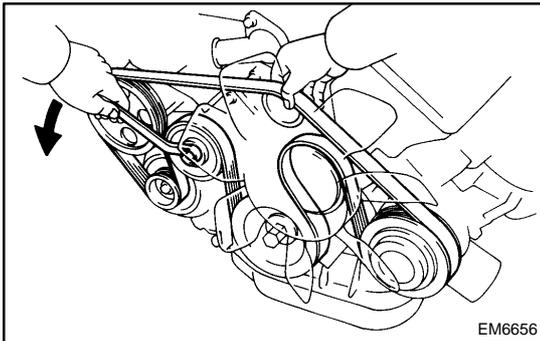


OVERHAUL

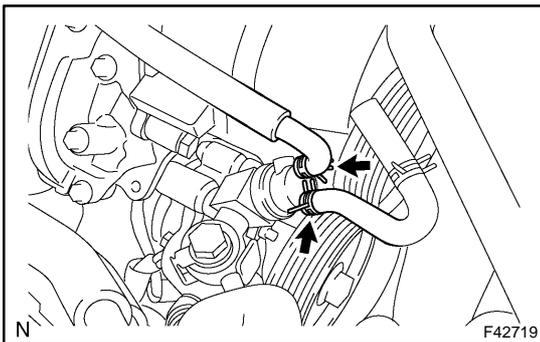
NOTICE:

- When using a vice, do not overtighten.
 - When installing, coat the parts indicated by the arrows with power steering fluid (See page 51-7).
1. DRAIN POWER STEERING FLUID (See page 51-3)
 2. REMOVE AIR CLEANER ASSY (See page



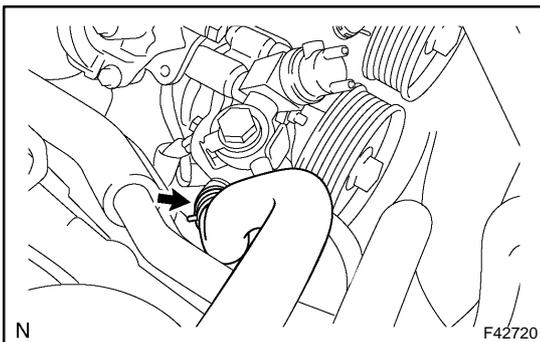
3. REMOVE VANE PUMP V BELT

- (a) Loosen the belt tension by turning the belt tensioner counterclockwise, and remove the belt.

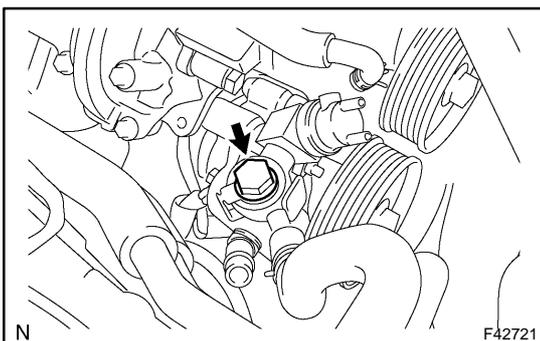


4. SEPARATE OIL RESERVOIR TO PUMP HOSE NO.1

- (a) Loosen the 2 clips and disconnect the 2 vacuum hoses.

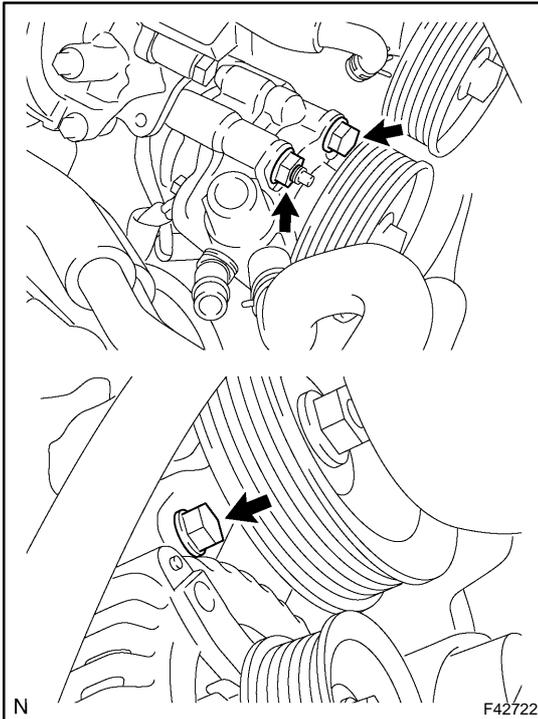


- (b) Loosen the clip and disconnect the hose.

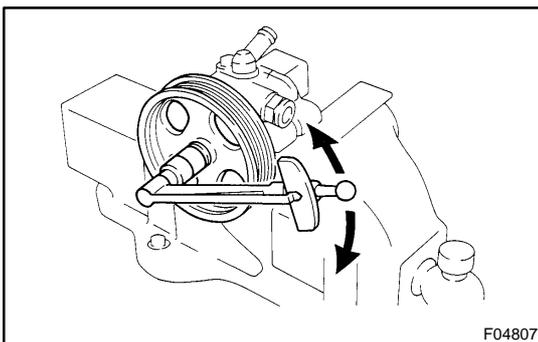


5. SEPARATE PRESSURE FEED TUBE ASSY

- (a) Remove the union bolt and a gasket, disconnect the pressure feed tube.

**6. REMOVE VANE PUMP ASSY**

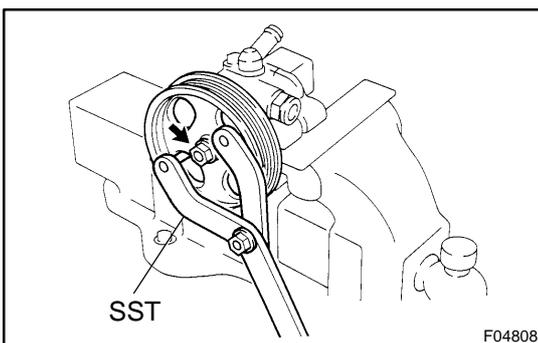
- (a) Remove the 2 bolts and nut.
- (b) Using a torx socket (E10), remove the stud bolt.

**7. MEASURE VANE PUMP ROTATION TORQUE**

- (a) Check that the pump rotates smoothly without abnormal noise.
- (b) Using a torque wrench, check the pump rotating torque.

Rotating torque:

0.28 N·m (2.8 kgf·cm, 2.4 in·lbf) or less

**8. REMOVE VANE PUMP PULLEY**

- (a) Using SST to stop the pulley rotating, loosen the nut.
SST 09960-10010 (09962-01000, 09963-01000)
- (b) Remove the nut and vane pump pulley from the vane pump shaft.

9. REMOVE POWER STEERING SUCTION PORT UNION

- (a) Remove the bolt and suction port union.
- (b) Remove the O-ring from the suction port union.

10. REMOVE PRESSURE PORT UNION

- (a) Remove the pressure port union, flow control valve and spring.
- (b) Remove the O-ring from the pressure port union.

11. REMOVE VANE PUMP HOUSING REAR

- (a) Remove the 4 bolts and vane pump housing rear.

HINT:

If the wave washer and side plate are stuck to the vane pump housing rear, lightly tap the vane pump housing rear with a plastic hammer, and remove the wave washer and side plate.

- (b) Remove the 2 O-rings from the rear housing.

12. REMOVE SIDE PLATE AND WAVE WASHER**13. REMOVE VANE PUMP CAM RING**

- (a) Using a screwdriver, remove the snap ring from the vane pump shaft.

- (b) Remove the cam ring.

14. REMOVE VANE PUMP ROTOR

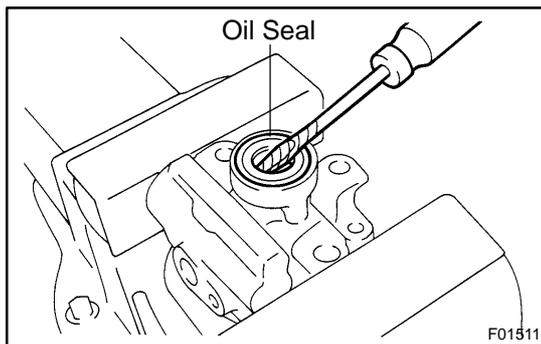
- (a) Remove the vane pump rotor with the 10 vane plates.

NOTICE:

Be careful not to drop the plate.

15. REMOVE VANE PUMP SHAFT**16. REMOVE STRAIGHT PIN**

- (a) Remove the 2 pins from the vane pump housing front.

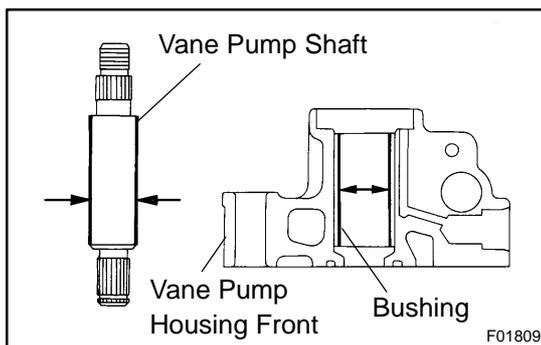
**17. REMOVE VANE PUMP HOUSING OIL SEAL****NOTICE:**

When using a vise, do not overtighten it.

- (a) Using a screwdriver with vinyl tape wound around its tip, remove the housing oil seal.

NOTICE:

Be careful not to damage the vane pump housing front.

**18. INSPECT OIL CLEARANCE**

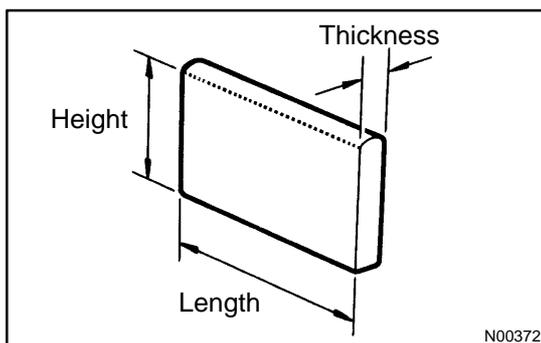
- (a) Using a micrometer and a caliper gauge, measure the oil clearance.

Standard clearance:

0.03 - 0.05 mm (0.0012 - 0.0020 in.)

Maximum clearance: 0.07 mm (0.0028 in.)

If it is more than the maximum, replace the shaft and vane pump housing front.

**19. INSPECT VANE PUMP ROTOR AND VANE PUMP PLATES**

- (a) Using a micrometer, measure the height, thickness and length of the 10 vane plates.

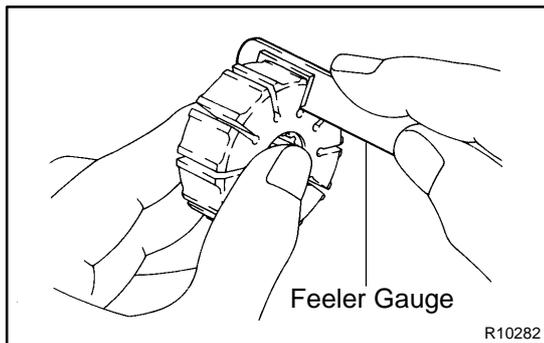
Minimum height: 8.6 mm (0.33858 in.)

Minimum thickness:

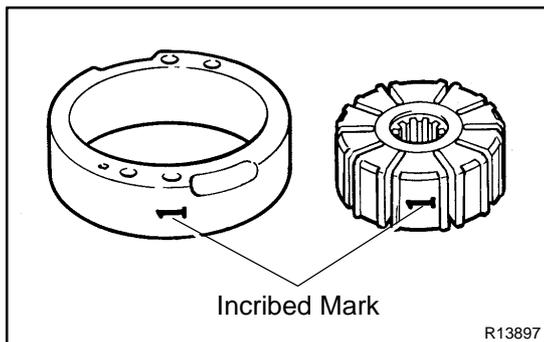
1.397 mm (0.05500 in.)

Minimum length:

14.991 mm (0.59020 in.)



- (b) Using a feeler gauge, measure the clearance between the vane pump rotor groove and vane plate.
Maximum clearance: 0.033 mm (0.00130 in.)



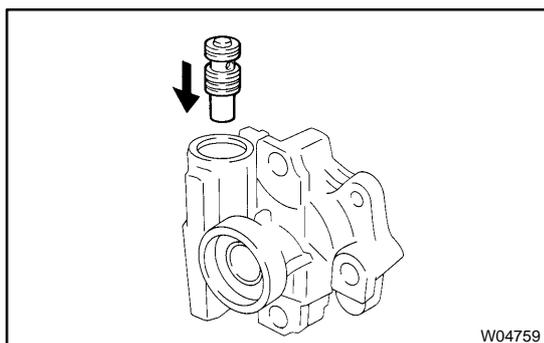
If it is more than the maximum, replace the plate and/or rotor with one having the same mark stamped on the cam ring.

Inscribed mark: 1, 2, 3, 4 or None

HINT:

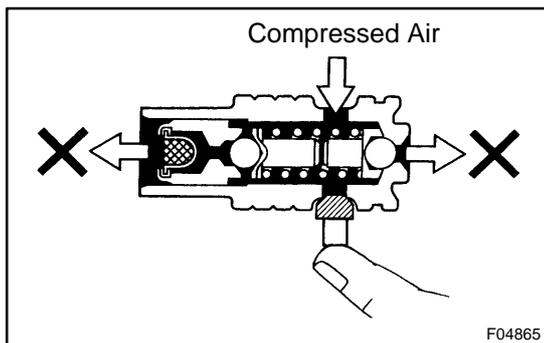
There are 5 vane plate lengths with the following rotor and cam ring marks:

Rotor and cam ring mark	Vane plate part number	Vane plate length mm (in.)
None	44345-26010	14.999 - 15.001 (0.59051 - 0.59059)
1	44345-26020	14.997 - 14.999 (0.59043 - 0.59051)
2	44345-26030	14.995 - 14.997 (0.59035 - 0.59043)
3	44345-26040	14.993 - 14.995 (0.59027 - 0.59035)
4	44345-26050	14.991 - 14.993 (0.59020 - 0.59027)

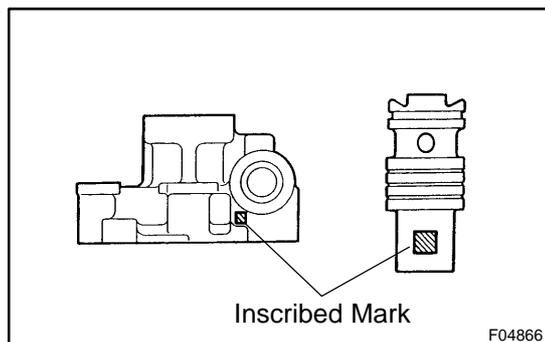


20. INSPECT FLOW CONTROL VALVE

- (a) Coat the flow control valve with power steering fluid and check that it falls smoothly into the flow control valve hole by its own weight.

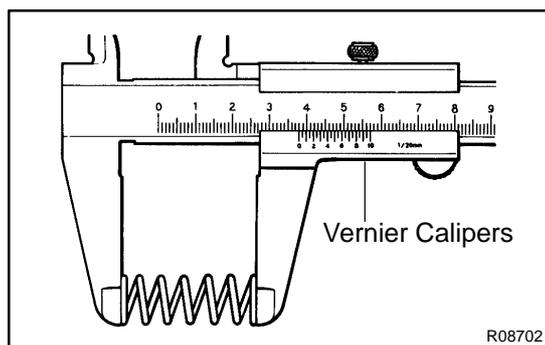


- (b) Check the flow control valve for leakage. Close one of the holes and apply compressed air of 392 - 490 kPa (4 - 5 kgf·cm², 57 - 71 psi) into the opposite side hole, and confirm that air does not come out from the end holes.



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

Inscribed mark: A, B, C, D, E or F



21. INSPECT FLOW CONTROL VALVE COMPRESSION SPRING

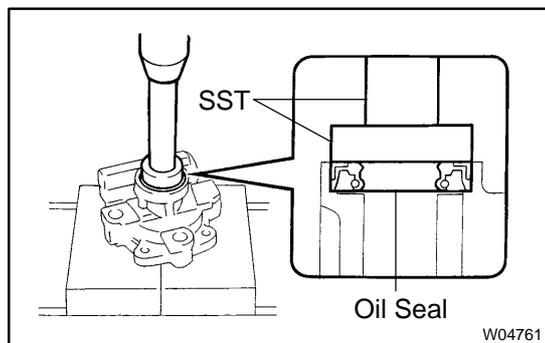
- (a) Using vernier calipers, measure the free length of the spring.

Minimum free length: 33.2 mm (1.307 in.)

If it is not within the specification, replace the spring.

22. INSPECT PRESSURE PORT UNION

If the pressure union seat in the pressure port union is remarkably damaged and it may cause fluid leakage, fluid leakage, replace the pressure port union.



23. INSTALL VANE PUMP HOUSING OIL SEAL

- (a) Coat a new oil seal lip with power steering fluid.
 (b) Using SST, press in the oil seal.

SST 09950-60010 (09951-00320), 09950-70010 (09951-07100)

NOTICE:

Make sure to install the oil seal facing in the correct direction.

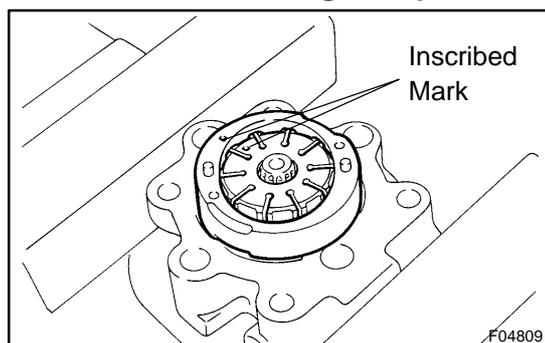
24. INSTALL VANE PUMP SHAFT

25. INSTALL STRAIGHT PIN

- (a) Using a plastic hammer, tap the 2 new pins to the vane pump housing front.

NOTICE:

Be careful no to damage the pins.



26. INSTALL VANE PUMP CAM RING

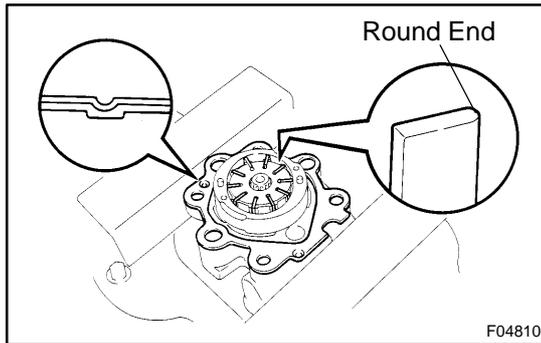
- (a) Install the cam ring with the inscribed mark facing outward.

HINT:

Align the holes of the cam ring with the straight pins.

27. INSTALL VANE PUMP ROTOR

- (a) Install the vane pump rotor with the inscribed mark facing outward.
 (b) Install a new snap ring to the vane pump shaft.



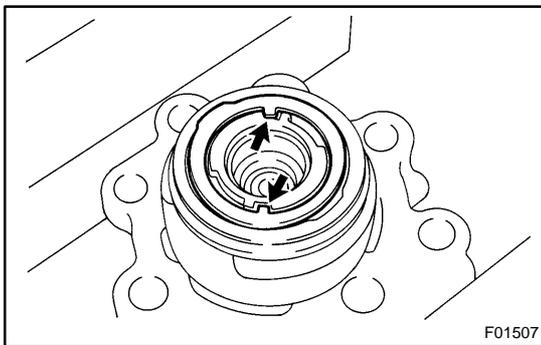
- (c) Install the 10 plates with the round end facing outward.
- (d) Install a new gasket on the front housing.

NOTICE:

Be careful of the direction of the gasket.

28. INSTALL VANE PUMP SIDE PLATE REAR

- (a) Align the holes of the plate and 2 straight pins.

**29. INSTALL VANE PUMP HOUSING REAR**

- (a) Install the wave washer so that its protrusions fit into the slots in the side plate.
- (b) Coat 2 new O-rings with power steering fluid and install them to the rear housing.
- (c) Install the rear housing with the 4 bolts.

Torque: 24 N·m (240 kgf·cm, 17 ft·lbf)

30. INSTALL PRESSURE PORT UNION

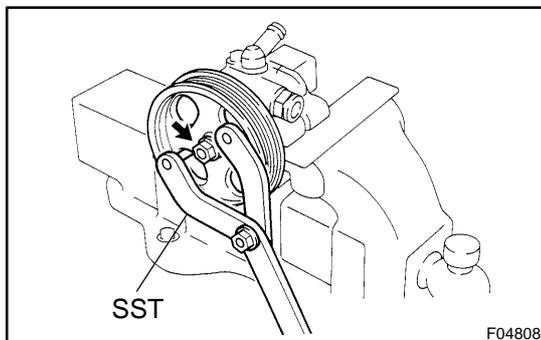
- (a) Install the spring to the vane pump housing front.
- (b) Install the flow control valve facing the correct direction (See page 51-7).
- (c) Coat a new O-ring with power steering fluid and install it to the pressure port union.
- (d) Install the pressure port union.

Torque: 83 N·m (850 kgf·cm, 61 ft·lbf)

31. INSTALL POWER STEERING SUCTION PORT UNION

- (a) Coat a new O-ring with power steering fluid and install it to the suction port union.
- (b) Install the suction port union with the bolt.

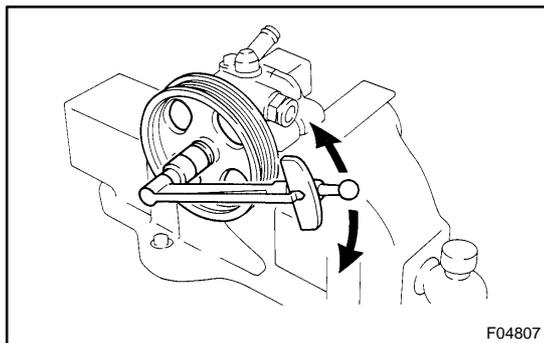
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)

**32. INSTALL VANE PUMP PULLEY**

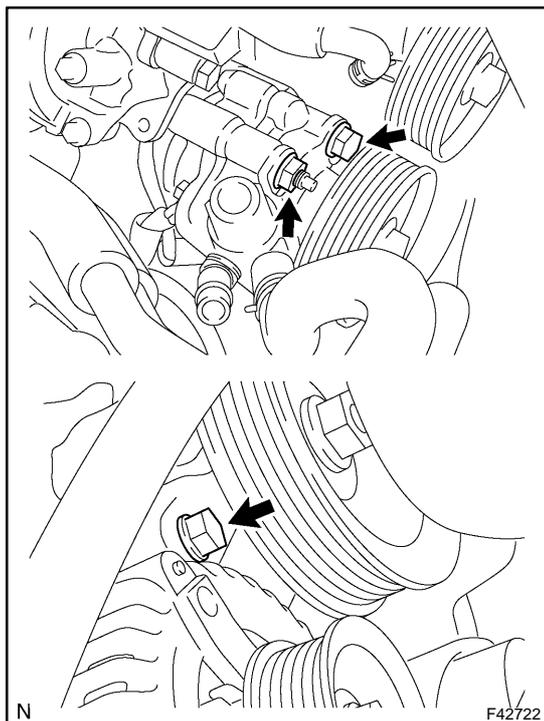
- (a) Install the vane pump pulley and nut to the vane pump shaft.
- (b) Using SST to stop the pulley rotating, torque a new pulley set nut.

SST 09960-10010 (09962-01000, 09963-01000)

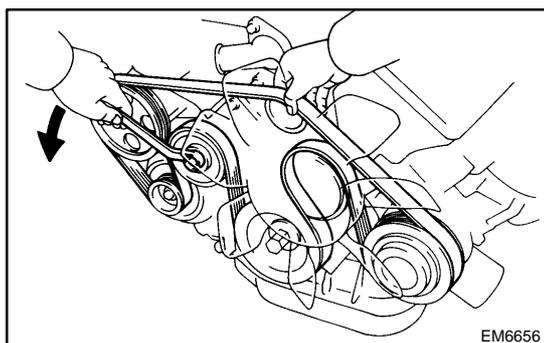
Torque: 44 N·m (449 kgf·cm, 32 ft·lbf)

**33. MEASURE VANE PUMP ROTATION TORQUE**

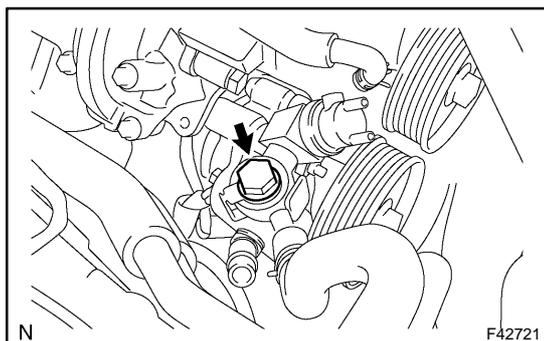
- (a) Check that the pump rotates smoothly without abnormal noise.
- (b) Using a torque wrench, check the pump rotating torque.
Rotating torque:
0.28 N·m (2.8 kgf·cm, 2.4 in·lbf) or less

**34. INSTALL VANE PUMP ASSY**

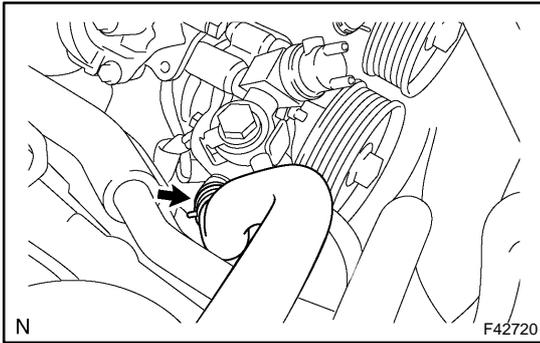
- (a) Using a torx socket (E10), install the vane pump with the stud bolt.
Torque: 22 N·m (224 kgf·cm, 16 ft·lbf)
- (b) Install the 2 bolts and nut.
Torque: 43 N·m (438 kgf·cm, 32 ft·lbf)

**35. INSTALL VANE PUMP V BELT**

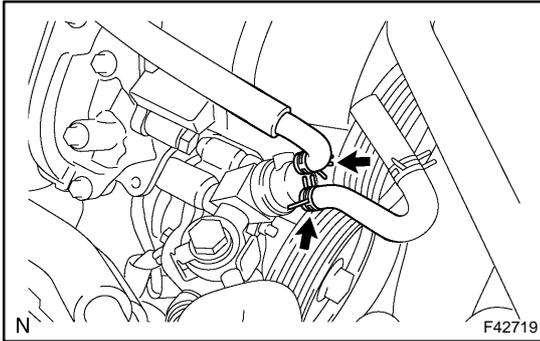
- (a) Loosen the belt tension by turning the belt tensioner counterclockwise, and install the belt.

**36. CONNECT PRESSURE FEED TUBE ASSY**

- (a) Install the union bolt with a new gasket on each side of the tube.
Torque: 51 N·m (520 kgf·cm, 38 ft·lbf)

**37. CONNECT OIL RESERVOIR TO PUMP HOSE NO.1**

(a) Install the hose with the clip.



(b) Install the 2 hose with the 2 clip.

38. AIR CLEANER ASSY

39. ADD POWER STEERING FLUID (See page 51-3)

40. BLEED POWER STEERING FLUID (See page 51-3)

41. INSPECT FLUID LEAK (See page 51-3)