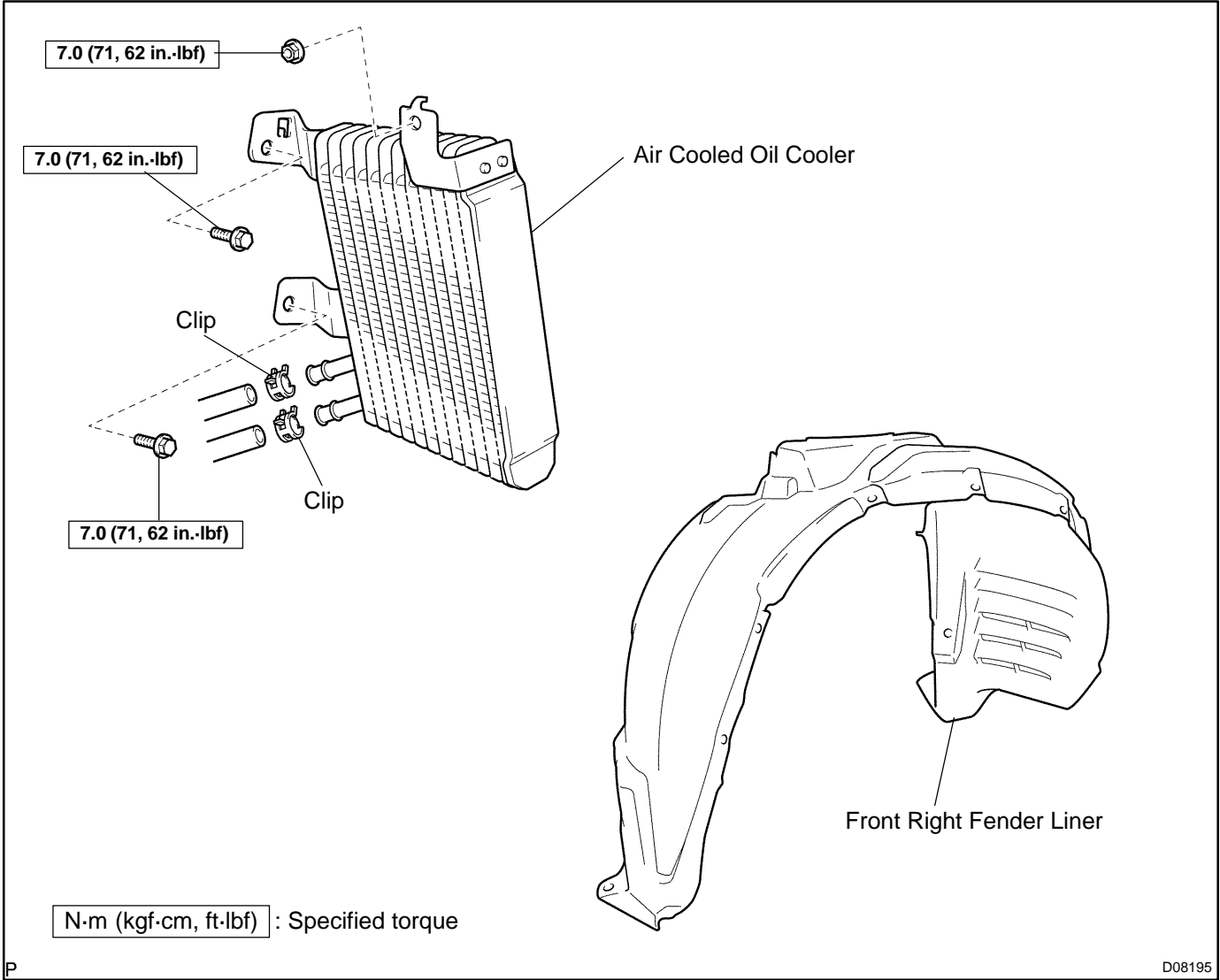
24. FILL ATF AND CHECK ATF LEVEL

(See page [DI-216](#))

25. INSTALL ENGINE UNDER COVER

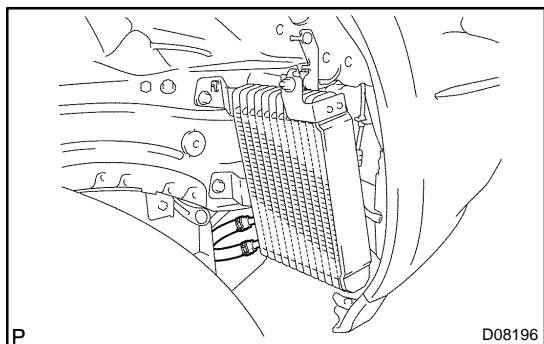
AIR COOLED OIL COOLER COMPONENTS

AX11N-01



REMOVAL

1. REMOVE FRONT RIGHT FENDER LINER



2. DISCONNECT OIL COOLER HOSE

Loosen the 2 clips and disconnect the 2 oil cooler hose.

3. REMOVE OIL COOLER

(a) Remove the nut.

Torque: 7.0 N·m (71 kgf-cm, 62 in.-lbf)

(b) Remove the 2 bolts and oil cooler assembly.

Torque: 7.0 N·m (71 kgf-cm, 62 in.-lbf)

INSTALLATION

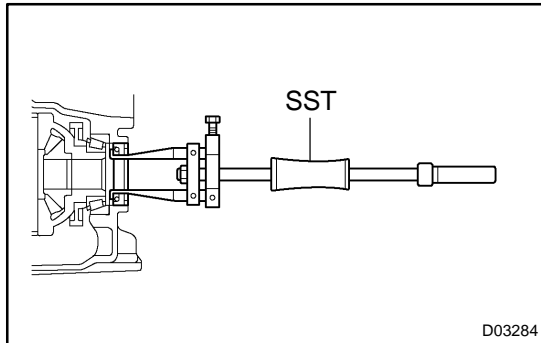
Installation is in the reverse order of removal (See page [AX-14](#)).

HINT:

Fill ATF and check the fluid level (See page [DI-216](#)).

DIFFERENTIAL OIL SEAL ON-VEHICLE REPAIR

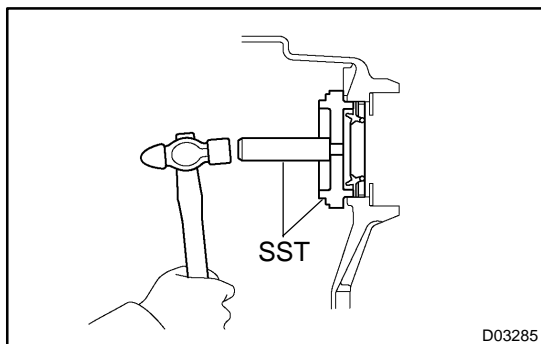
1. DRAIN ATF
2. U140F:
DRAIN TRANSFER OIL
3. REMOVE LH AND RH DRIVE SHAFT
(U140E: See page SA-18)
(U140F: See page SA-29)



4. REMOVE LH AND RH SIDE OIL SEAL

Using SST, drive out both the side oil seals.

SST 09308-00010



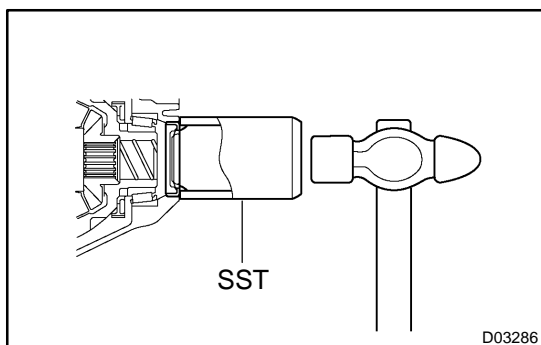
5. INSTALL LH SIDE OIL SEAL

- (a) Using SST and a hammer, drive in a new oil seal until its surface is flush until the case surface.

SST 09350-32014 (09351-32111, 09351-32130)

Oil seal drive in depth: 0 ± 0.5 mm (0 ± 0.020 in.)

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



6. U140E:

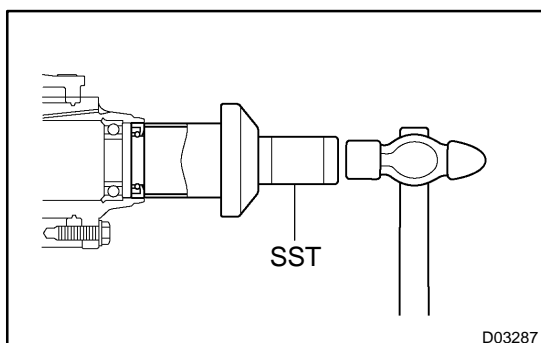
INSTALL RH SIDE OIL SEAL

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

SST 09223-00010

Oil seal drive in depth: 0 ± 0.5 mm (0 ± 0.020 in.)

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



7. U140F:

INSTALL RH SIDE OIL SEAL

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

SST 09223-4601 1

Oil seal drive in depth: 1 ± 0.3 mm (0.039 ± 0.012 in.)

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

8. INSTALL LH AND RH DRIVE SHAFT

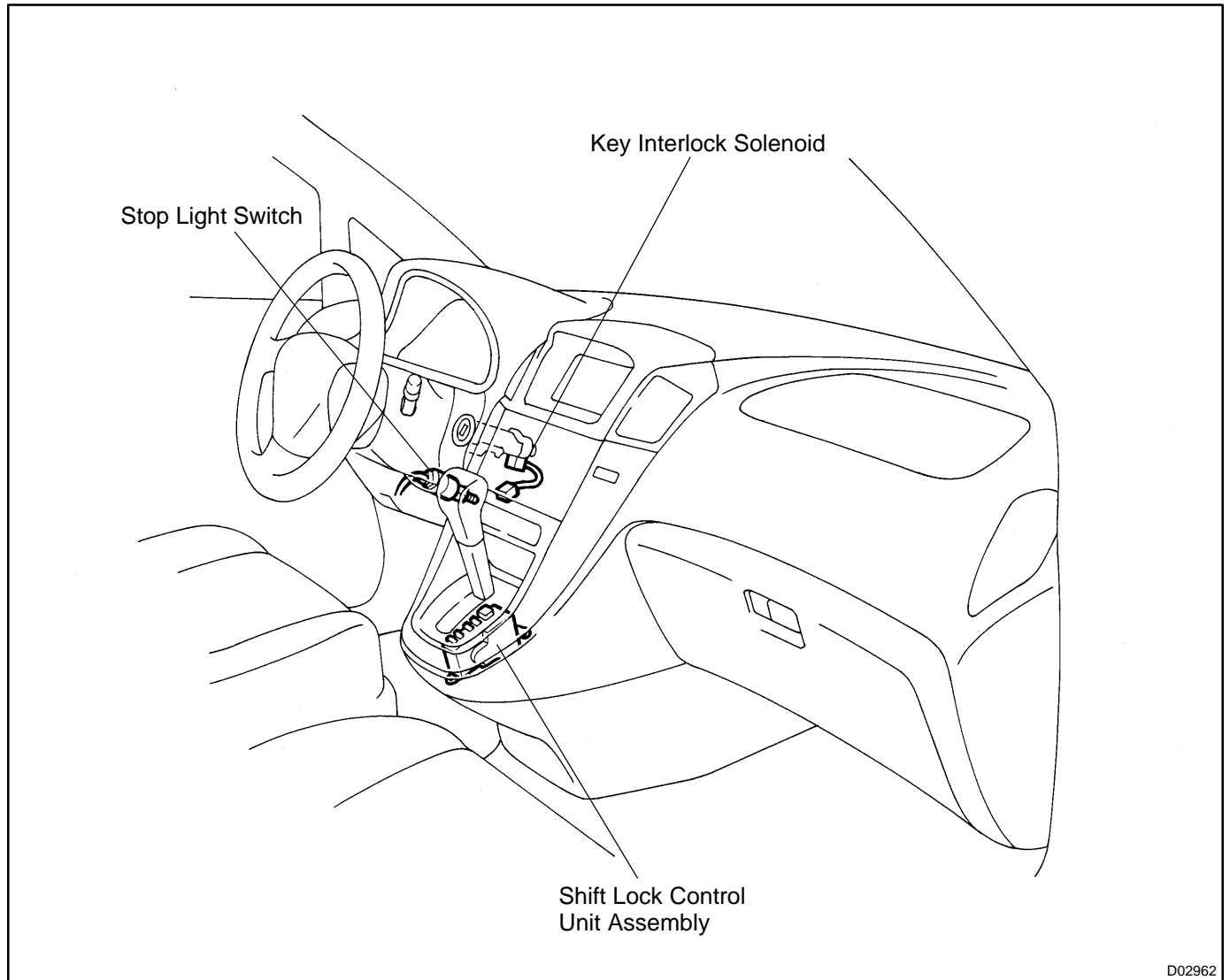
(U140E: See page SA-27)

(U140F: See page SA-36)

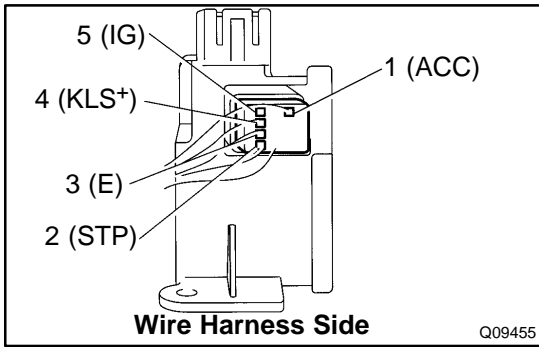
9. U140F:
FILL TRANSFER OIL
10. FILL ATF AND CHECK ATF LEVEL
(See page [DI-216](#))

SHIFT LOCK SYSTEM COMPONENTS

AX09V-01



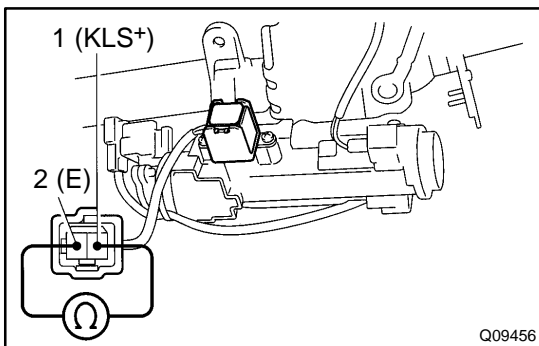
D02962



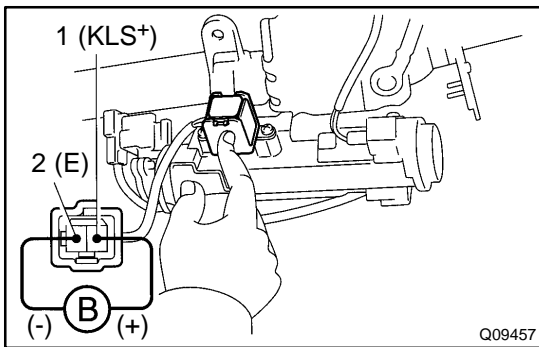
INSPECTION

1. **INSPECT SHIFT LOCK CONTROL UNIT ASSEMBLY**
Using a voltmeter, measure the voltage at each terminal.
HINT:
Do not disconnect the shift lock control unit assembly connector.

Terminal	Measuring Condition	Voltage (V)
1 - 3 (ACC - E)	Ignition switch ACC	10 - 14
5 - 3 (IG - E)	Ignition switch ON	10 - 14
2 - 3 (STP - E)	Depressing brake pedal	10 - 14
4 - 3 (KLS+ - 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 - 9.5



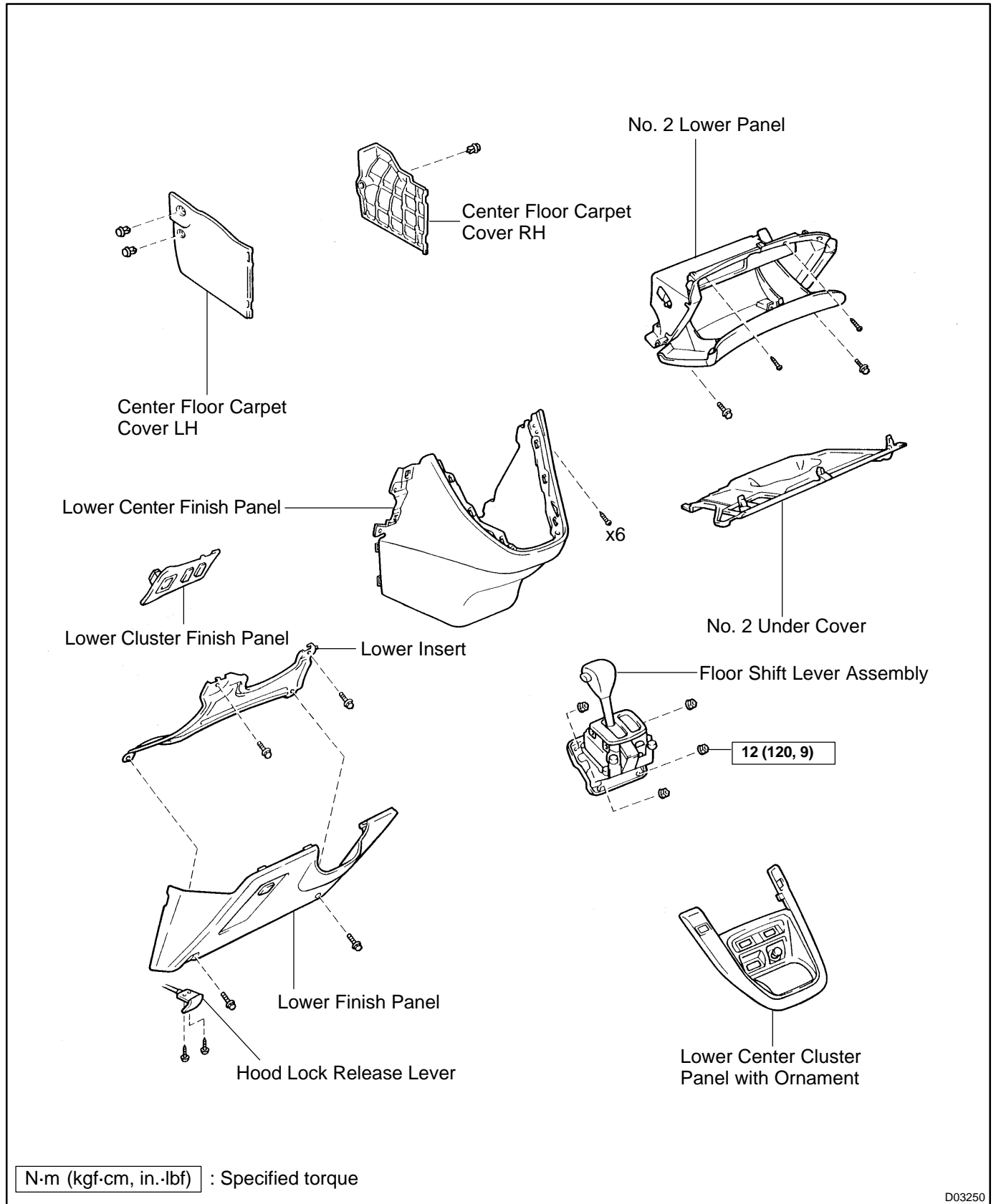
2. **INSPECT KEY INTERLOCK SOLENOID**
 - (a) Disconnect the solenoid connector.
 - (b) Using an ohmmeter, measure resistance between terminals.
Standard resistance: 12.5 - 16.5 Ω
If resistance value is not as specified, replace the solenoid.



- (c) Apply battery positive voltage between terminals. Check that an operation noise can be heard from the solenoid.
If the solenoid does not operated, replace the solenoid.

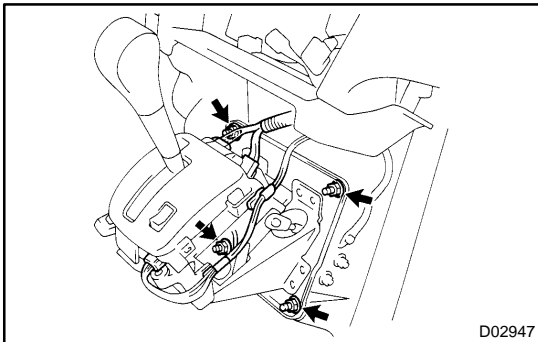
FLOOR SHIFT ASSEMBLY COMPONENTS

AX09S-04

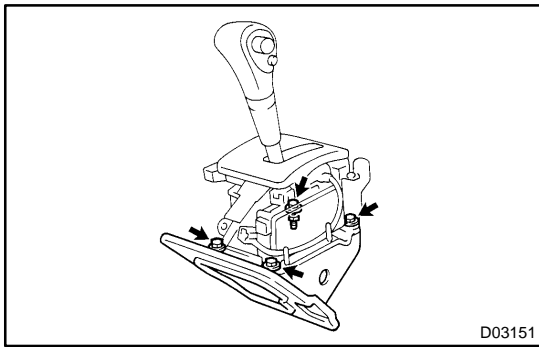


REMOVAL

1. REMOVE NO. 2 UNDER COVER (See page [BO-124](#))
2. REMOVE NO. 2 LOWER PANEL (See page [BO-124](#))
3. REMOVE LOWER CLUSTER FINISH PANEL
(See page [BO-124](#))
4. REMOVE LOWER FINISH PANEL (See page [BO-124](#))
5. REMOVE LOWER INSERT (See page [BO-124](#))
6. REMOVE LOWER CENTER CLUSTER PANEL WITH ORNAMENT (See page [BO-124](#))
7. REMOVE CENTER FLOOR CARPET COVER LH AND RH (See page [BO-124](#))
8. REMOVE LOWER CENTER FINISH PANEL
(See page [BO-124](#))



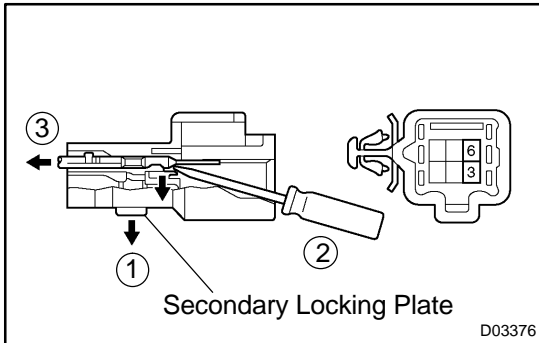
9. REMOVE FLOOR SHIFT LEVER ASSEMBLY
 - (a) Remove the 4 nuts.
Torque: 12 N·m (120 kgf-cm, 9 ft-lbf)
 - (b) Disconnect the shift control cable from the floor shift assembly.
 - (c) Disconnect the 3 connectors.
 - (d) Separate the wire harness from the floor shift assembly.
 - (e) Remove the floor shift assembly.



DISASSEMBLY

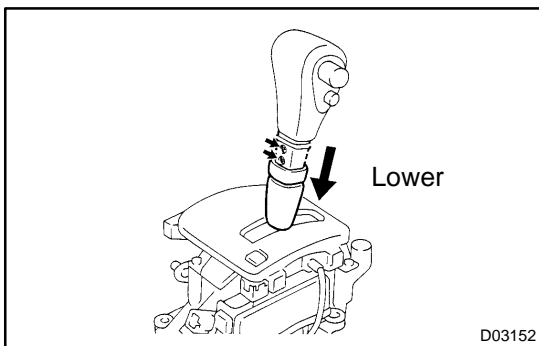
1. REMOVE SHIFT LEVER PLATE

Remove the 4 bolts, nut and shift lever plate sub-assembly.



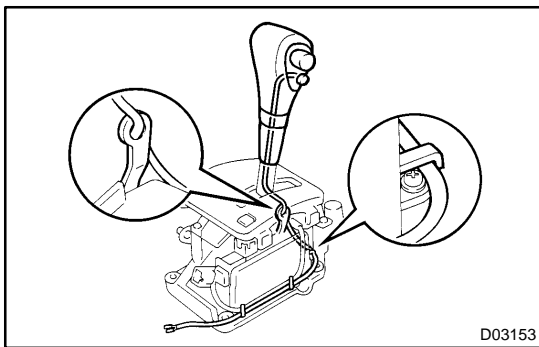
2. DISCONNECT O/D MAIN SWITCH TERMINAL

- (a) Disconnect the O/D main switch connector from the No. 2 shift lever plate.
- (b) Disengage the secondary locking device.
- (c) Using a small screwdriver, disengage the locking lug of the terminals 3 and 6, and pull the terminals out from the rear.



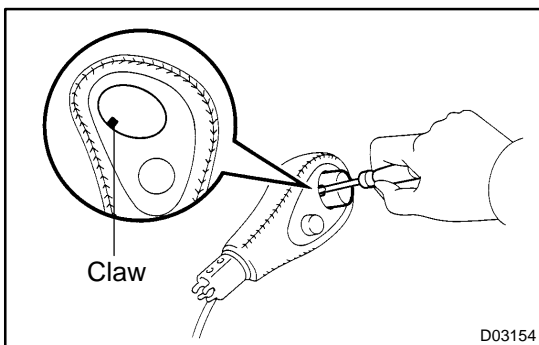
3. REMOVE 2 SHIFT LEVER SUB-ASSEMBLY SET SCREWS

- (a) Lower the shift lever knob cover.
- (b) Remove the 2 shift lever sub-assembly set screws.



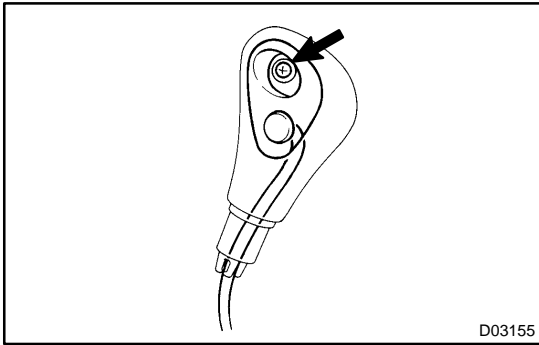
4. REMOVE SHIFT LEVER KNOB AND SHIFT LEVER KNOB COVER

- (a) Disconnect the wire harness of the O/D main switch.
- (b) Remove the shift lever knob and shift lever knob cover.



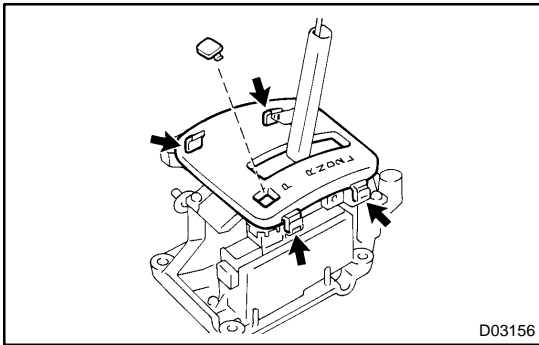
5. REMOVE SHIFT LEVER KNOB BUTTON AND COMPRESSION SPRING

- (a) Insert a small screwdriver into the position shown in the illustration and disengage the claw.
- (b) Remove the shift lever knob button and compression spring.



6. REMOVE SHIFT LEVER KNOB COVER

- (a) Remove the screw and shift lever knob cover.
- (b) Remove the O/D main switch from the shift lever knob cover.

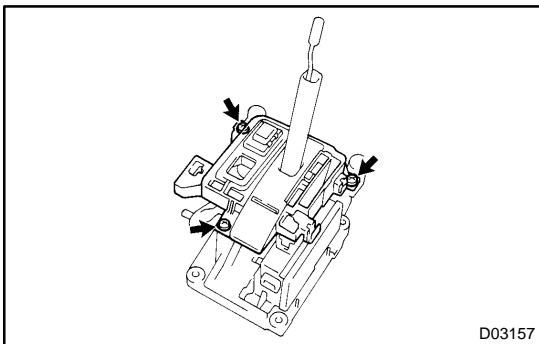


7. REMOVE CONTROL POSITION INDICATOR PLATE

- (a) Remove the control position indicator plate.
- (b) Using a small screwdriver, remove the shift lock release cover from the control position indicator plate.
- (c) Remove the slide cover.

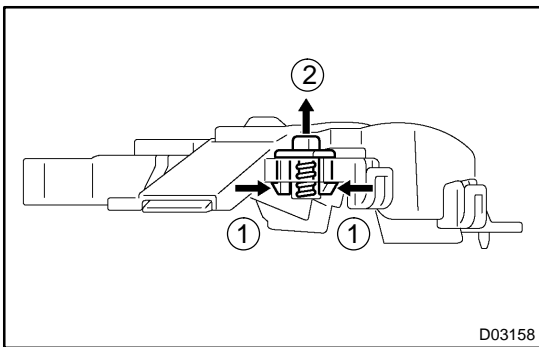
8. REMOVE INDICATOR LIGHT WIRE SUB-ASSEMBLY

- (a) Remove the indicator light wire sub-assembly from the lower position indicator housing.
- (b) Remove the bulb and cap from the indicator light wire sub-assembly .

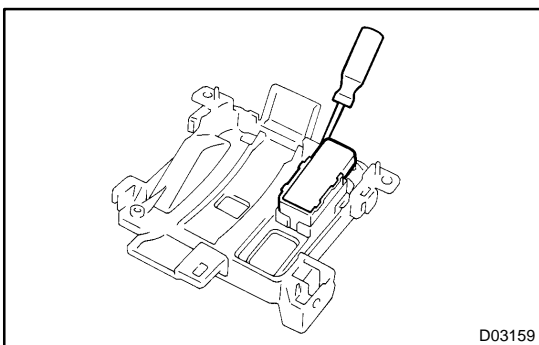


9. REMOVE LOWER POSITION INDICATOR HOUSING

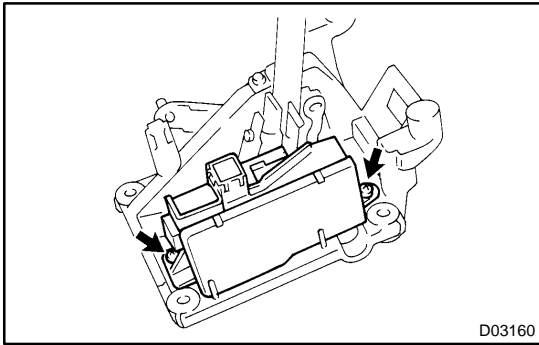
- (a) Remove the 3 screws and lower position indicator housing.



- (b) Remove the shift lock release button with the compression spring from the lower position indicator housing.
- (c) Separate the shift lock release button from the compression spring.

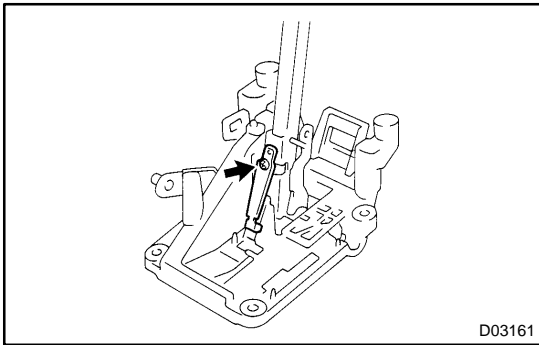


- (d) Using a small screwdriver, remove the pattern select switch from the lower position indicator housing.
- (e) Remove the slide cover from the lower position indicator housing.



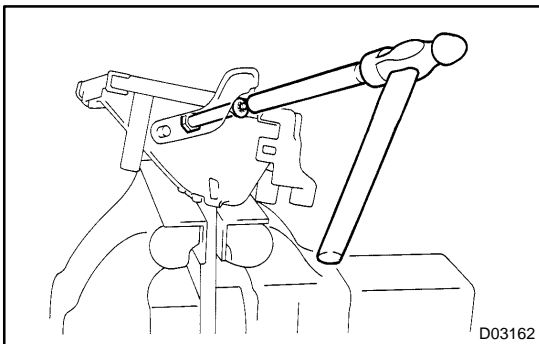
10. REMOVE SHIFT LOCK CONTROL UNIT ASSEMBLY

Remove the 2 screws and shift lock control unit assembly.



11. REMOVE MANUAL DETENT SPRING

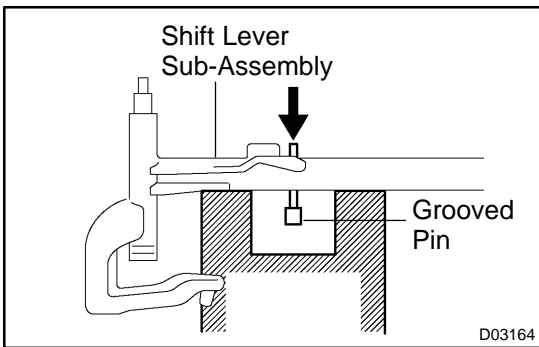
Remove the screw and manual detent spring.



12. REMOVE CONTROL SHAFT

Using a brass bar and hammer, remove the spring nut and control shaft.

13. REMOVE SHIFT LEVER SUB-ASSEMBLY

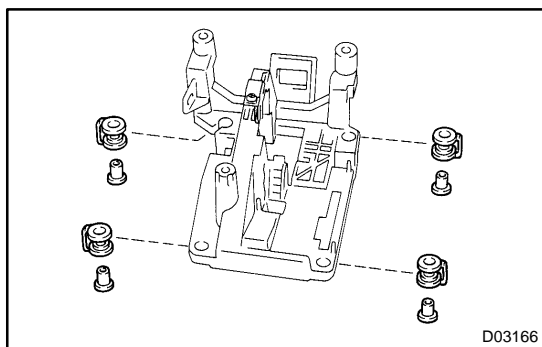


14. REMOVE GROOVED PIN

Secure the room for the pin to be released by using the vice and etc. as shown in the illustration, and hit the grooved pin with a hammer and pull the grooved pin out.

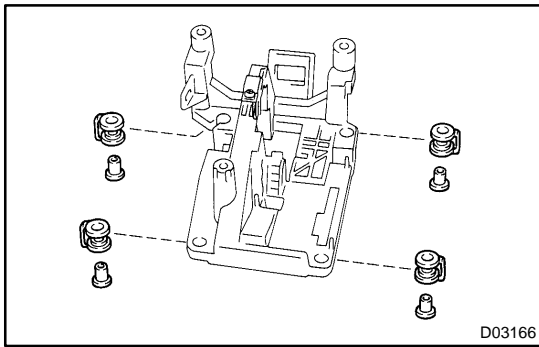
NOTICE:

- Hit and pull the pin out gradually.
 - Do not damage the shift lever sub-assembly.
- 15. REMOVE DETENT ROD, COMPRESSION SPRING AND WIRE GUIDE**
- 16. REMOVE SHIFT LEVER KNOB SLEEVE AND SHIFT LEVER SPRING SEAT FROM DETENT ROD**



17. REMOVE NO. 1 SHIFT LEVER INSERT, BUSHING AND SHIFT LEVER ANTI-RATTLE CUSHION

- (a) Remove the 4 No. 1 shift lever inserts and bushings from the No. 2 shift lever plate.
- (b) Remove the screw and shift lever anti-rattle cushion from the No. 2 shift lever plate.



REASSEMBLY

HINT:

Before reassembly, apply MP grease to the parts indicated by arrows (See page AX-20).

1. INSTALL NO. 1 SHIFT LEVER INSERT, BUSHING AND SHIFT LEVER ANTI-RATTLE CUSHION

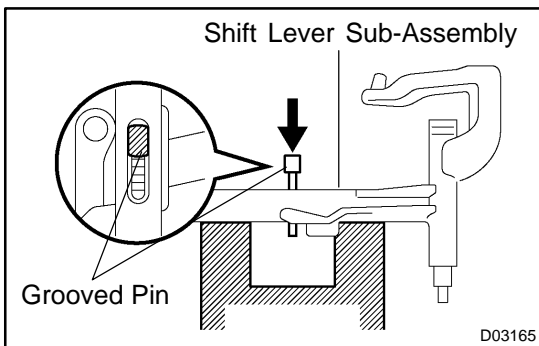
(a) Install the screw and shift lever anti-rattle cushion to the shift lever plate.

Torque: 1.8 N·m (18 kgf·cm, 16 in.-lbf)

(b) Install the 4 No. 1 shift lever inserts and bushings to the shift lever plate.

2. INSTALL SHIFT LEVER KNOB SLEEVE AND SHIFT LEVER SPRING SEAT TO DETENT ROD

3. INSTALL WIRE GUIDE, COMPRESSION SPRING AND DETENT ROD



4. INSTALL GROOVED PIN

(a) Place the shift lever sub-assembly on the table, as shown in the illustration.

(b) Using a hammer, drive in the grooved pin to the detent rod pin hole.

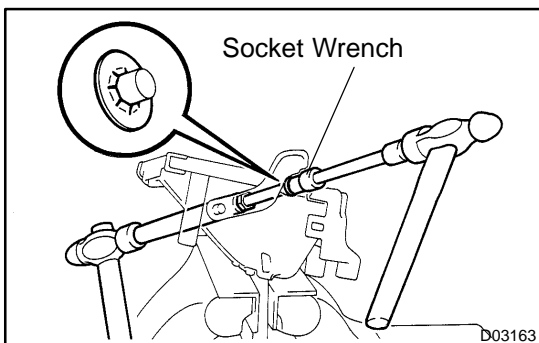
NOTICE:

- Assemble the grooved pin to ensure that it fits into the guide hole of the shift lever sub-assembly in parallel.
- Take care not to insert the pin in the wrong direction.

5. INSTALL SHIFT LEVER SUB-ASSEMBLY

NOTICE:

Pay attention to the direction of the shift lever sub-assembly.

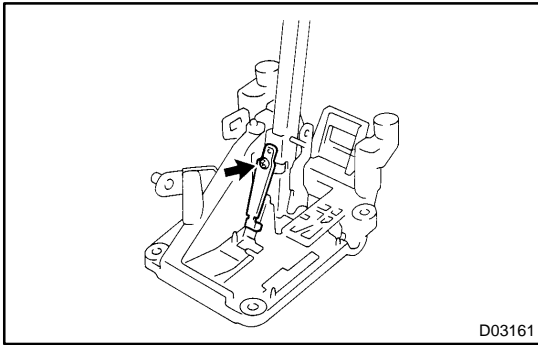


6. INSTALL CONTROL SHAFT

(a) Install the control shaft to the shift lever sub-assembly.

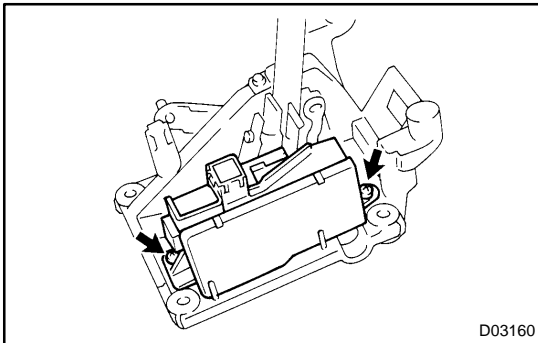
(b) Support the control shaft with a hammer and brass bar, as shown in the illustration.

(c) Using a socket wrench and hammer, drive in a new spring nut.

**7. INSTALL MANUAL DETENT SPRING**

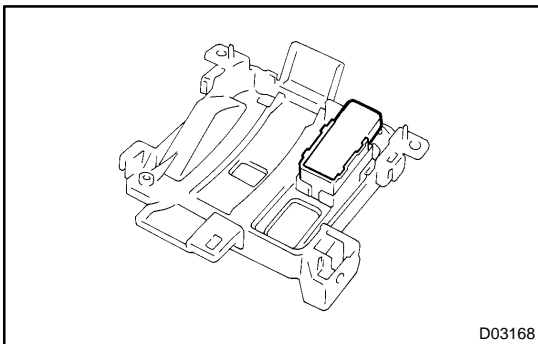
Install the screw and manual detent spring.

Torque: 1.7 N·m (17 kgf·cm, 15 in.-lbf)

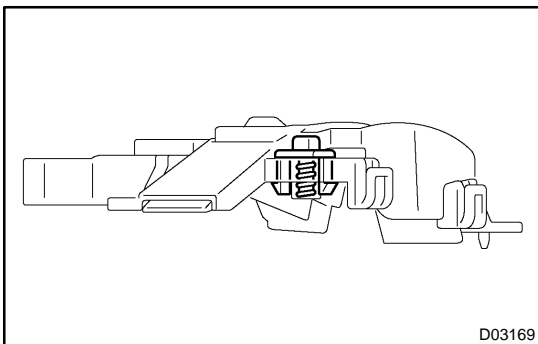
**8. INSTALL SHIFT LOCK CONTROL UNIT ASSEMBLY**

Install the 2 screws and shift lock control unit assembly.

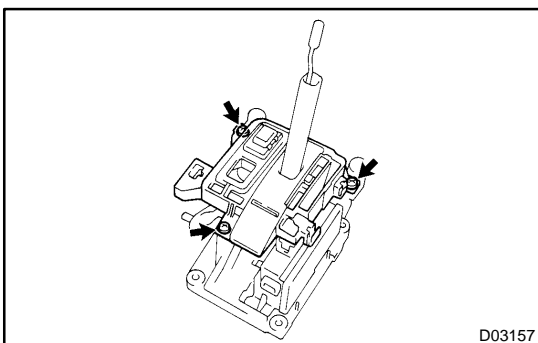
Torque: 1.8 N·m (18 kgf·cm, 16 in.-lbf)

**9. INSTALL LOWER POSITION INDICATOR HOUSING**

- (a) Install the slide cover to the lower position indicator housing.
- (b) Install the pattern select switch to the lower position indicator housing.



- (c) Install the compression spring to the shift lock release button.
- (d) Install the shift lock release button with the compression spring to the lower position indicator housing.

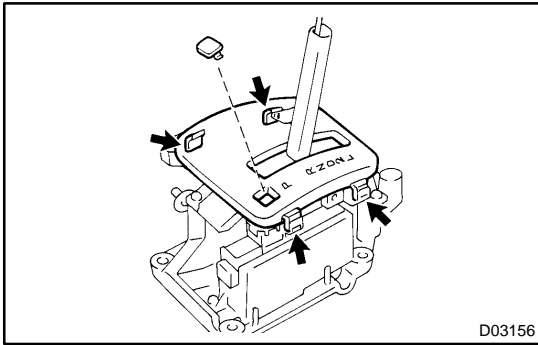


- (e) Install the 3 screws and lower position indicator housing.

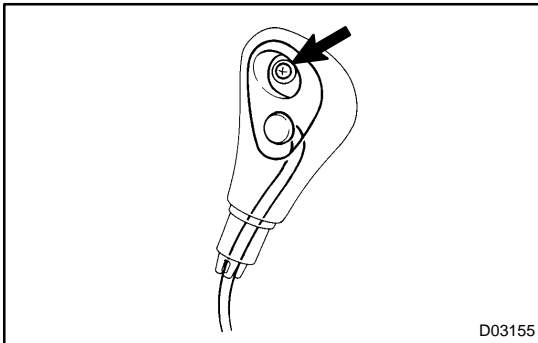
Torque: 2.2 N·m (23 kgf·cm, 19 in.-lbf)

10. INSTALL INDICATOR LIGHT WIRE SUB-ASSEMBLY

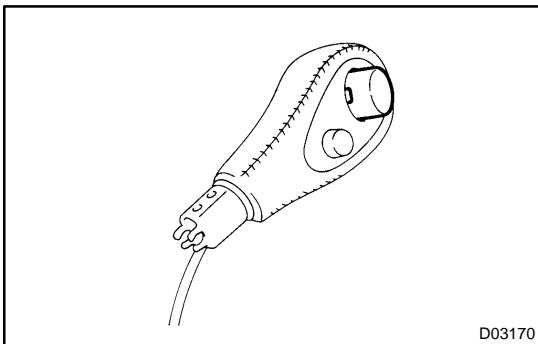
- (a) Install the bulb to the indicator light wire sub-assembly.
- (b) Install the indicator light wire sub-assembly to the lower position indicator housing.



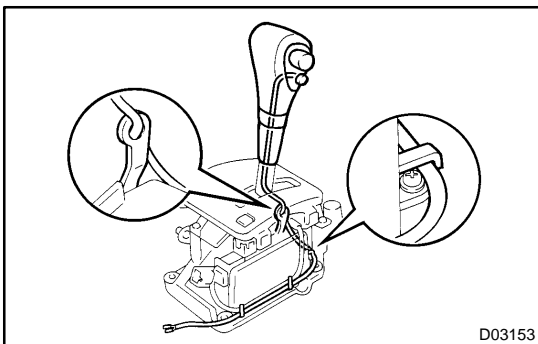
- 11. INSTALL CONTROL POSITION INDICATOR PLATE**
- (a) Install the shift lock release cover to the control position indicator plate.
 - (b) Install the control position indicator plate.



- 12. INSTALL SHIFT LEVER KNOB COVER**
- (a) Install the O/D main switch to the shift lever knob cover.
 - (b) Install the screw and shift lever knob cover.
- Torque: 1.3 N·m (14 kgf·cm, 12 in.-lbf)**



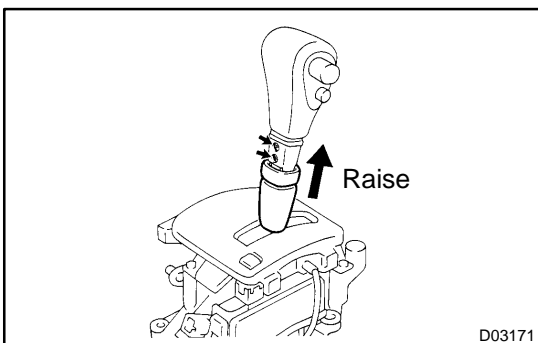
- 13. INSTALL SHIFT LEVER KNOB BUTTON AND COMPRESSION SPRING**



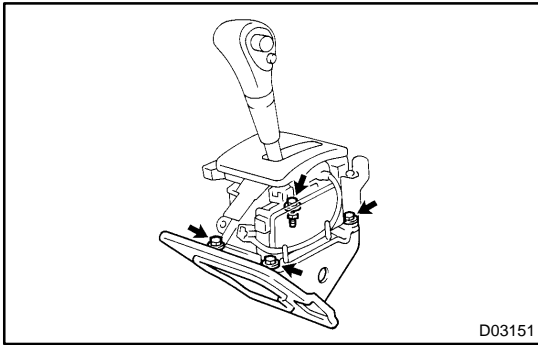
- 14. INSTALL SHIFT LEVER KNOB AND SHIFT LEVER KNOB COVER**
- (a) Pass through the wire harness of the O/D main switch as shown illustration and set it.
 - (b) Install the shift lever knob and shift lever knob cover to the shift lever sub-assembly.

NOTICE:

When operating the shift lever sub-assembly, check that excessive force is not applied to the wire harness of the O/D main switch.

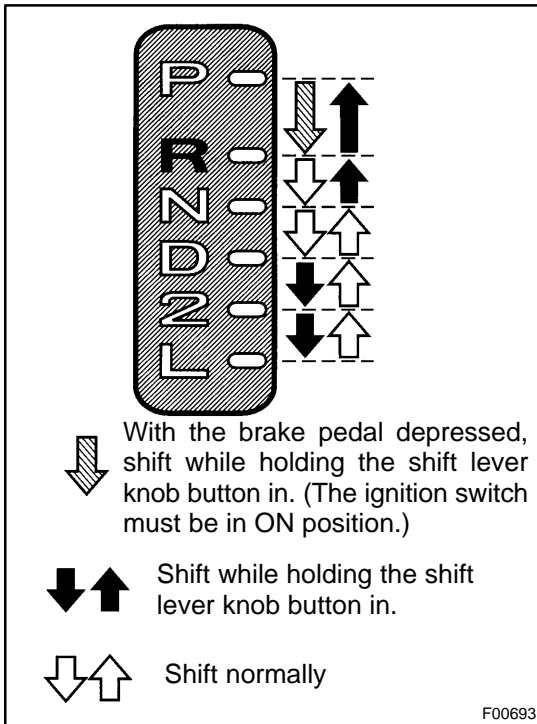


- 15. INSTALL 2 SHIFT LEVER SUB-ASSEMBLY SET SCREWS**
- (a) Install the 2 shift lever sub-assembly set screws.
- Torque: 2.2 N·m (22 kgf·cm, 19 in.-lbf)**
- (b) Raise the shift lever knob cover.
- 16. CONNECT O/D MAIN SWITCH TERMINAL**
- (a) Connect the terminals of the O/D main switch.
 - (b) Connect the O/D main switch connector to the No.2 shift lever plate.

**17. INSTALL SHIFT LEVER PLATE**

Install the 4 bolts, nut and shift lever plate sub-assembly.

Torque: 5.7 N·m (58 kgf·cm, 50 in.-lbf)



INSTALLATION

Installation is in the reverse order of removal (See page AX-22).

HINT:

After installation, inspect shift lever operation.

- When shifting it to each position, make sure that the shifting lever moves smoothly, can be moderately operated and the position indicator displays correctly.

Positions which can be operated without pressing the shift lever knob button

R → N → D, L → 2 → D → N

Positions which can be operated only with pressing the shift lever knob button

2 → L, N → R → P

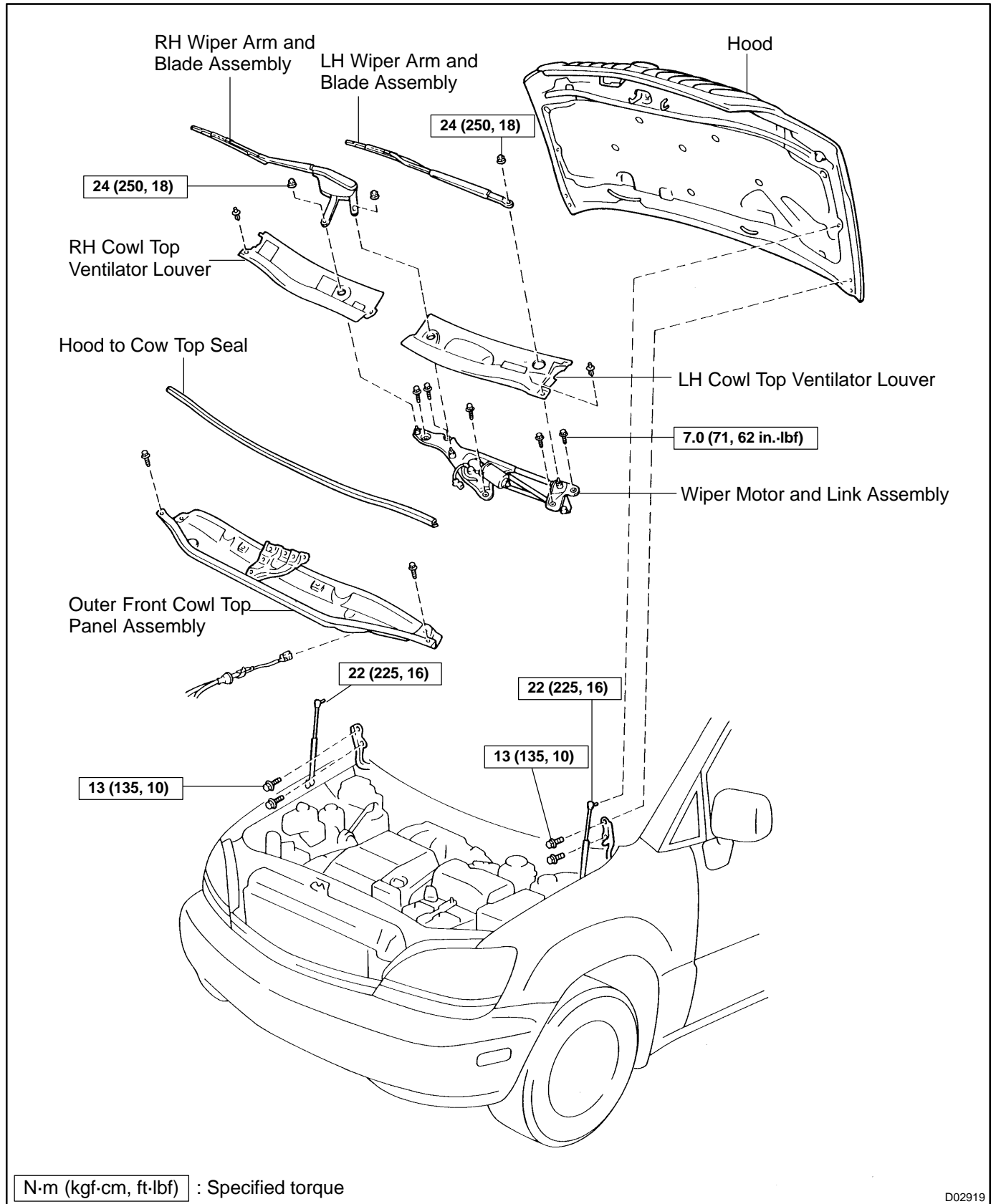
Positions which can be operated only with pressing the shift lever knob button, ignition switch ON and brake pedal depressed

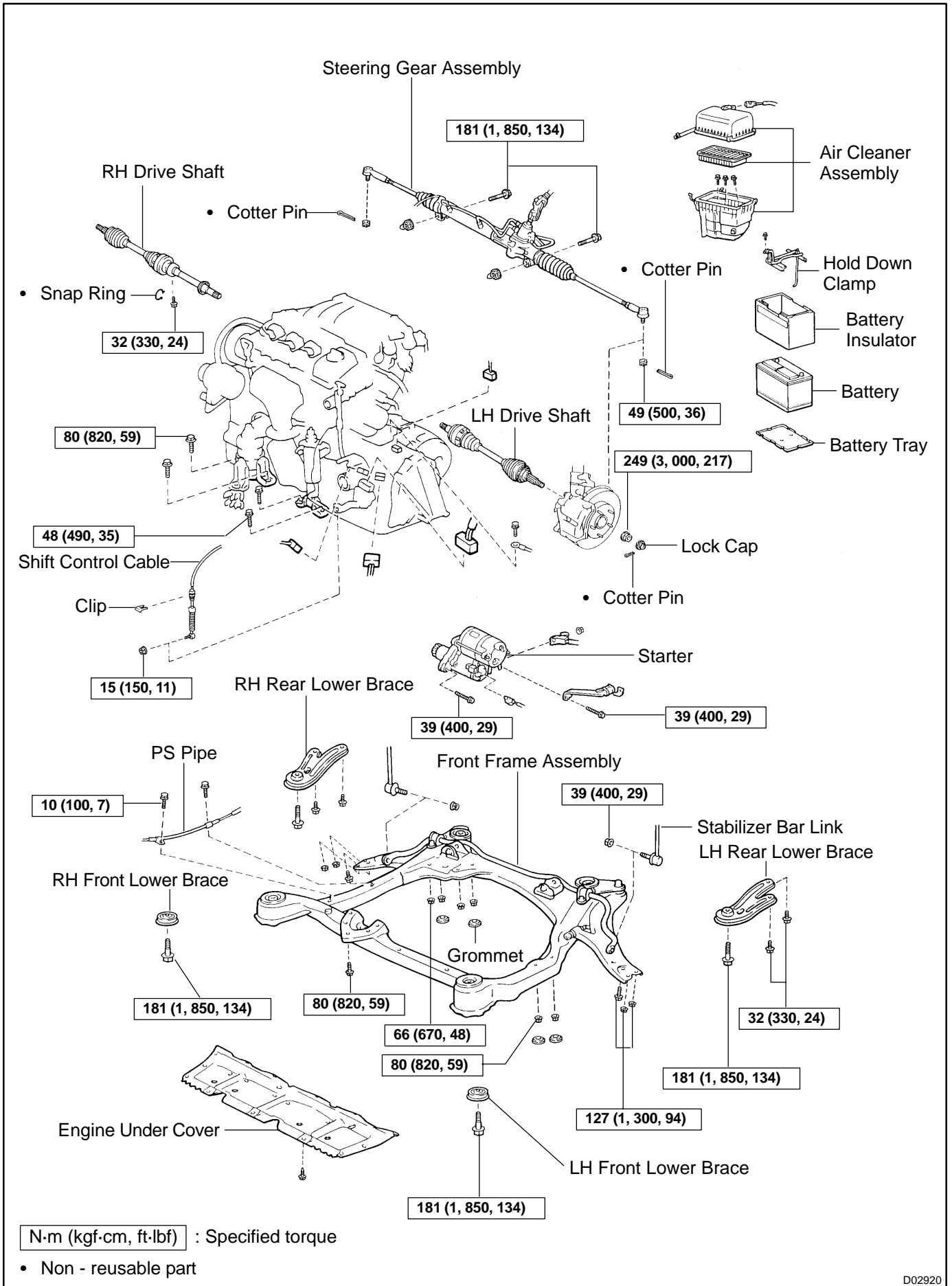
P → R

- When starting the engine, make sure that the vehicle moves forward when shifting from N to D position, and moves rearward when shifting to R position.

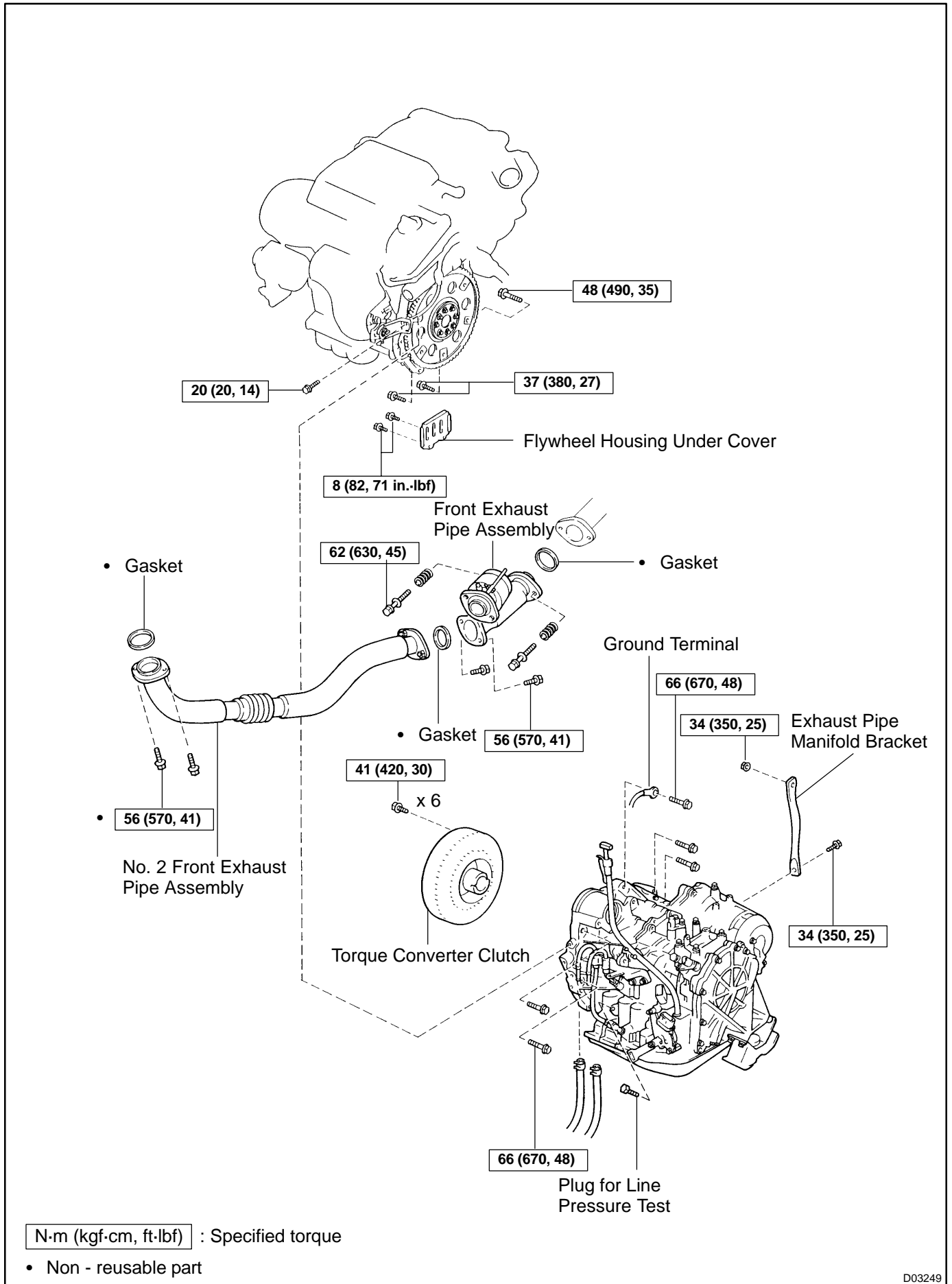
AUTOMATIC TRANSAXLE UNIT (U140E) COMPONENTS

AX09Y-02





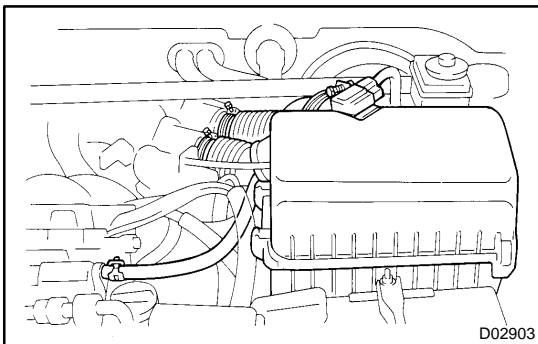
D02920



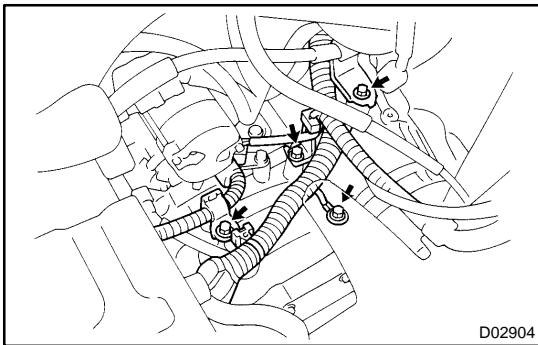
D03249

REMOVAL

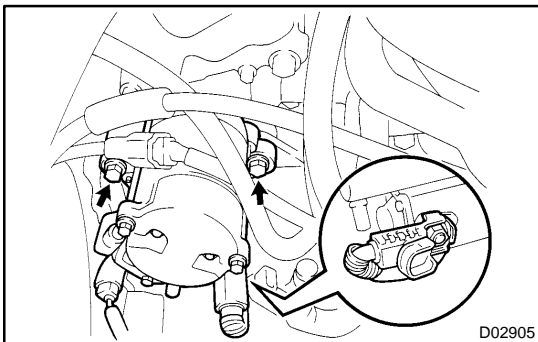
1. REMOVE HOOD (See page [BO-9](#))
2. REMOVE HOOD TO COWL TOP SEAL
(See page [BO-56](#))
3. REMOVE LH AND RH COWL TOP VENTILATOR LOUVERS (See page [BO-56](#))
4. REMOVE LH AND RH WIPER ARM AND BLADE ASSEMBLIES (See page [BO-56](#))
5. REMOVE WIPER MOTOR AND LINK ASSEMBLY
(See page [BO-56](#))
6. REMOVE OUTER FRONT COWL TOP PANEL ASSEMBLY



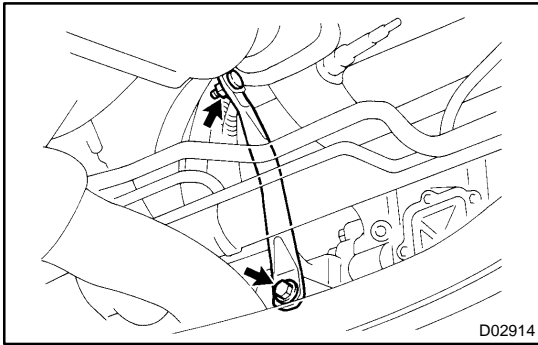
7. REMOVE AIR CLEANER ASSEMBLY
8. REMOVE BATTERY



9. DISCONNECT 2 SPEED SENSOR CONNECTORS
10. REMOVE 4 WIRE HARNESS MOUNTING BOLTS
11. SEPARATE WIRE HARNESS FROM WIRE HARNESS CLAMP

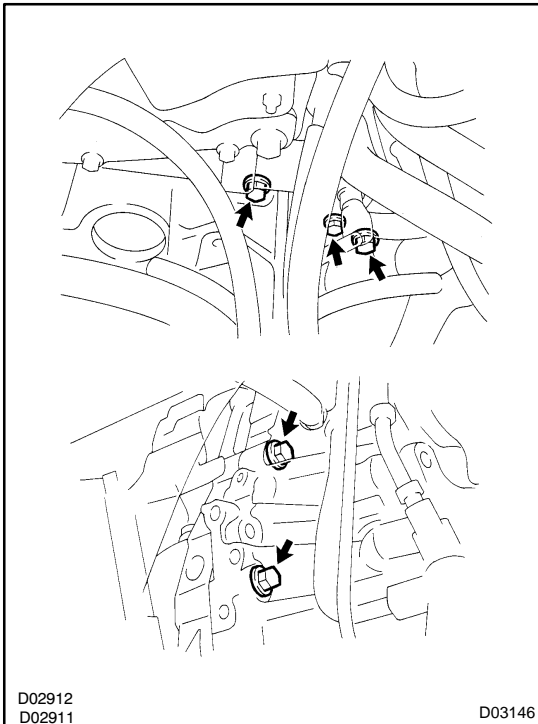


12. REMOVE STARTER
 - (a) Disconnect the connector.
 - (b) Remove the 2 starter mounting bolts.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)
 - (c) Remove the nut and disconnect the terminal.
 - (d) Remove the starter.



- 13. REMOVE EXHAUST MANIFOLD BRACKET**
 Remove the bolt, nut and exhaust manifold bracket.
 Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)

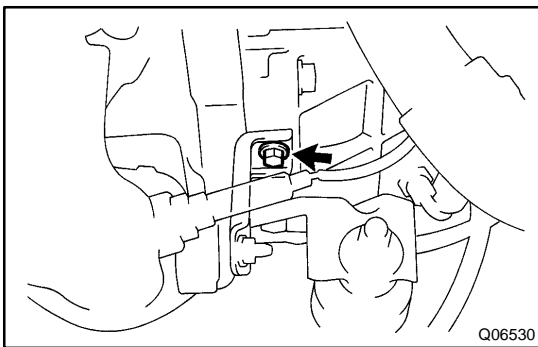
- 14. REMOVE NO. 2 FRONT EXHAUST PIPE AND FRONT EXHAUST PIPE (See page EM-1 18)**



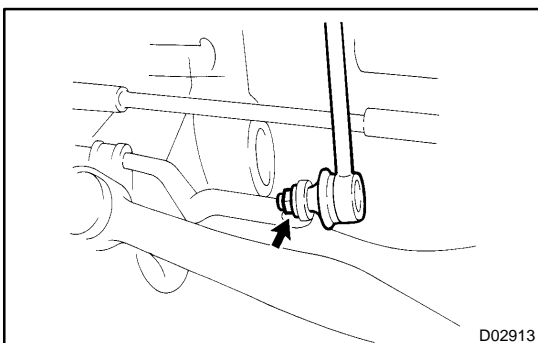
- 15. REMOVE TRANSAXLE UPPER SIDE MOUNTING BOLTS**

Torque: 66 N·m (670 kgf·cm, 48 ft·lbf)

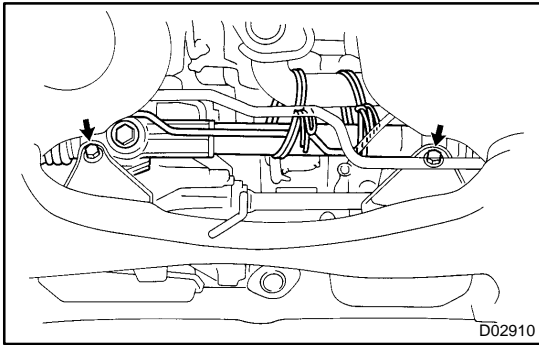
- 16. REMOVE FRONT WHEEL**
17. REMOVE ENGINE UNDER COVER
18. REMOVE LH AND RH DRIVE SHAFTS (See page SA-18)



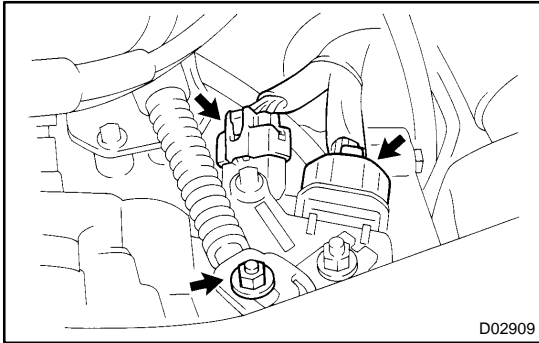
- 19. REMOVE EXHAUST MANIFOLD BRACKET MOUNTING BOLT**
 Torque: 20 N·m (200 kgf·cm, 15 ft·lbf)



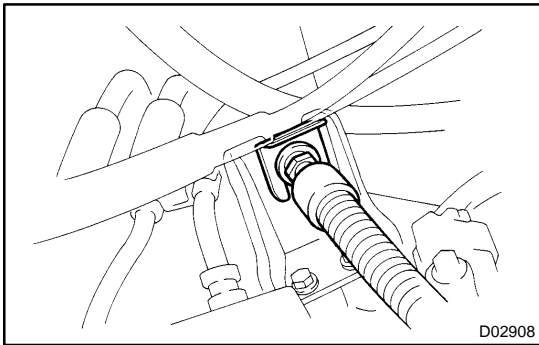
- 20. DISCONNECT LH AND RH STABILIZER BAR LINKS (See page SA-52)**



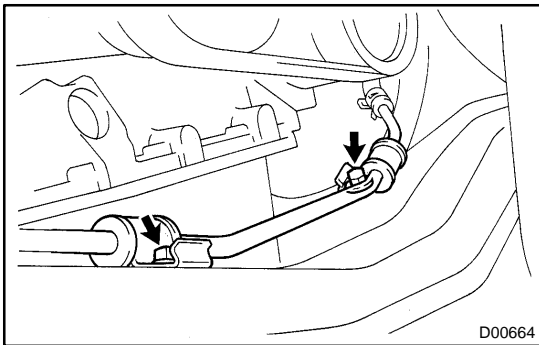
- 21. SUPPORT STEERING GEAR ASSEMBLY AS SHOWN
 - 22. REMOVE 2 STEERING GEAR ASSEMBLY MOUNTING BOLTS
- Torque: 181 N·m (1,850 kgf·cm, 134 ft·lbf)



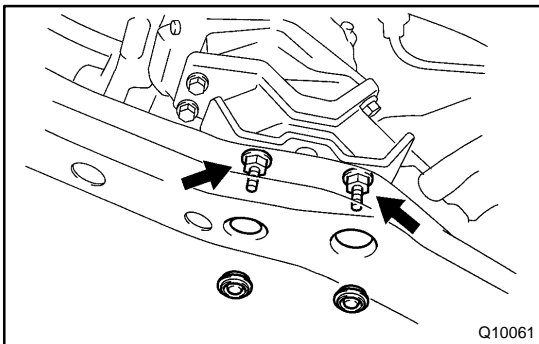
- 23. DISCONNECT PARK/NEUTRAL POSITION SWITCH CONNECTOR
 - 24. DISCONNECT SOLENOID CONNECTOR
 - 25. DISCONNECT SHIFT CONTROL CABLE
- (a) Remove the nut and disconnect the shift control cable from the lever.
- Torque: 15 N·m (150 kgf·cm, 11 ft·lbf)



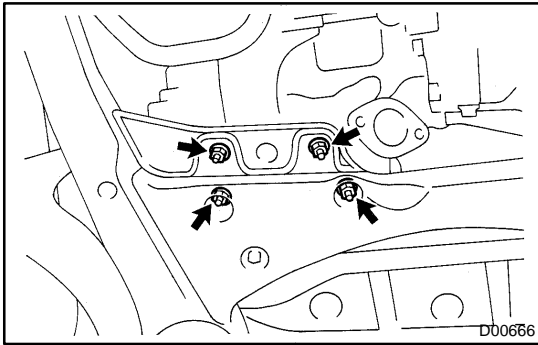
- (b) Remove the clip and disconnect the shift control cable from the bracket.



- 26. DISCONNECT PS PIPE
- Remove the 2 bolts and disconnect the PS pipe from the frame.
- Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)



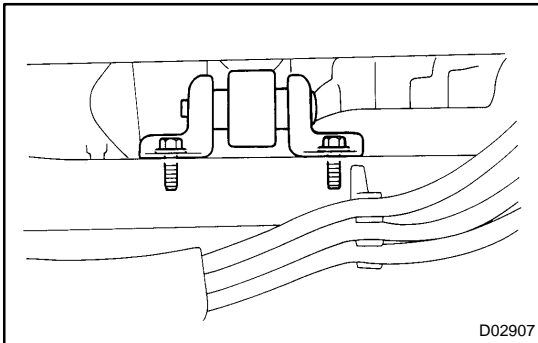
- 27. REMOVE LEFT SIDE TRANSAXLE MOUNTING NUT
- Remove the 2 grommets and nuts.
- Torque: 80 N·m (820 kgf·cm, 59 ft·lbf)



28. REMOVE REAR SIDE ENGINE MOUNTING NUT

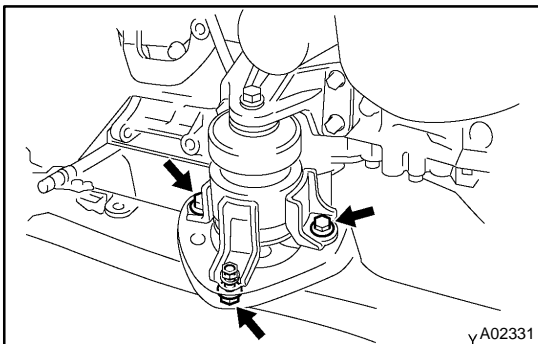
Remove the 2 grommets and 4 nuts.

Torque: 66 N·m (670 kgf·cm, 48 ft·lbf)



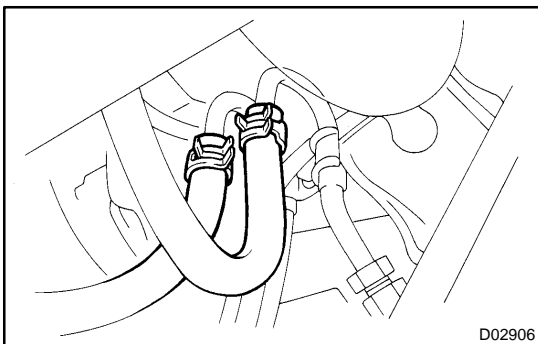
29. REMOVE 2 ENGINE MOUNTING ABSORBER BOLT

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



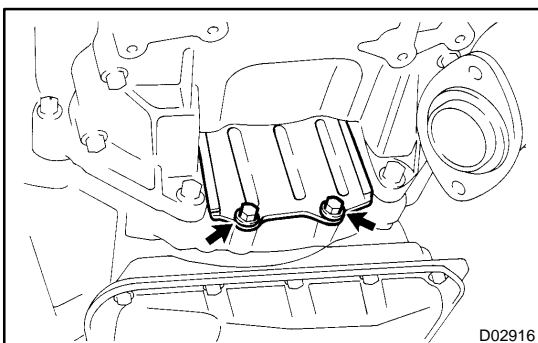
30. REMOVE 3 FRONT SIDE ENGINE MOUNTING BOLTS

Torque: 80 N·m (820 kgf·cm, 59 ft·lbf)



31. DISCONNECT OIL COOLER HOSE

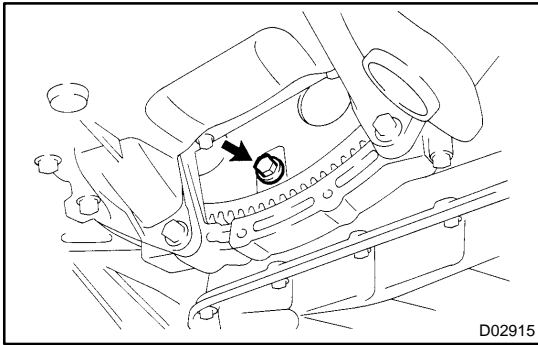
Loosen the 2 clamps and disconnect the 2 oil cooler hoses.



32. REMOVE FLYWHEEL HOUSING UNDER COVER

Remove the 2 bolts and flywheel housing under cover

Torque: 8 N·m (82 kgf·cm, 71 in.-lbf)



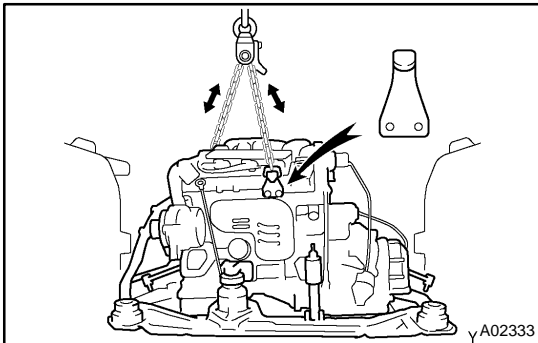
33. REMOVE TORQUE CONVERTER CLUTCH MOUNTING BOLT

Turn the crankshaft to gain access to each bolt, remove the 6 bolts with holding the crankshaft pulley bolt with a wrench.

Torque: 41 N·m (420 kgf·cm, 30 ft·lbf)

HINT:

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



34. ATTACH ENGINE SLINK DEVICE TO ENGINE HANGERS

(a) Install the No. 2 engine hanger in the correct direction.

Parts No.:

No. 2 engine hanger: 12282-20020

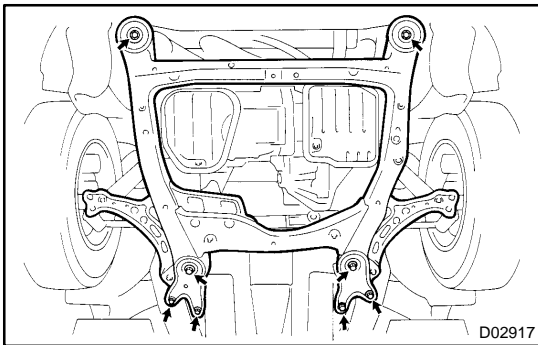
Bolt: 91642-80825

Torque: 19.5 N·m (200 kgf·cm, 14 ft·lbf)

(b) Attach the engine chain hoist to the engine hangers.

CAUTION:

Do not attempt to hang the engine by hooking the chain to any other part.



35. REMOVE FRONT FRAME ASSEMBLY

(a) Remove the 8 bolts.

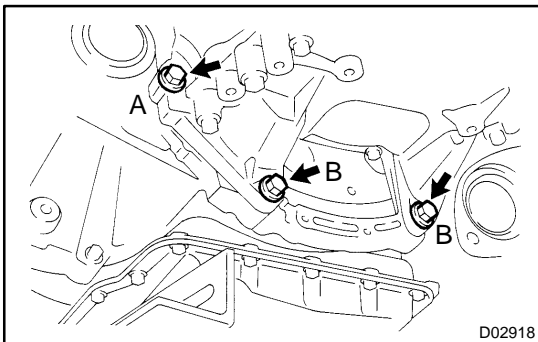
Torque:

19 mm head bolt: 181 N·m (1,850 kgf·cm, 134 ft·lbf)

14 mm head bolt: 32 N·m (330 kgf·cm, 24 ft·lbf)

(b) Remove the LH and RH rear lower braces and front frame assembly.

36. SUPPORT TRANSAXLE WITH A JACK



37. REMOVE TRANSAXLE 3 LOWER SIDE MOUNTING BOLTS

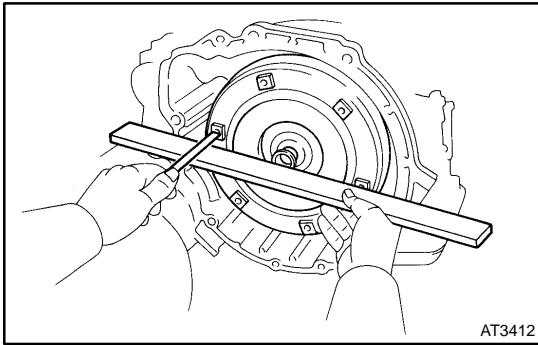
Torque:

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

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

38. REMOVE TRANSAXLE ASSEMBLY

Separate the transaxle from engine, and lower the transaxle.



INSTALLATION

1. CHECK TORQUE CONVERTER CLUTCH INSTALLATION

Using calipers and a straight edge, measure the distance between the installed surface and the front surface of the transaxle housing.

Correct distance: More than 12.75 mm (0.5020 in.)

2. TRANSAXLE INSTALLATION

Installation is in the reverse order of removal

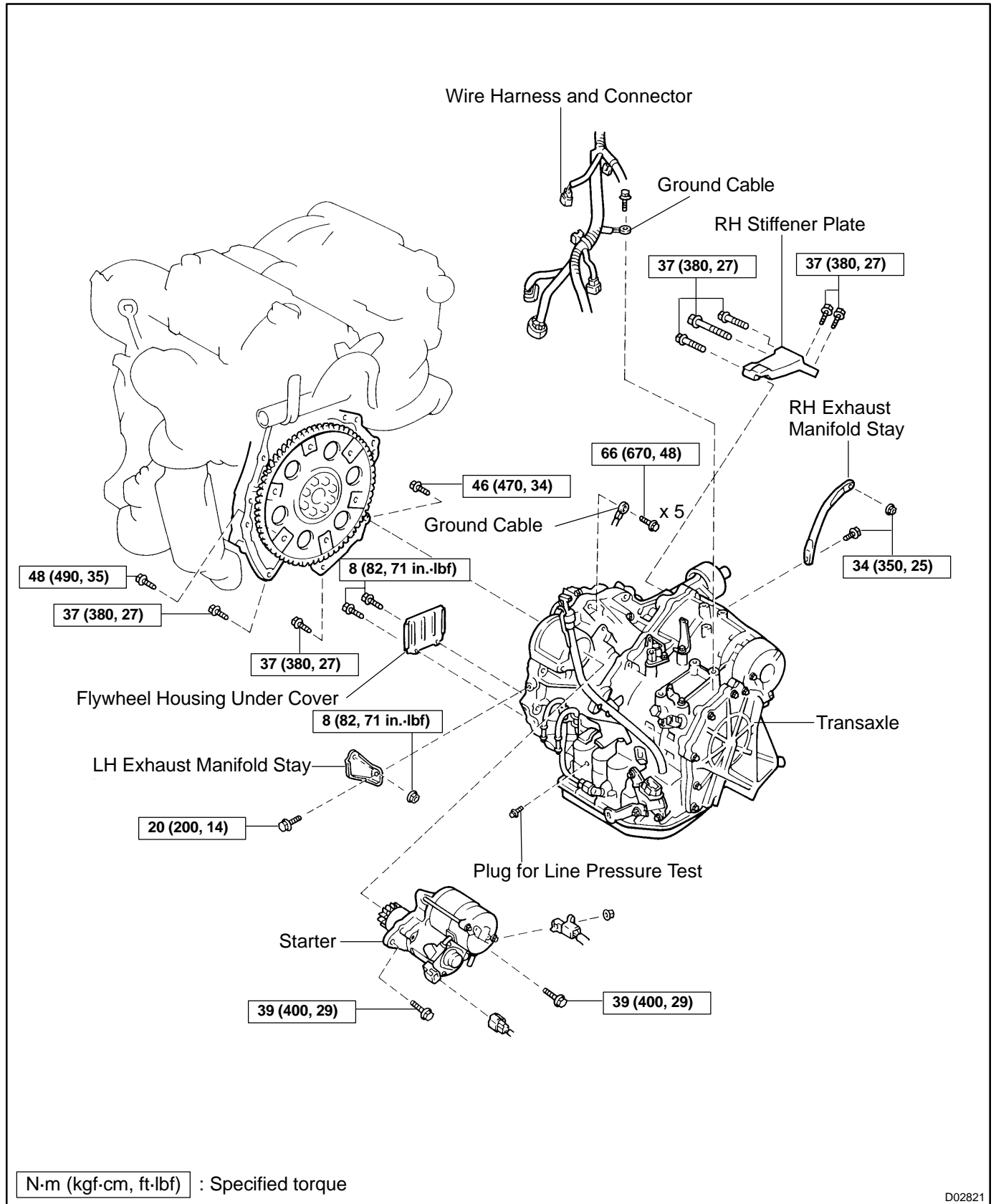
(See page [AX-35](#)).

HINT:

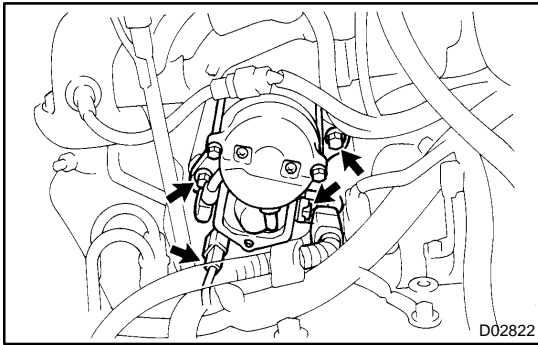
- After installation, adjust the shift control cable and park/neutral position switch (See page [DI-216](#)).
- Fill ATF and check the fluid level (See page [DI-216](#)).
- Perform the test drive of the vehicle.

AUTOMATIC TRANSAXLE UNIT (U140F) COMPONENTS

AX0A0-01



D02821



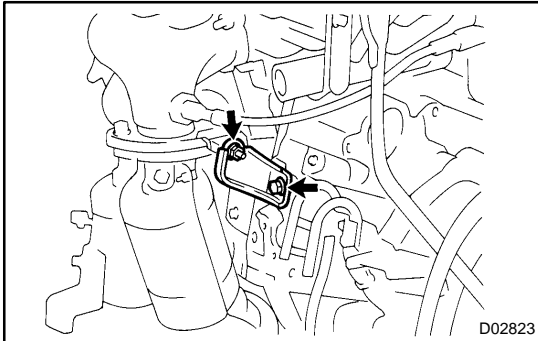
REMOVAL

1. REMOVE TRANSAXLE WITH ENGINE

(See page [EM-71](#))

2. REMOVE STARTER

- (a) Disconnect the starter wire and connector from the starter.
- (b) Remove the 2 bolts and starter.
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)



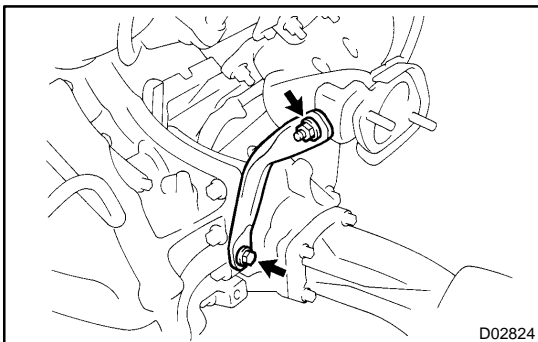
3. REMOVE LH EXHAUST MANIFOLD STAY

Remove the bolt, nut and stay.

Torque:

Bolt: 20 N·m (200 kgf·cm, 14 ft·lbf)

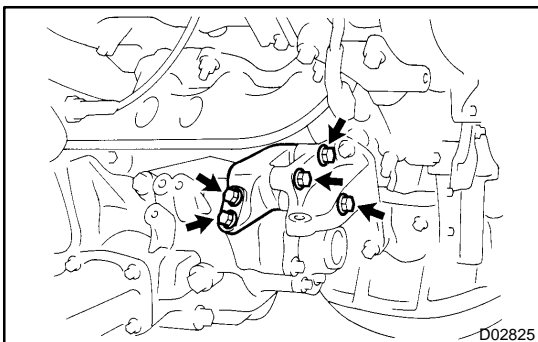
Nut: 8 N·m (82 kgf·cm, 71 in·lbf)



4. REMOVE RH EXHAUST MANIFOLD STAY

Remove the bolt, nut and stay.

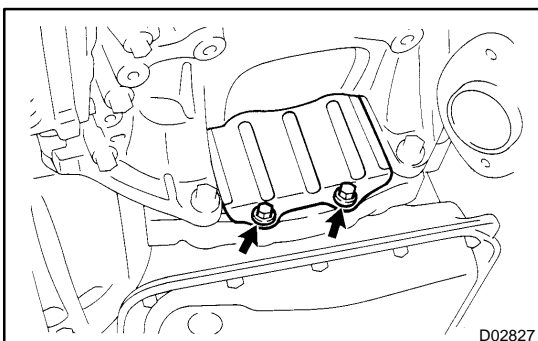
Torque: 34 N·m (350 kgf·cm, 25 ft·lbf)



5. REMOVE RH STIFFENER PLATE

Remove the 5 bolts and RH stiffener plate.

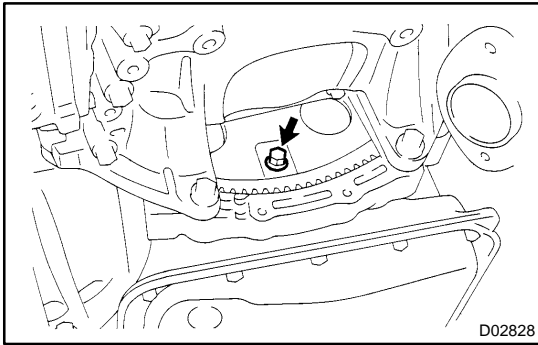
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)



6. REMOVE FLYWHEEL HOUSING UNDER COVER

Remove the 2 bolts and flywheel housing under cover.

Torque: 8 N·m (82 kgf·cm, 71 in·lbf)



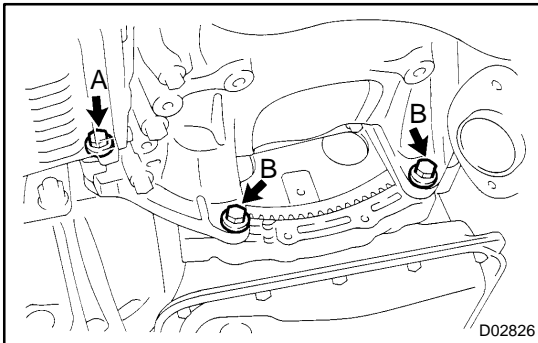
7. REMOVE TORQUE CONVERTER CLUTCH MOUNTING BOLT

Turn the crankshaft to gain access to each bolt, remove the holding the crankshaft pulley nut with a wrench.

Torque: 41 N·m (420 kgf·cm, 30 ft·lbf)

HINT:

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

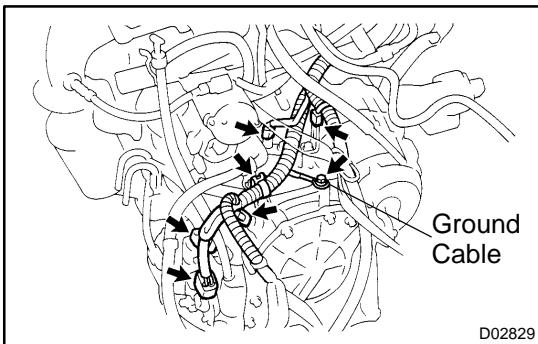


8. REMOVE 3 TRANSAXLE LOWER SIDE MOUNTING BOLTS

Torque:

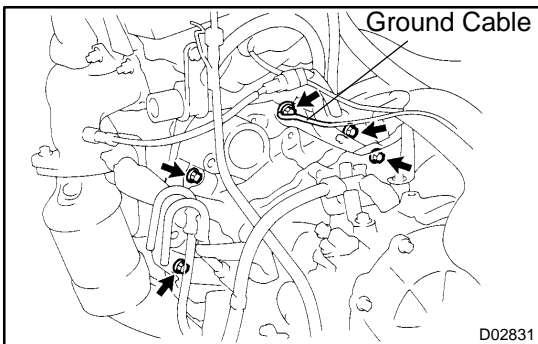
A bolt: 48 N·m (490 kgf·cm, 35 ft·lbf)

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



9. DISCONNECT CONNECTOR, WIRE HARNESS AND GROUND CABLE FROM TRANSAXLE

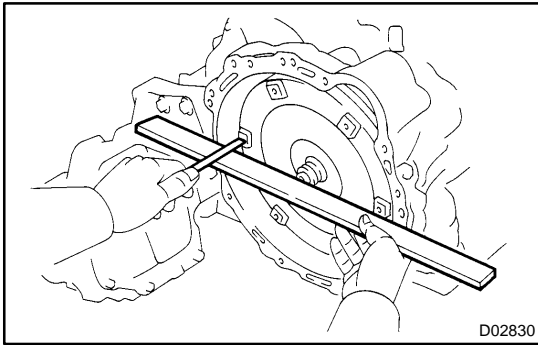
- (a) Remove the bolt and disconnect the ground cable from the transaxle.
- (b) Disconnect the following connector from the transaxle.
 - Park/neutral position switch connector
 - Solenoid wire connector
 - Input turbine speed sensor connector
 - Counter gear speed sensor connector
- (c) Disconnect the wire harness from the wire harness clamp.



10. REMOVE 5 TRANSAXLE UPPER SIDE MOUNTING BOLTS AND DISCONNECT GROUND CABLE

Torque: 66 N·m (670 kgf·cm, 48 ft·lbf)

11. REMOVE TRANSAXLE



INSTALLATION

1. CHECK TORQUE CONVERTER CLUTCH INSTALLATION

Using scale and a straight edge, measure the distance between the installed surface and the front surface of the transaxle housing.

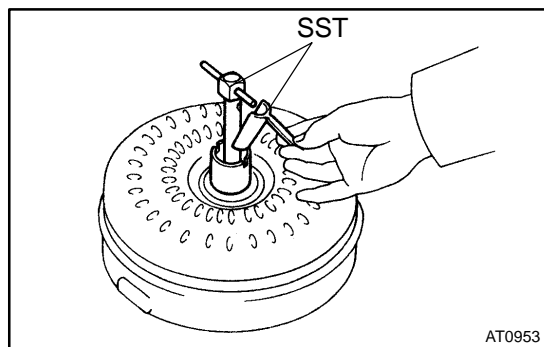
Correct distance: 12.75 mm (0.5020 in.) or more

2. TRANSAXLE INSTALLATION

Installation is in the reverse order of removal (See page [AX-42](#)).

HINT:

- After installation, adjust the shift control cable and park/neutral position switch (See page [DI-216](#)).
- Fill ATF and check the fluid level (See page [DI-216](#)).
- Perform the test drive of the vehicle.

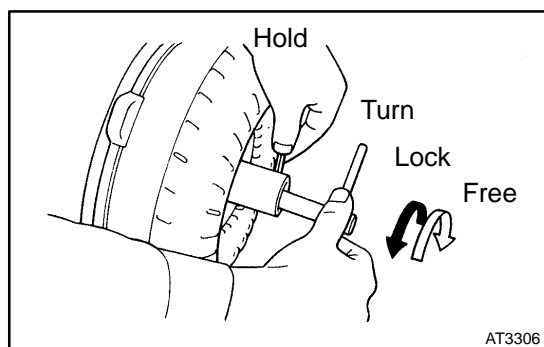


TORQUE CONVERTER CLUTCH AND DRIVE PLATE INSPECTION

AX09X-01

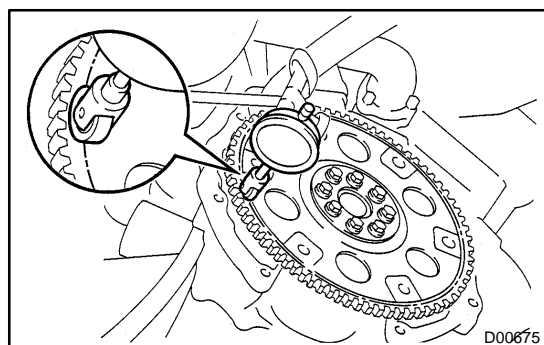
1. INSPECT ONE-WAY CLUTCH

- (a) Install SST into the inner race of the one-way clutch.
SST 09350-32014 (09351-32010)
- (b) 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)



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

If necessary, clean the converter and retest the clutch. Replace the converter if the clutch still fails the test.



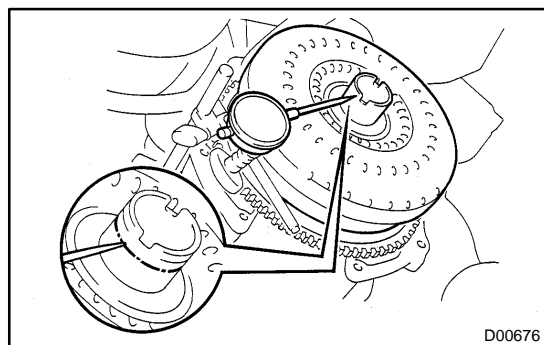
2. MEASURE DRIVE PLATE RUNOUT AND INSPECT RING GEAR

- (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: 83 N·m (850 kgf·cm 61 ft·lbf)



3. MEASURE TORQUE CONVERTER CLUTCH SLEEVE RUNOUT

Temporarily mount the torque converter clutch on the drive plate. Set a dial indicator and measure the torque converter clutch sleeve runout.

Maximum runout: 0.30 mm (0.0118 in.)

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

HINT:

Mark the position of the converter clutch to ensure the installation is correctly performed.