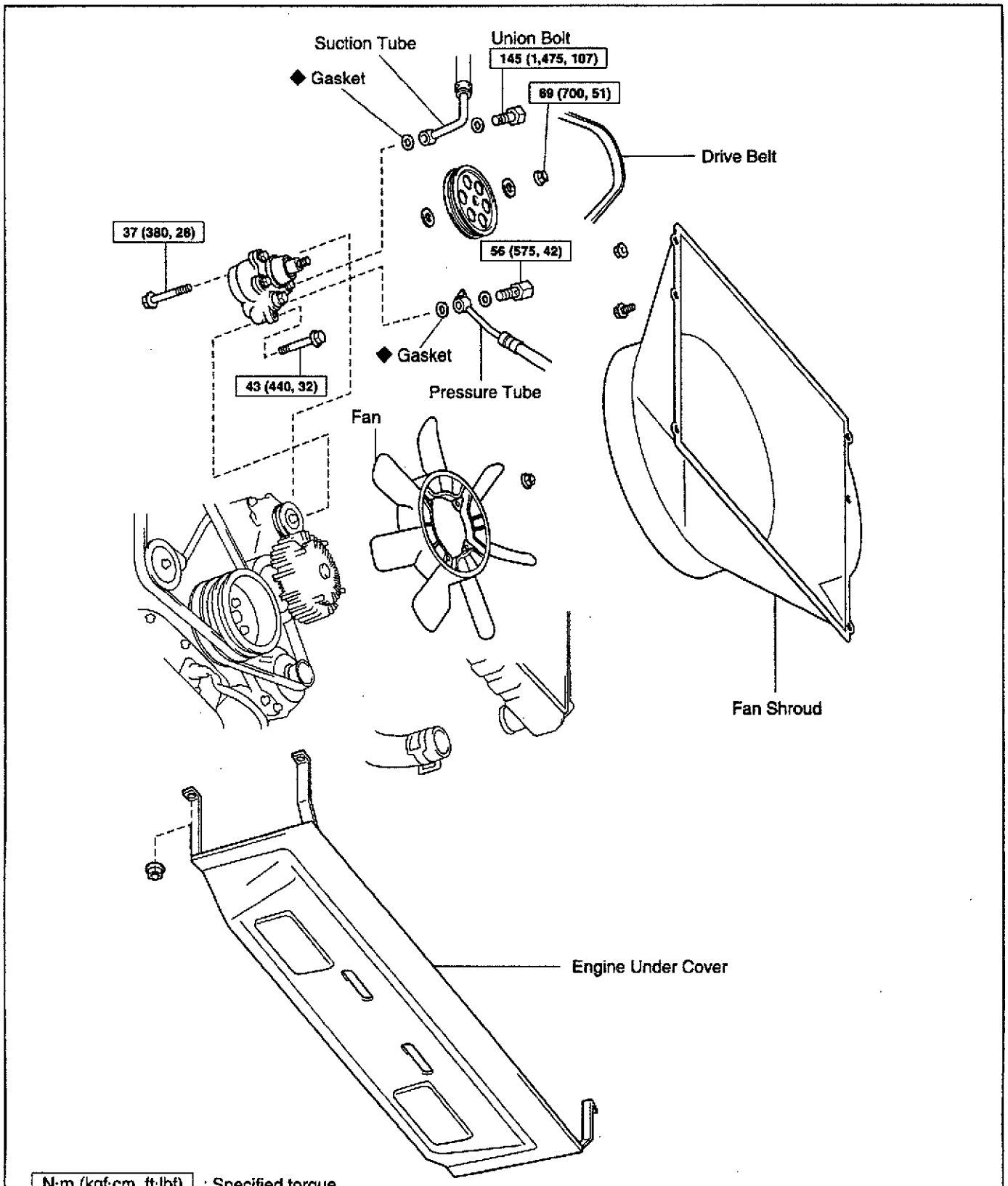
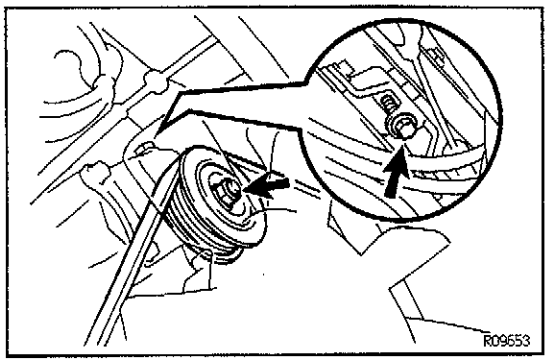
POWER STEERING PUMP

POWER STEERING PUMP REMOVAL AND INSTALLATION

Remove and install the parts, as shown.



N·m (kgf·cm, ft·lbf) : Specified torque
◆ Non-reusable part

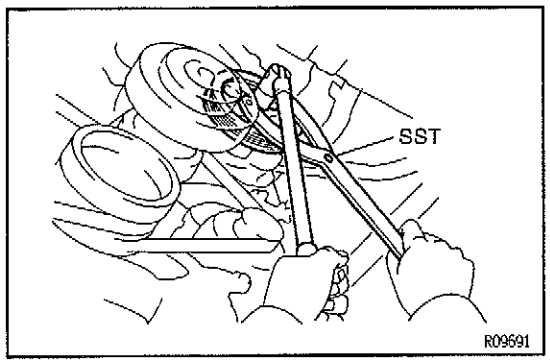


MAIN POINTS OF REMOVAL AND INSTALLATION

1. REMOVE DRIVE BELT

(a) Loosen the power steering idle pulley.

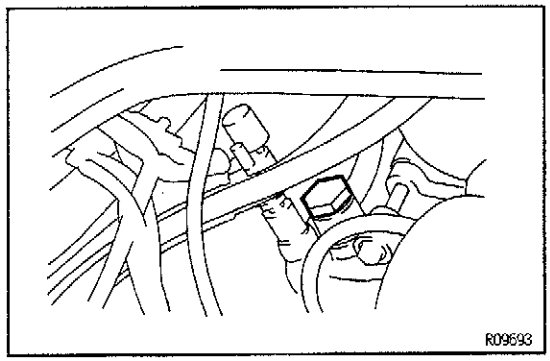
(b) Tighten the drive belt adjusting bolt.



2. REMOVE VANE PUMP PULLEY

(a) Using SST to hold the pulley, remove the nut.
SST 09960–10010

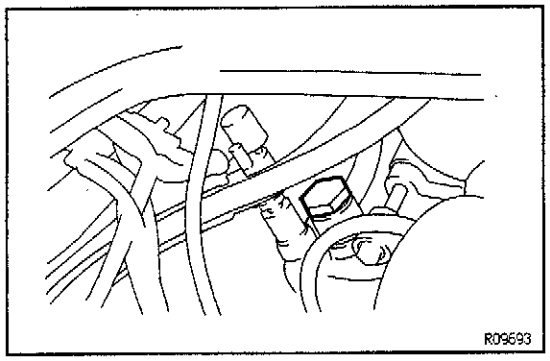
(b) Remove the pulley.



3. REMOVE PRESSURE TUBE

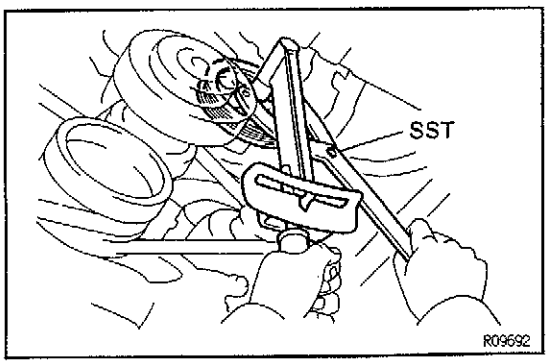
(a) Drain fluid.

(b) Using a spanner (24 mm) to hold the pressure port union, remove the union bolt and gasket.
NOTICE: Take care not to spill fluid on the A/C compressor rotor.



4. CONNECT PRESSURE TUBE

Using a spanner (24 mm) to hold the pressure port union, install the union bolt with a new gasket.
HINT: Make sure the stopper is touching the pump housing, as shown then tighten the union bolt.
Torque: 56 N·m (575 kgf·cm, 42 ft·lbf)



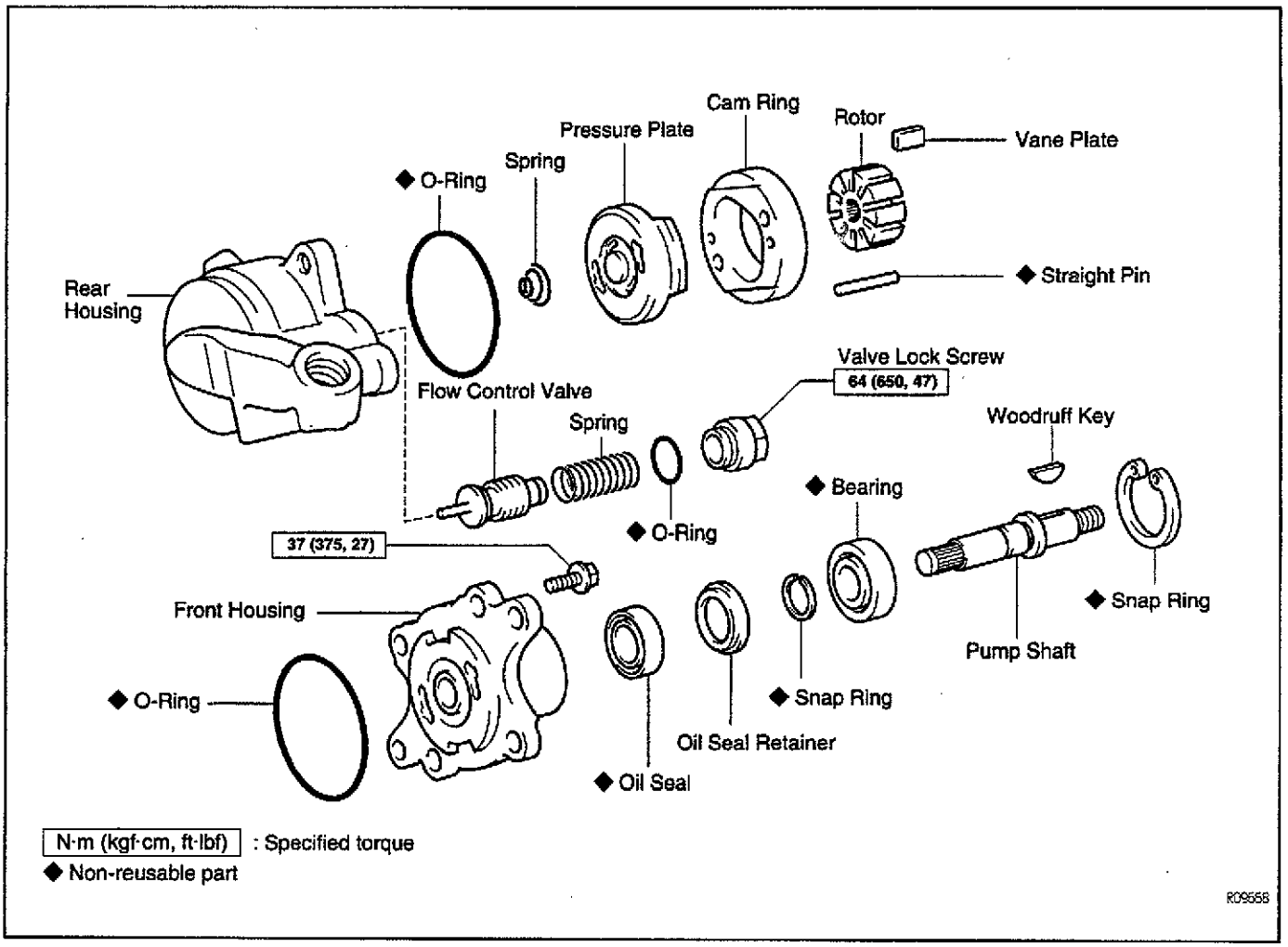
5. INSTALL VAME PUMP PULLEY

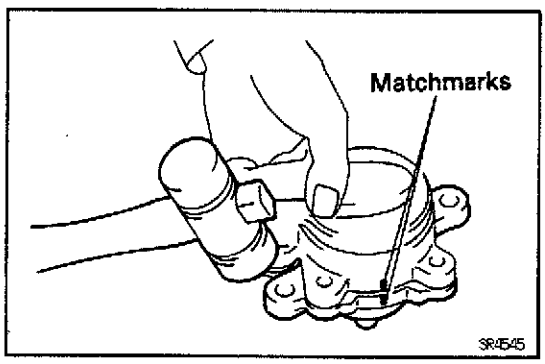
Using SST to hold the pulley, tighten the nut.
SST 09960–10010
Torque: 69N·m (700 kgf·cm, 51 ft·lbf)

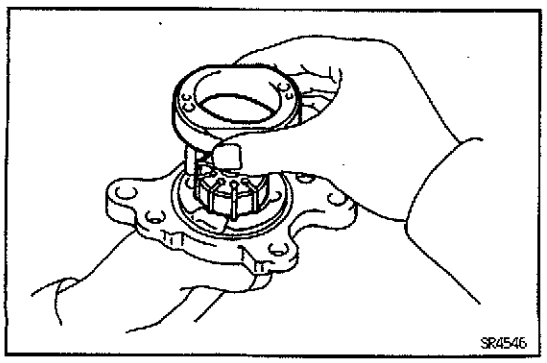
6. BLEED POWER STEERING SYSTEM

(See page SR–6)

COMPONENTS







POWER STEERING PUMP DISASSEMBLY

1. **REMOVE REAR HOUSING**

(a) Remove the 4 bolts.

(b) Place matchmarks on the front and rear housings.

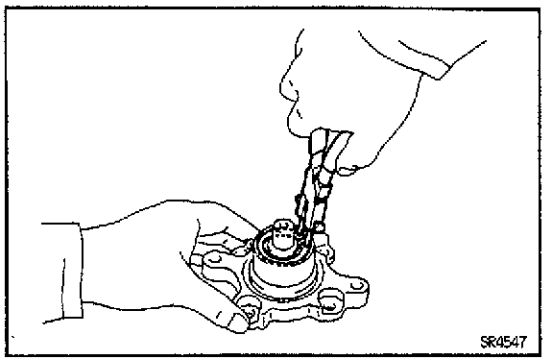
(c) Using a plastic hammer, tap off the front housing.

NOTICE: Be careful that the vane plates, rotor and cam ring do not fall out.

(d) Remove O–ring.

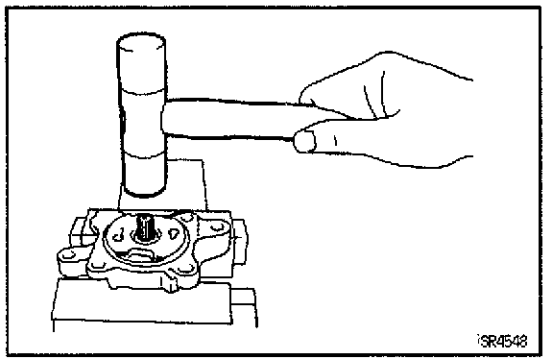
2. **REMOVE CAM RING, ROTOR, VANE PLATES AND STRAIGHT PIN**

NOTICE: Be careful not to scratch the cam ring, rotor, and vane plates.



3. REMOVE PUMP SHAFT

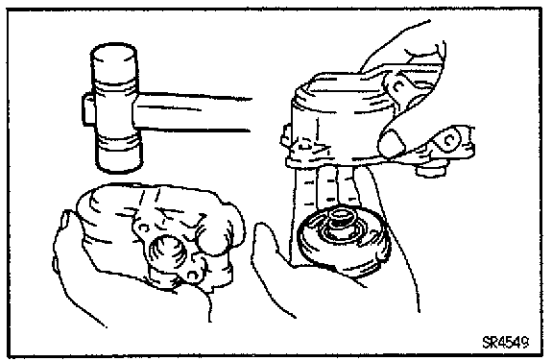
(a) Using snap ring pliers, remove the snap ring.



(b) Clamp the front housing in a vise.
NOTICE: Do not tighten the vise too tight.

(c) Using a plastic hammer, lightly tap the pump shaft out of the front housing.
NOTICE: Be careful not to scratch the upper side of the front housing.

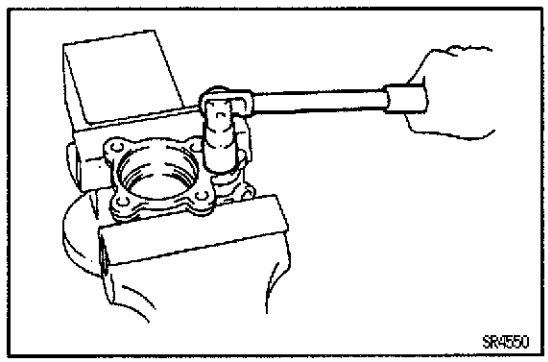
(d) Remove the oil seal retainer.



4. REMOVE PRESSURE PLATE AND SPRING

(a) Using a plastic hammer, tap the bottom end of the rear housing, and remove the pressure plate and spring.
NOTICE: Be careful not to scratch the front side of the pressure plate.

(b) Remove the O–ring.

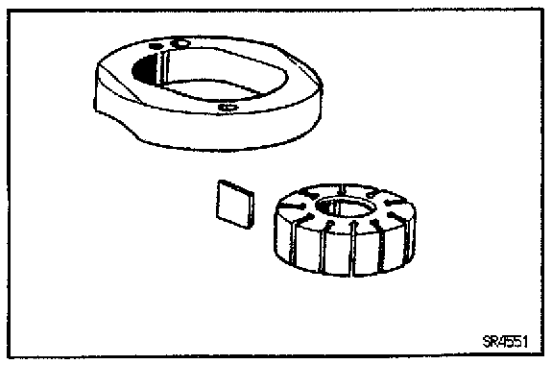


5. REMOVE VALVE LOCK SCREW

(a) Remove the valve lock screw.

(b) Remove the O–ring.
NOTICE: Be careful not to cause fly of the compression spring.

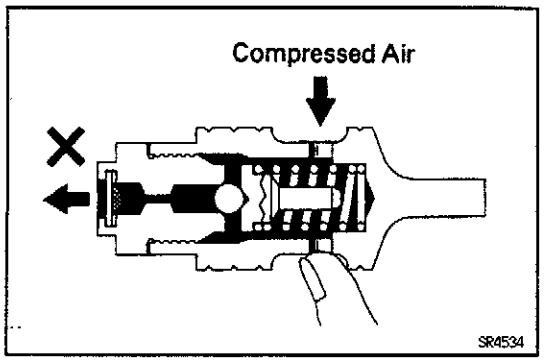
6. REMOVE COMPRESSION SPRING AND FLOW CONTROL VALVE



POWER STEERING PUMP INSPECTION

1. INSPECT ROTOR, CAM RING AND VANE PLATES

Check the cam ring for wear or scratches. If necessary, replace the cam ring, the rotor and the vane plates in a set.

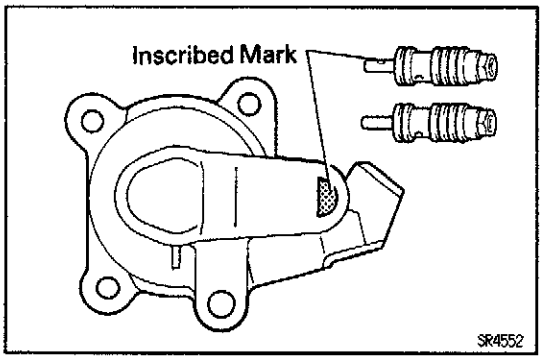


2. INSPECT FLOW CONTROL VALVE

(a) Check the flow control valve for wear or damage.

(b) Apply fluid to the valve and check that it falls smoothly into the valve hole by its own weight.

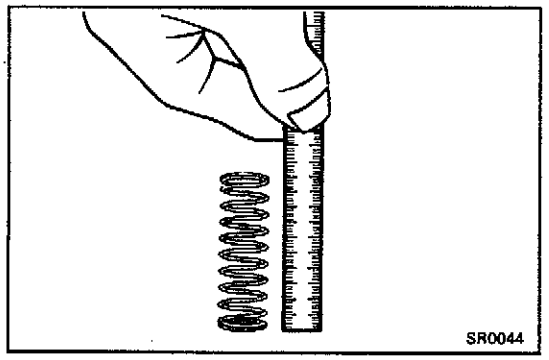
(c) Check the valve for leakage.
Close one of the holes and apply compressed air [392 – 490 kPa (4 – 5 kgf/cm², 57 – 71 psi)] into the opposite side, and confirm that air does not come out from the end holes.



(d) If necessary, replace the valve with one having the letter as inscribed on the front housing.

Pump housing number	Valve cutter mark
0	II
1	I
2	None

SR



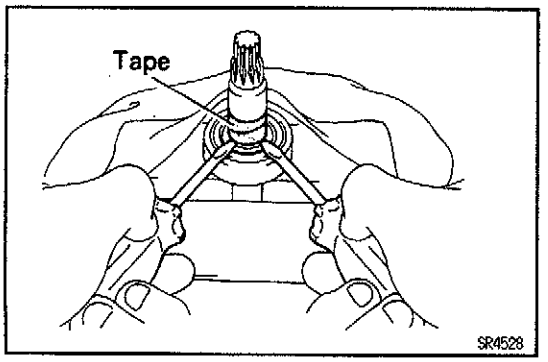
3. INSPECT FLOW CONTROL VALVE SPRING

Check that the spring length is within specification.

Spring length:

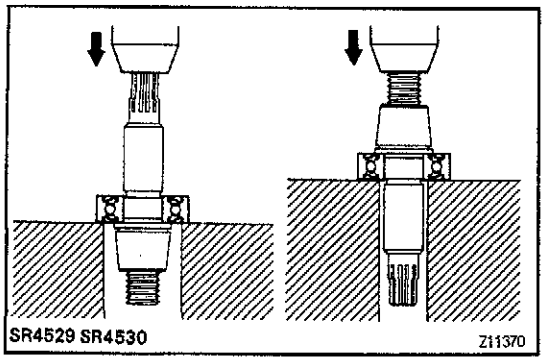
50 – 55 mm (1.97 – 2.17 in.)

If the spring is not within specification, replace it.



4. IF NECESSARY, REPLACE PUMP SHAFT BEARING

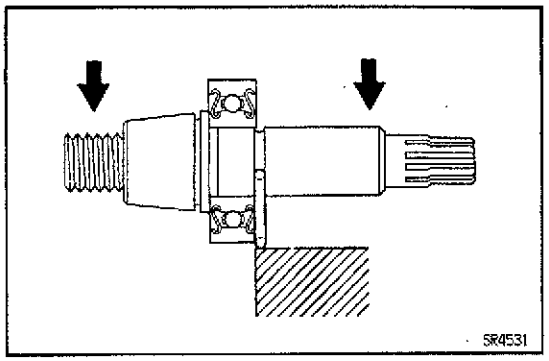
(a) Using 2 screwdribers, remove the snap ring.



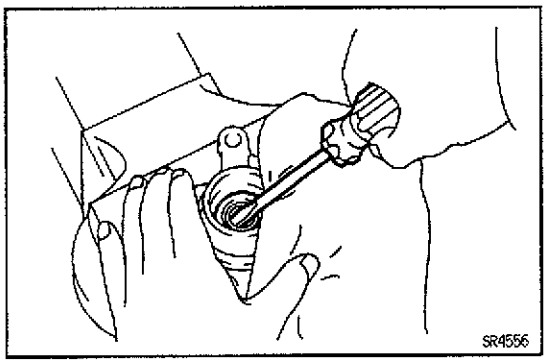
(b) Using a press, press out the bearing.

(c) Using a press, press in a new bearing.

NOTICE: Be careful not to scratch the rotor shaft contact surface for the oil seal and bearing.



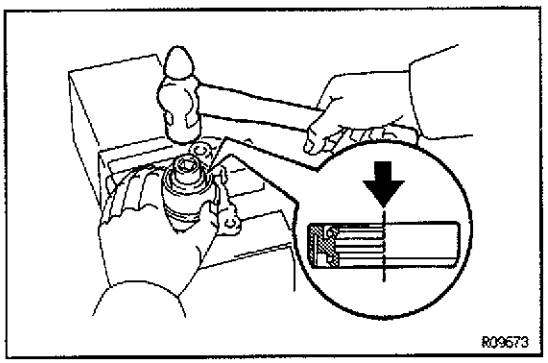
(d) Install the new snap ring.



5. IF NECESSARY, REPLACE OIL SEAL

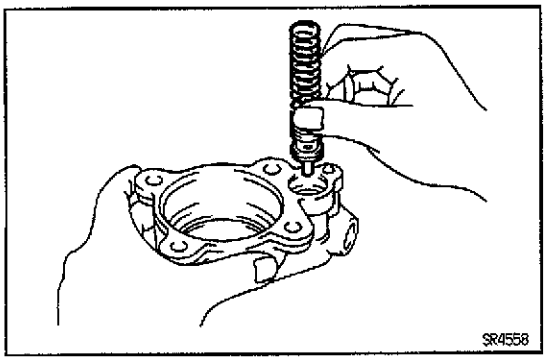
(a) Clamp the front housing in a vise.
NOTICE: Do not tighten the vise too tight.

(b) Using a screwdriver, remove the oil seal.
NOTICE: Be careful not to scratch the housing with a screwdriver.



(c) Apply MP grease No.2 to the lip of a new oil seal.

(d) Using a socket wrench (23 mm), install the new oil seal.
NOTICE:
- **Be careful not to scratch the frictional surface of the front housing.**
- **Make sure you install the oil seal facing the correct direction.**



POWER STEERING PUMP ASSEMBLY

1. COAT POWER STEERING FLUID ON EACH PARTS

2. INSTALL FLOW CONTROL VALVE AND SPRING
Insret the spring and valve to the rear housing.

3. INSTALL VALVE LOCK SCREW

(a) Install a new O–ring to the valve lock screw.

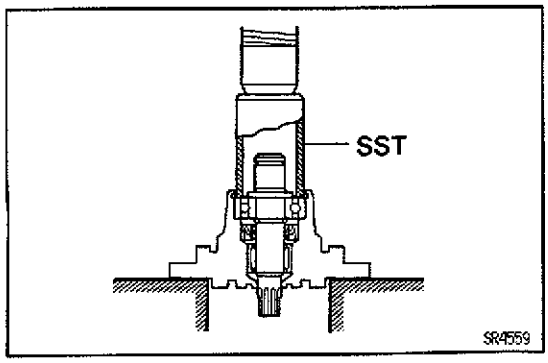
(b) Install the valve lock screw.
Torque: 64 N·m (650 kgf·cm, 47 ft·lbf)

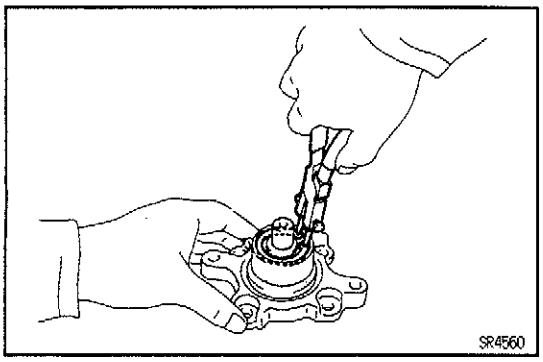
4. INSTALL OIL SEAL RETAINER

5. INSTALL PUMP SHAFT

(a) Place the protruding side of the oil seal retainer to the oil seal side.

(b) Using SST and a press, press in the pump shaft to the front bushing.
SST 09632–36010
NOTICE: Be careful not to scratch the oil seal lip and the rotor frictional surface.

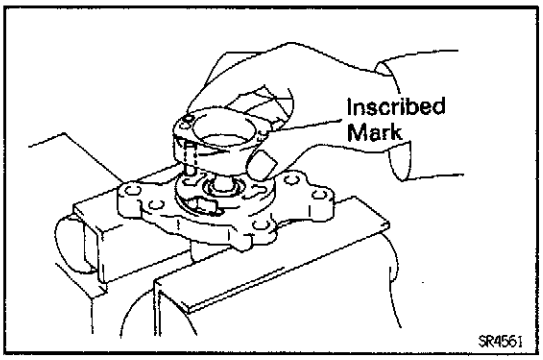




(c) Using snap ring pliers, install the new snap ring.

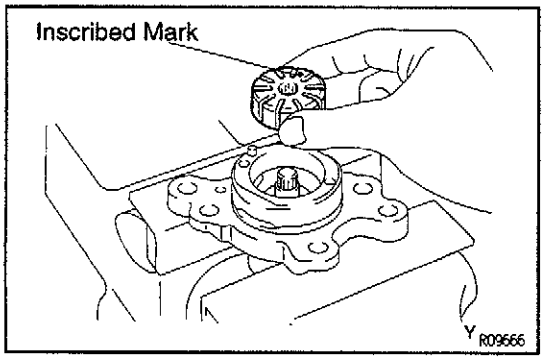
6. INSTALL O–RING AND STRAIGHT PIN

Install new O–ring and new straight pin to the front housing.



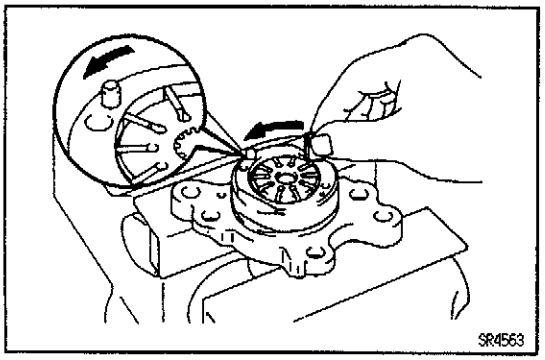
7. INSTALL CAM RING

Install the cam ring with the inscribed mark facing outward.



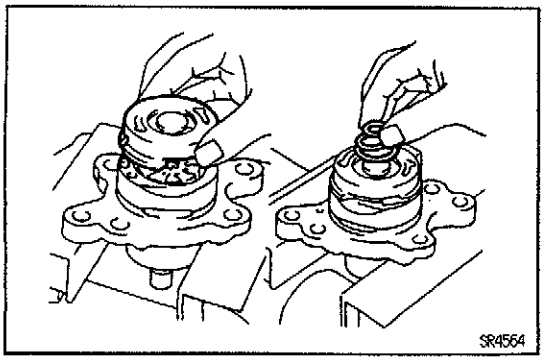
8. INSTALL ROTOR

Install the rotor to the vane pump shaft with the inscribed mark on the rotor facing outward.



9. INSTALL VANE PLATES

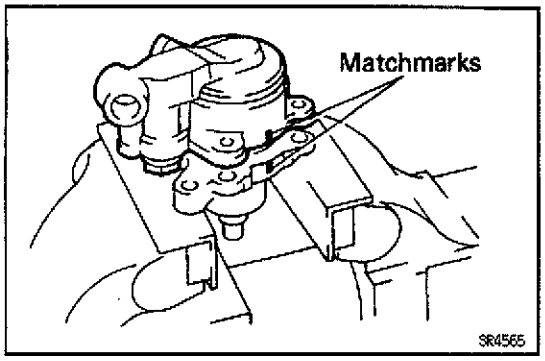
Install the 10 vane plates with the round end facing outward.



10. INSTALL PRESSURE PLATE AND SPRING

(a) Align the cut portion of the pressure plate to the straight pin and install it.

(b) Place the spring on the pressure plate.



11. INSTALL REAR HOUSING

(a) Apply fluid to a new O–ring and install it to the rear housing.

(b) Align the matchmarks on the front and rear housings and assemble them.

(c) Torque the 4 bolts.
Torque: 37 N·m (375 kgf·cm, 27 ft·lbf)

12. CHECK PUMP SHAFT ROTATION CONDITION

Check that the pump shaft rotates smoothly without abnormal noise.