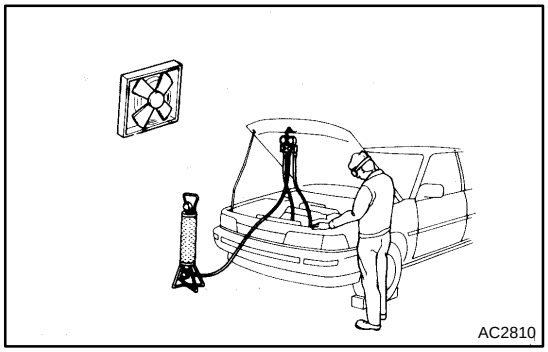
AIR CONDITIONING SYSTEM

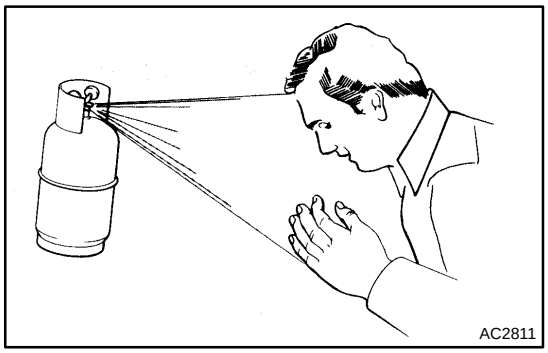
PRECAUTION

550BQ-01



1. DO NOT HANDLE REFRIGERANT IN AN ENCLOSED AREA OR NEAR AN OPEN FLAME

2. ALWAYS WEAR EYE PROTECTION



3. BE CAREFUL NOT TO GET LIQUID REFRIGERANT IN YOUR EYES OR ON YOUR SKIN

If liquid refrigerant gets in your eyes or on your skin.

(a) Wash the area with lots of cool water.

CAUTION:

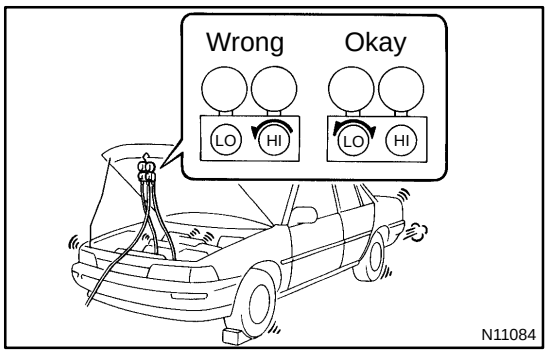
Do not rub your eyes or skin.

(b) Apply clean petroleum jelly to the skin.

(c) Go immediately to a physician or hospital for professional treatment.

4. NEVER HEAT CONTAINER OR EXPOSE IT TO NAKED FLAME

5. BE CAREFUL NOT TO DROP CONTAINER AND NOT TO APPLY PHYSICAL SHOCKS TO IT



6. DO NOT OPERATE COMPRESSOR WITHOUT ENOUGH REFRIGERANT IN REFRIGERANT SYSTEM

If there is not enough refrigerant in the refrigerant system oil lubrication will be insufficient and compressor burnout may occur, so take care to avoid this, necessary care should be taken.

7. DO NOT OPEN HIGH PRESSURE MANIFOLD VALVE WHILE COMPRESSOR IS OPERATING

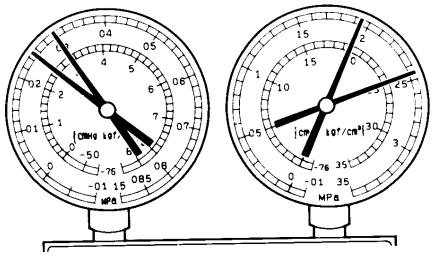
If the high pressure valves opened, refrigerant flows in the reverse direction and could cause the charging cylinder to rupture, so open and close the only low pressure valve.

8. BE CAREFUL NOT TO OVERCHARGE SYSTEM WITH REFRIGERANT

If refrigerant is overcharged, it causes problems such as insufficient cooling, poor fuel economy, engine overheating etc.

(7) Air present in refrigeration system

Condition: Cooling system does not function.



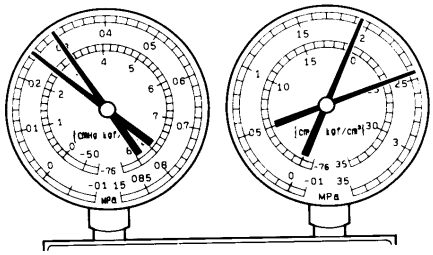
NOTE : These gauge indications are shown when the refrigerating system has been opens and the refrigerant charged without vacuum purging.

I22122

Symptom	Probable cause	Diagnosis	Corrective Actions
◆Pressure too high on both low and high pressure sides ◆The low pressure piping too hot to the touch ◆Bubbles seen through sight glass	Air entered in refrigerating system	◆Air present in refrigerating system ◆Insufficient vacuum purging	(1) Check compressor oil to see if it is see if it is dirty or insufficient (2) Evacuate air and supply new refrigerant

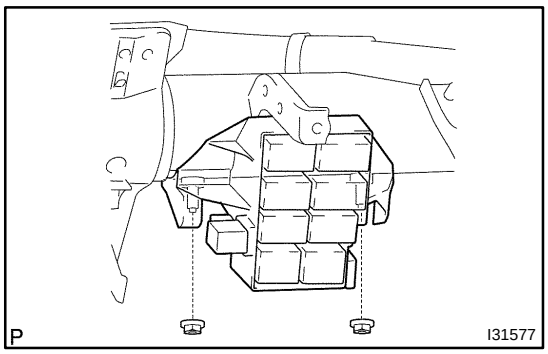
(8) Expansion valve improperly

Condition: Refrigerant functions insufficient.

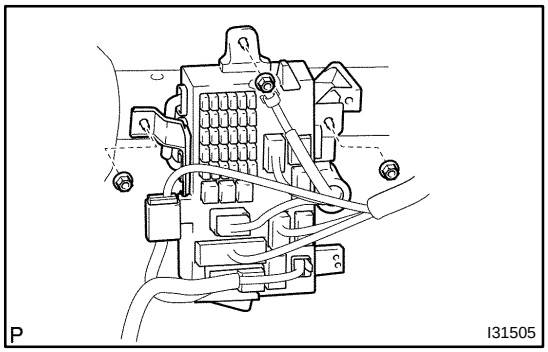


I22123

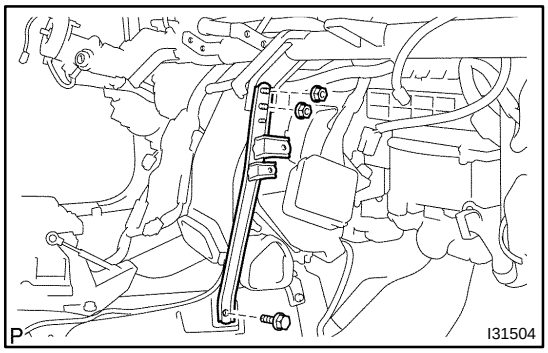
Symptom	Probable cause	Diagnosis	Corrective Actions
◆Pressure too high on both low and high pressure sides ◆Frost or large amount of dew on piping on low pressure side	Trouble in expansion valve	◆Excessive refrigerant in low pressure piping ◆Expansion valve opened too wide	Check expansion valve



(c) Install the steering side connector block with the 2 nuts.

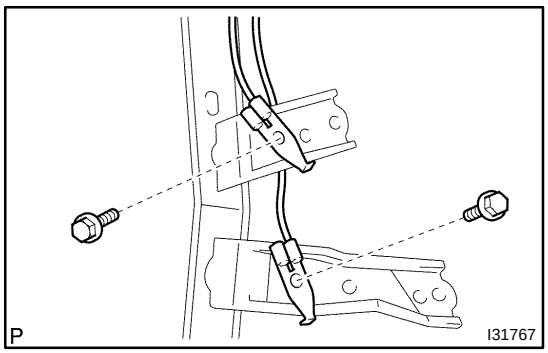


(d) Install the driver side junction block with the 3 nuts.
Torque: 8.4 N·m (85 kgf·cm, 73 in.·lbf)

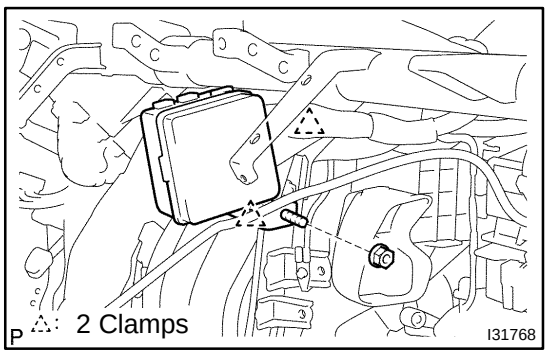


38. INSTALL INSTRUMENT PANEL BRACE SUB-ASSY NO.2

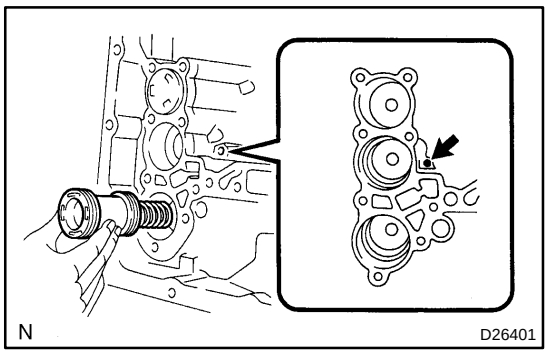
(a) Install the instrument panel brace sub-assy No. 2 with the 2 nuts and bolt.



(b) Install the 2 earth wires with the 2 bolts.
Torque: 8.4 N·m (85 kgf·cm, 73 in.·lbf)



(c) Install the passenger side junction block with the nut and 2 clamps.
Torque: 8.4 N·m (85 kgf·cm, 73 in.·lbf)



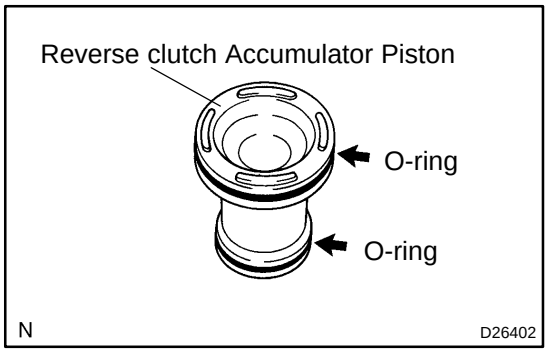
20. REMOVE REVERSE CLUTCH ACCUMULATOR PISTON

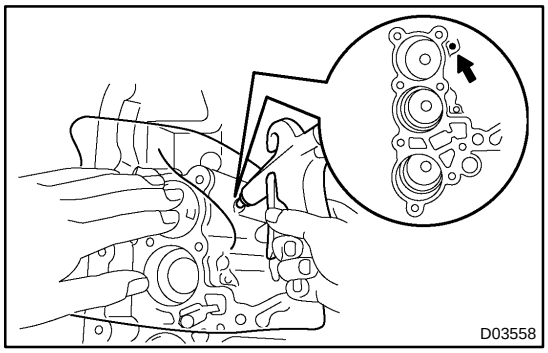
(a) Apply compressed air (392 kPa, 4.0 kgf/cm^2, 57 psi) to the oil hole and remove the reverse accumulator piston and spring.

NOTICE:

- **Blowing off the air may cause the piston to jump-out. When removing the piston, hold it by your hand using a waste cloth.**
- **Take care not to splash ATF when air-blowing.**

(b) Remove the 2 O-rings from the reverse clutch accumulator piston.





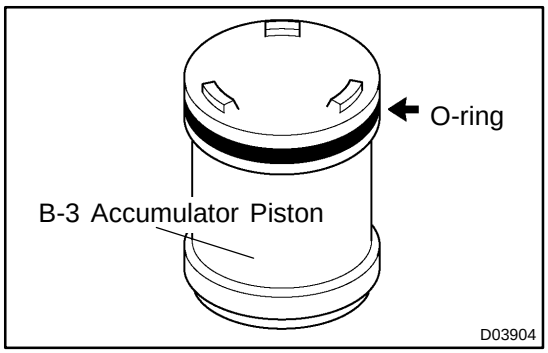
21. REMOVE B-3 ACCUMULATOR PISTON

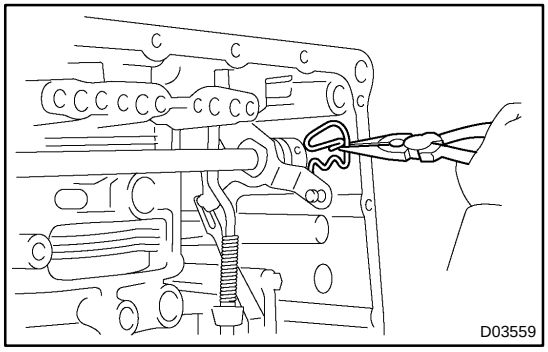
(a) Apply compressed air (392 kPa, 4.0 kgf/cm^2, 57 psi) to the oil hole and remove the B-3 accumulator piston and 2 springs.

NOTICE:

- **Blowing off the air may cause the piston to jump-out. When removing the piston, hold it by your hand using a waste cloth.**
- **Take care not to splash ATF when air-blowing.**

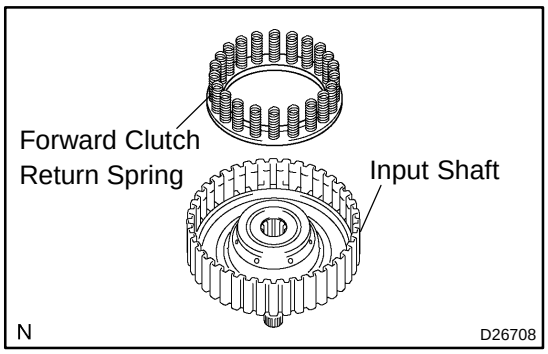
(b) Remove the O-ring from the B-3 accumulator piston.





22. REMOVE MANUAL VALVE LEVER SHAFT RETAINER SPRING

(a) Using a needle-nose pliers, remove the manual valve lever shaft retainer spring.



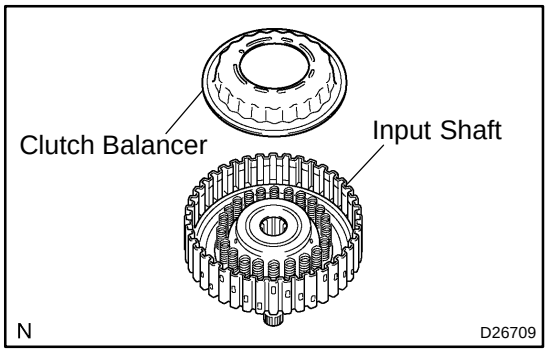
10. INSTALL FORWARD CLUTCH RETURN SPRING SUB-ASSY

(a) Install the return spring to the input shaft.

NOTICE:

Installing the spring sub- assembly, check all of the springs are fit in the piston correctly.

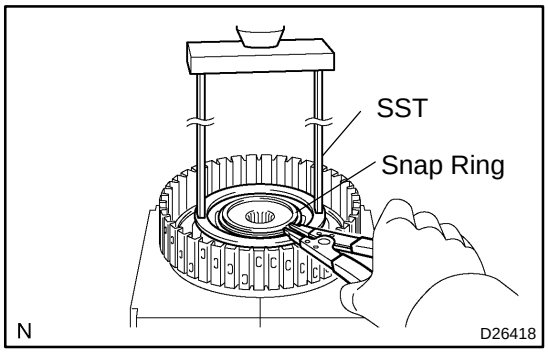
(b) Coat the clutch balancer with ATF.



(c) Install the clutch balancer to the input shaft.

NOTICE:

- **Be careful not to damage the lip seal of the forward clutch balancer.**
- **Install the clutch balancer carefully not to have a pinching and any other defects at the sealing lip.**
- **Apply enough ATF to the sealing lip prior to assembling.**



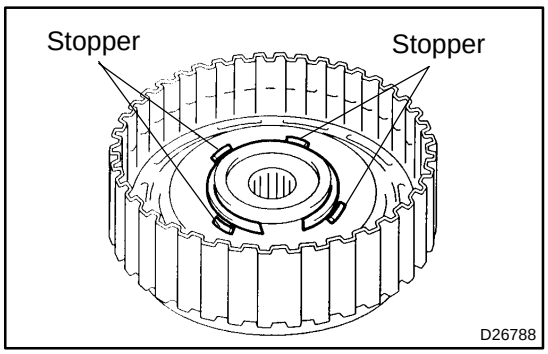
(d) Place SST on the clutch balancer, and compress the clutch balancer with a press.
SST 09387-00020

(e) Install the snap ring with a snap ring expander.

(f) Be sure the end gap of the snap ring is not aligned with the spring retainer claw.

NOTICE:

- **Stop the press when the spring sheet is lowered to the place 1 - 2 mm (0.039 - 0.078 in.) from the snap ring groove.**
- **This prevents the spring sheet from being deformed.**
- **Do not expand the snap ring excessively.**



(g) Set the end gap of the snap ring in the piston shown in the illustration.

NOTICE:

The end gap of the snap ring should not coincide with any of the stoppers.

BRAKE FLUID (From July, 2003)

3211W-03

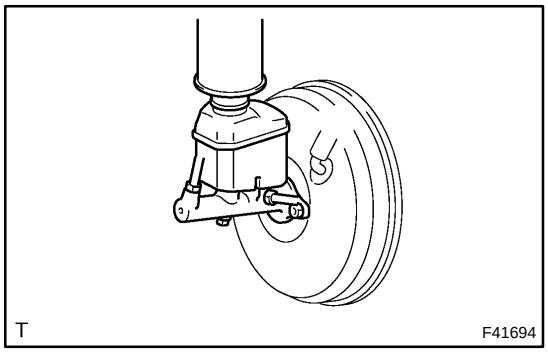
BLEEDING

HINT:

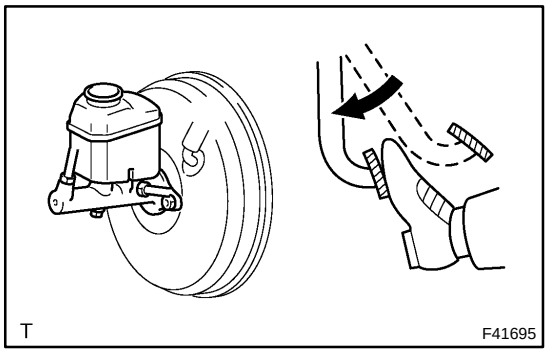
If any work is done on the brake system or if air in the brake lines is suspected, bleed the air from the system.

NOTICE:

Wash off the brake fluied immediately if it comes into contact with a painted surface.



1. FILL RESERVOIR WITH BRAKE FLUID
Fluid: SAE J1703 or FMVSS No. 116 DOT3

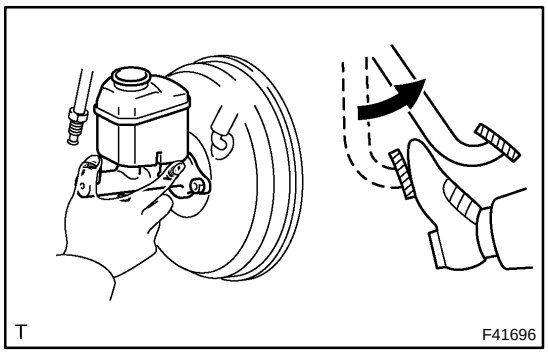


2. BLEED MASTER CYLINDER

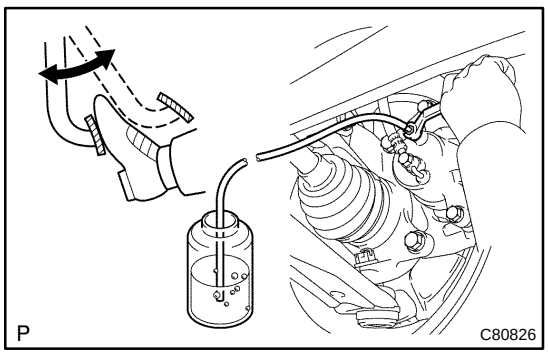
HINT:

If the master cylinder has been disassembled or if the reservoir becomes empty, bleed the air from the master cylinder.

(a) Remove the air cleaner assembly with hose.
(b) Disconnect the brake lines from the master cylinder.
SST 09023-00101
(c) Slowly depress the brake pedal and hold it.



(d) Block off the outer holes with your fingers, and release the brake pedal.
(e) Repeat (c) and (d) 3 or 4 times.
(f) Install the air cleaner assembly with hose.

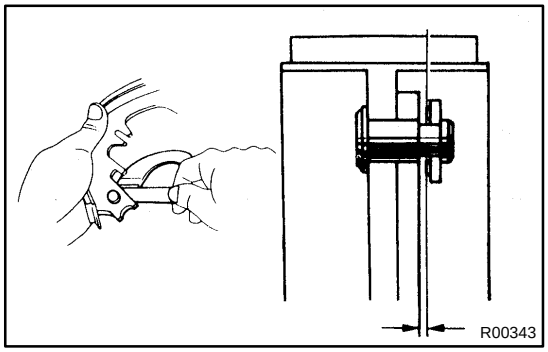


3. BLEED BRAKE LINE

(a) Connect the vinyl tube to the brake caliper.
(b) Depress the brake pedal several times, then loosen the bleeder plug with the pedal held down.
(c) At the point when fluid stops coming out, tighten the bleeder plug, then release the brake pedal.
(d) Repeat (b) and (c) until all the air in the fluid has been bled out.
(e) Tighten the bleeder plug certainly.
Torque: 8.3 N·m (85 kgf·cm, 73 in.·lbf)

12. INSTALL PARKING BRAKE SHOE

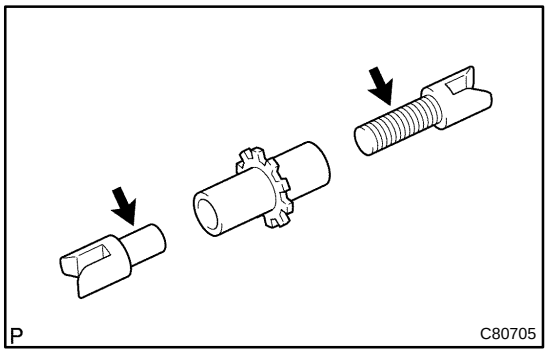
(a) Install the shoe lever and shim to the rear shoe with a new C-washer .



(b) Using a feeler gauge, measure the clearance.
Standard clearance: Less than 0.35 mm (0.0138 in.)

If the clearance is not within the specification, replace the shim with one of the correct size.

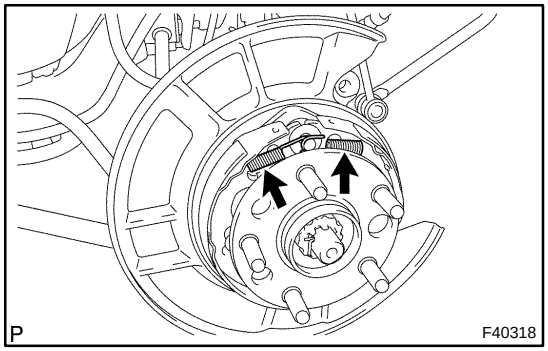
Shim Thickness	Shim Thickness
0.3 mm (0.012 in.)	0.9 mm (0.035 in.)
0.6 mm (0.024 in.)	-



(c) Apply the high temperature grease to the adjusting bolt.
(d) Install the shoe adjusting screw set and tension spring to the front and rear shoe.
(e) Install the 2 pins, 4 cups and 2 shoe hold-down springs.
(f) Connect the parking brake cable to the shoe lever.
(g) Install the front and rear parking brake shoe.

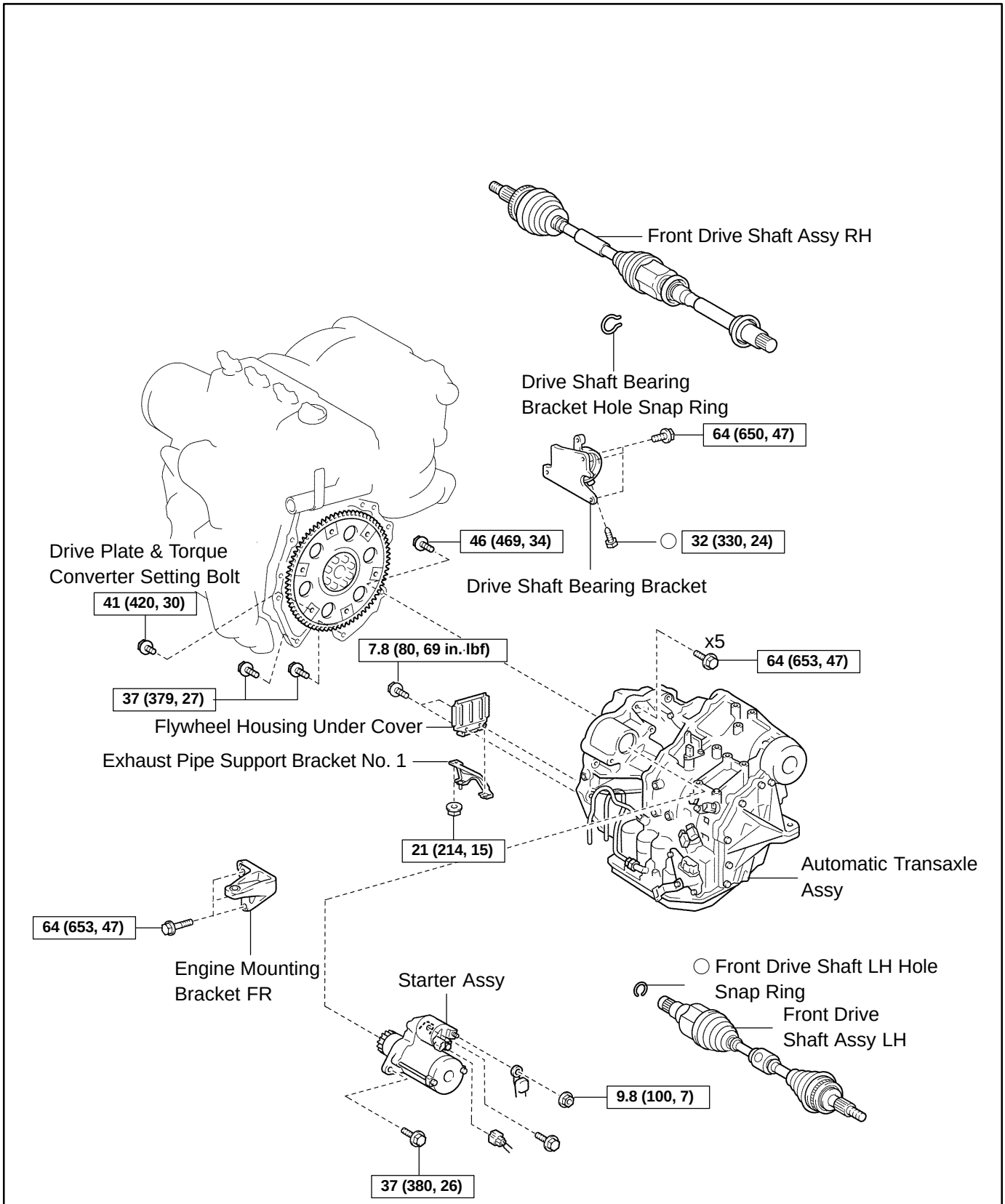
13. INSTALL PARKING BRAKE SHOE STRUT LH

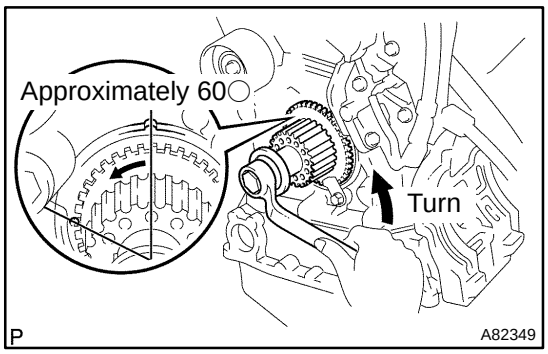
14. INSTALL PARKING BRAKE SHOE STRUT COMPRESSION SPRING



15. INSTALL PARKING BRAKE SHOE RETURN TENSION SPRING

(a) Using a needle nose pliers, install the 2 return tension springs.

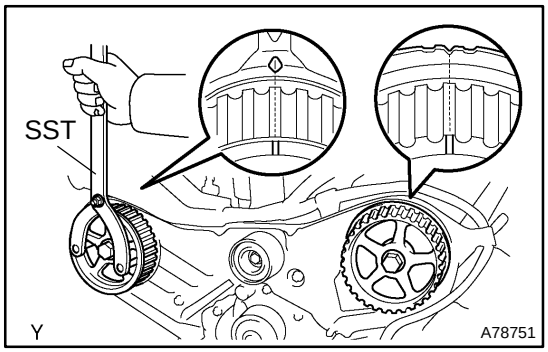

Front Drive Shaft Assy RH
Drive Shaft Bearing
Bracket Hole Snap Ring
64 (650, 47)
46 (469, 34)
○ 32 (330, 24)
Drive Plate & Torque
Converter Setting Bolt
Drive Shaft Bearing Bracket
41 (420, 30)
7.8 (80, 69 in.·lbf)
x5
64 (653, 47)
37 (379, 27)
Flywheel Housing Under Cover
Exhaust Pipe Support Bracket No. 1
21 (214, 15)
Automatic Transaxle
Assy
64 (653, 47)
Engine Mounting
Bracket FR
Starter Assy
○ Front Drive Shaft LH Hole
Snap Ring
Front Drive
Shaft Assy LH
9.8 (100, 7)
37 (380, 26)
N·m (kgf·cm, ft·lbf): Specified torque
○ Non-reusable part
P
A84928



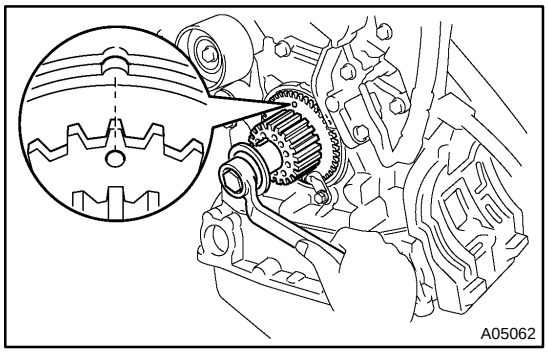
(e) Turn the crankshaft counterclockwise by approximately 60○.

NOTICE:

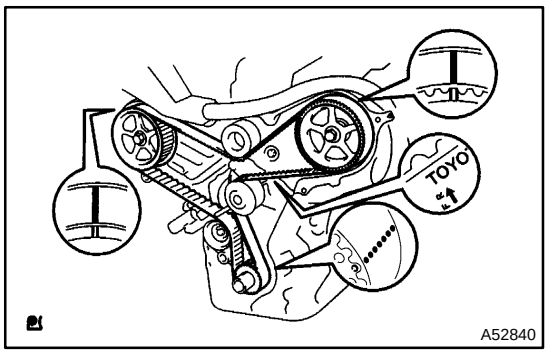
To prevent contact of the piston head with the valve head, set the crankshaft pulley at the 60○BTDC/compression position.



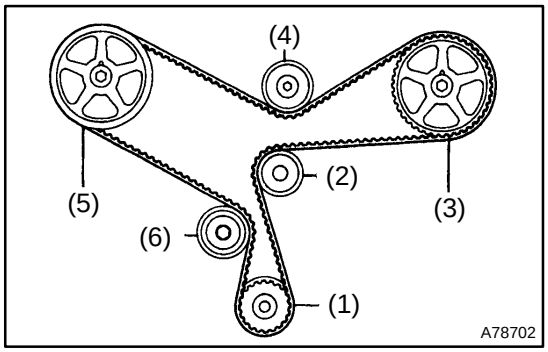
(f) Using SST, turn the timing pulleys, then align the timing marks of the timing pulleys with the timing belt No. 3 cover.
SST 09960-10010 (09962-01000, 09963-01000)



(g) Turn the crankshaft, then align the timing mark of the crankshaft timing pulley with the oil pump body.



(h) Align the front mark on the timing belt so it faces forward.
(i) Align the installation mark on the timing belt with the timing mark of the crankshaft timing pulley.
(j) Align the installation marks on the timing belt with the timing marks of the camshaft timing pulleys.



(k) Install the timing belt in this order.

1st	Crankshaft timing pulley
2nd	Water pump pulley
3rd	LH camshaft timing pulley
4th	No. 2 idler pulley
5th	RH camshaft timing pulley
6th	No. 1 idler pulley

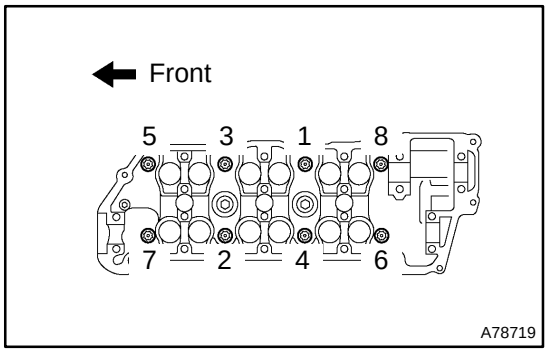
43. INSTALL CYLINDER HEAD LH

NOTICE:

The cylinder head bolts are tightened in 2 successive steps.

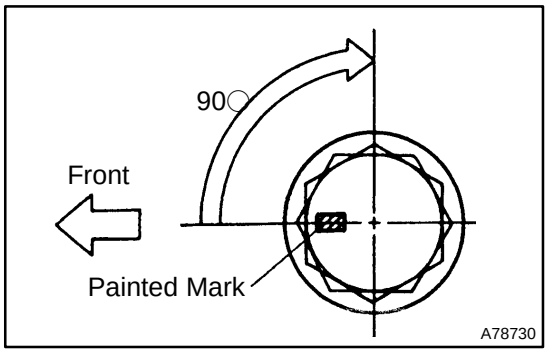
(a) Apply a light coat of engine oil to the threads of the cylinder head bolts.

(b) Install the plate washer to the cylinder head bolt.



(c) Using several steps, install and tighten the 8 cylinder head bolts uniformly in the sequence shown in the illustration.

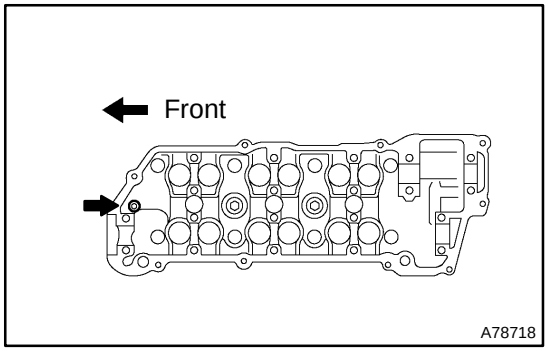
Torque: 54 N·m (550 kgf·cm, 40 ft·lbf)



(d) Mark the front side of each cylinder head bolt head with paint as shown in the illustration.

(e) Retighten the cylinder head bolts by 90° in the same sequence as step (c).

(f) Check that each painted mark is now at a 90° angle to the front.



(g) Using a socket hexagon wrench 8, install the hexagon bolt.

Torque: 19 N·m (189 kgf·cm, 14 ft·lbf)

(h) Install the wire harness clamp bracket with the bolt.

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

(i) Connect the ground cable with the bolt.

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

44. INSTALL NO.4 CAMSHAFT SUB-ASSY (See page 14-107)

45. INSTALL NO.3 CAMSHAFT SUB-ASSY (See page 14-107)

46. INSTALL CYLINDER HEAD COVER SUB-ASSY LH (See page 14-7)

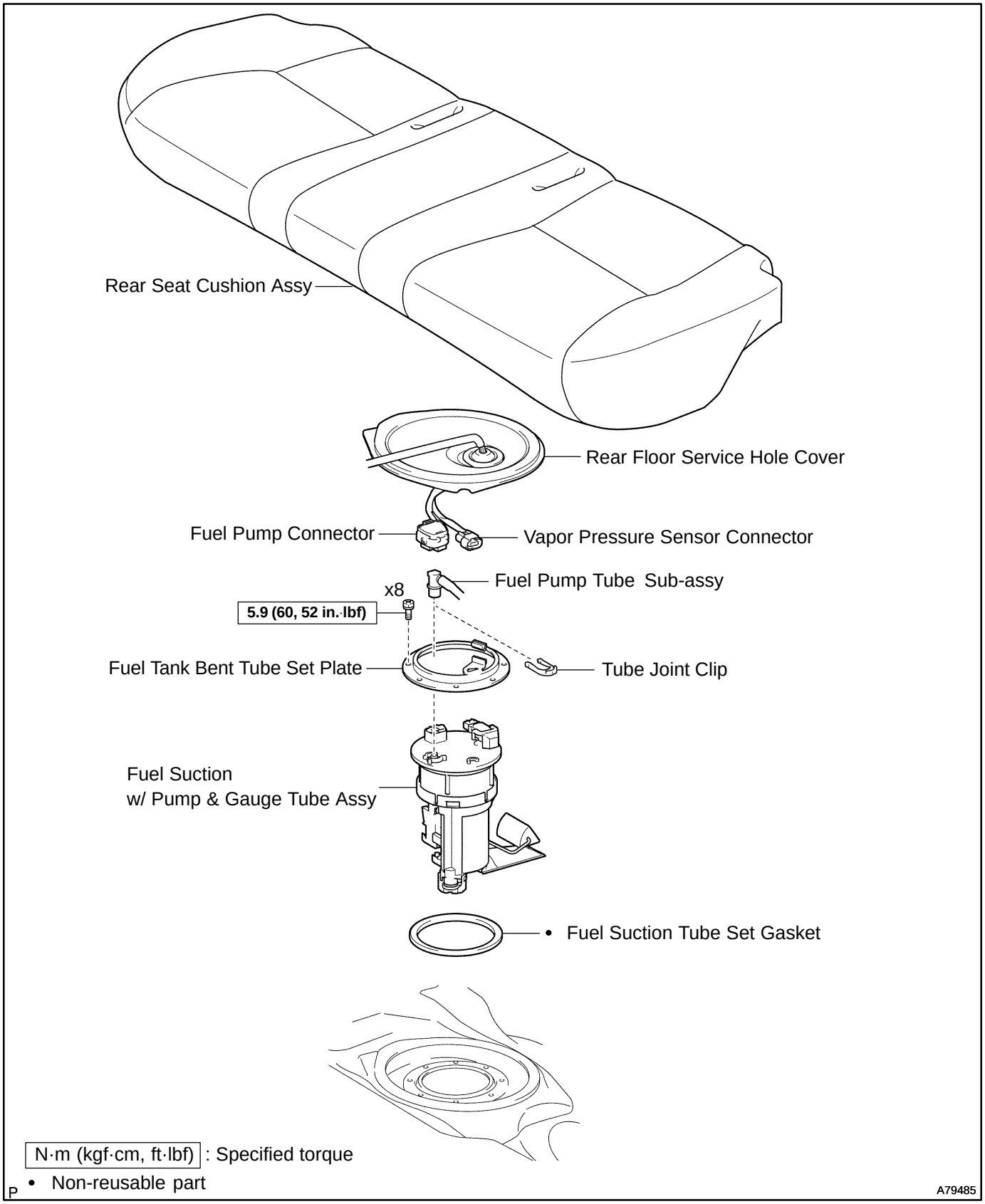
47. INSTALL IGNITION COIL ASSY (See page 14-7)

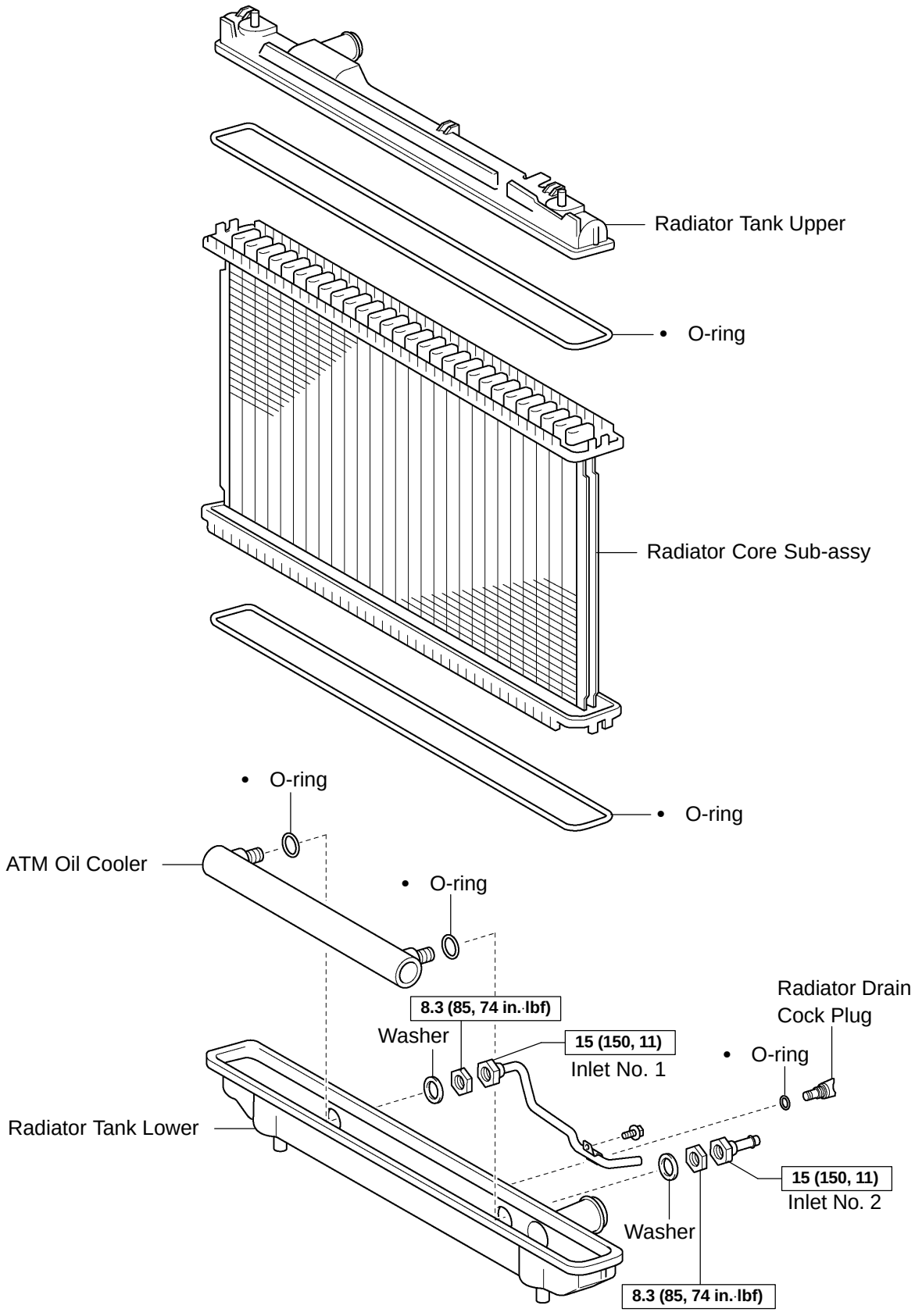
48. INSTALL WATER INLET PIPE (See page 16-16)

FUEL SUCTION W/ PUMP & GAUGE TUBE ASSY (3MZ-FE)

110XW-02

COMPONENTS





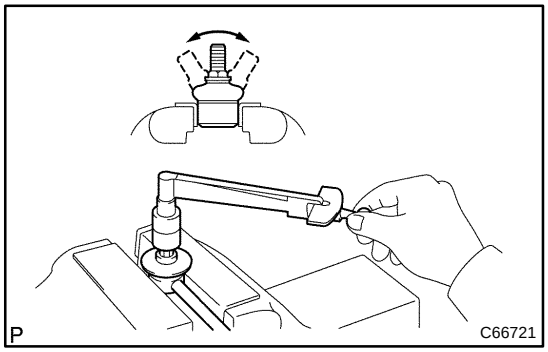
N·m (kgf·cm, ft·lbf): Specified torque

Y • Non-reusable part

A86586

12. REMOVE STABILIZER BAR FRONT

13. REMOVE FRONT STABILIZER BAR BUSH NO.1

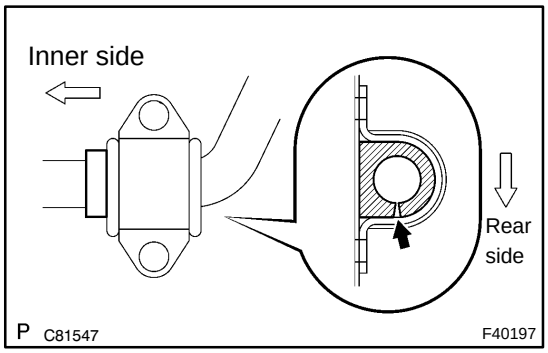


14. INSPECT FRONT STABILIZER LINK ASSY LH

(a) As shown in the illustration, flip the ball joint stud back and forth 5 times, before installing the nut.

(b) Using a torque wrench, turn the nut continuously at a rate of 2 - 4 seconds per 1 turn and take the torque reading on the 5th turn.

Turning torque:
0.05 - 1.96 N·m (0.5 - 20 kgf·cm, 0.4 - 17.4 in.·lbf)



15. INSTALL FRONT STABILIZER BAR BUSH NO.1

HINT:
Install the bushing to the inner side of the bushing stopper on the stabilizer bar.

16. INSTALL STABILIZER BAR FRONT

17. INSTALL RACK & PINION POWER STEERING GEAR ASSY (See page 51-21)

18. INSTALL STEERING INTERMEDIATE SHAFT SUB-ASSY (See page 51-21)

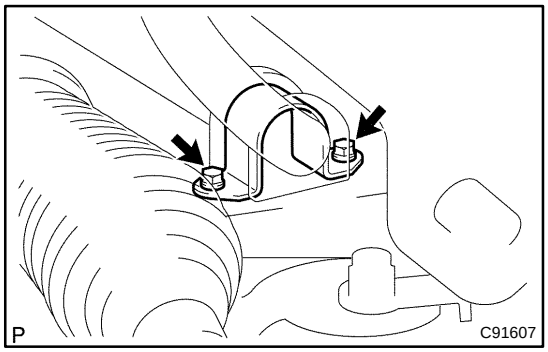
19. INSTALL PRESSURE FEED TUBE ASSY (See page 51-21)
SST 09023-00101

20. INSTALL STEERING GEAR OUTLET RETURN TUBE (See page 51-21)
SST 09023-00101

21. INSTALL TIE ROD ASSY LH (See page 30-8)

22. INSTALL TIE ROD ASSY RH

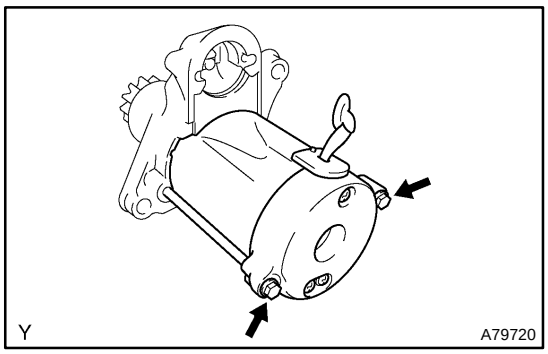
HINT:
Install the RH side by the same procedures with the LH side.



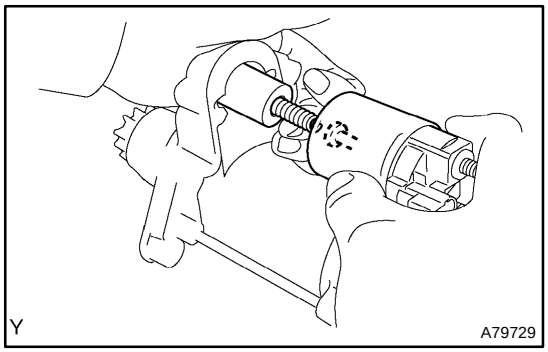
23. INSTALL FRONT STABILIZER BRACKET NO.1 LH

(a) Install the 2 front stabilizer brackets No. 1 LH with the 2 bolts.

Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)



(b) Install the starter field frame with the 2 through bolts.
Torque: 6.0 N·m (61 kgf·cm, 53 in.·lbf)

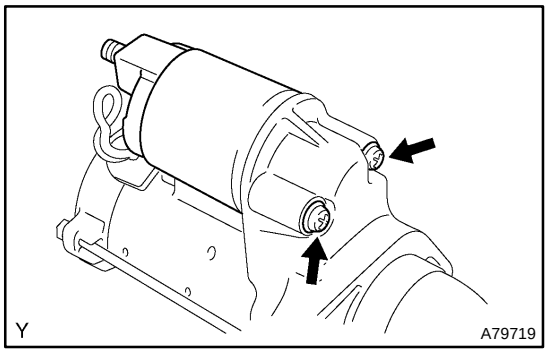


17. INSTALL STARTER MAGNETIC SWITCH ASSY

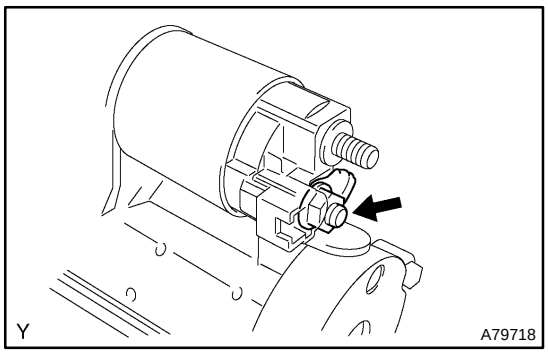
(a) Apply grease to the plunger and hook.

(b) Hook the plunger hook of the starter magnetic switch on the drive lever.

(c) Install the plunger and return spring.



(d) Install the starter magnetic switch with the 2 screws.
Torque: 7.5 N·m (76 kgf·cm, 66 in.·lbf)

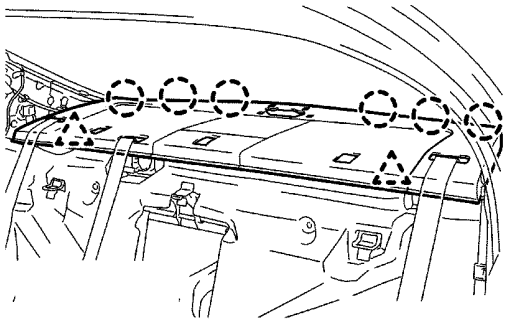


(e) Connect the lead wire to terminal C with the nut.
Torque: 10 N·m (102 kgf·cm, 7 ft·lbf)

Repair Procedure (Continued)

B. **Without Sun Shade:**

Disengage the 6 claws and 2 clips and remove the package tray trim panel assembly.

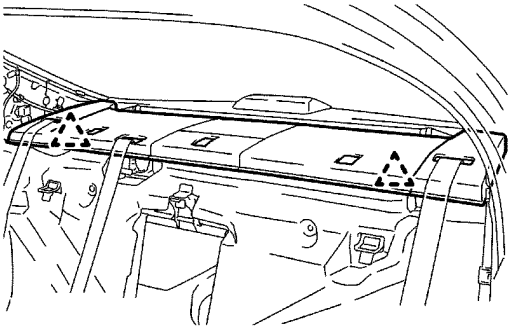


: Claw

: Clip

C. **With Sun Shade:**

Disengage the 2 clips and remove the package tray trim panel assembly.



: Clip

11. Remove the rear seat center belt assembly RH.

Remove the bolt holding the retractor and disengage the claws of the stopper to remove the rear seat center belt assembly RH.