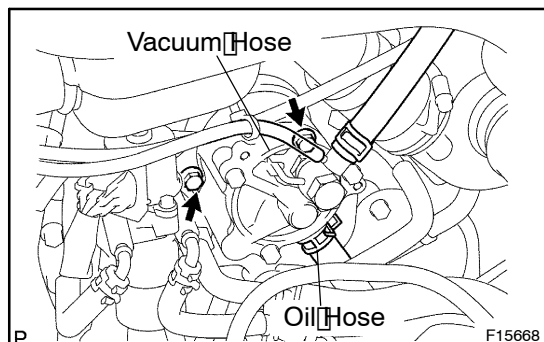


OVERHAUL

1. REMOVE AIR CLEANER ASSY (See page 14-91)



2. REMOVE VACUUM PUMP ASSY

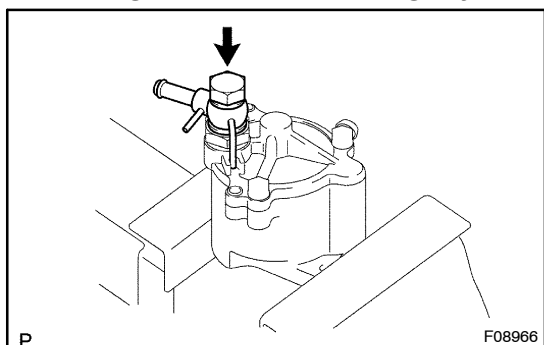
- (a) Disconnect 2 vacuum hoses and oil hose from the vacuum pump.
- (b) Remove the 2 bolts and vacuum pump.
- (c) Remove the 2 O-rings from the vacuum pump.

3. FIX VACUUM PUMP ASSY

- (a) Using soft jaws on the vice, place the vacuum pump in the vice.

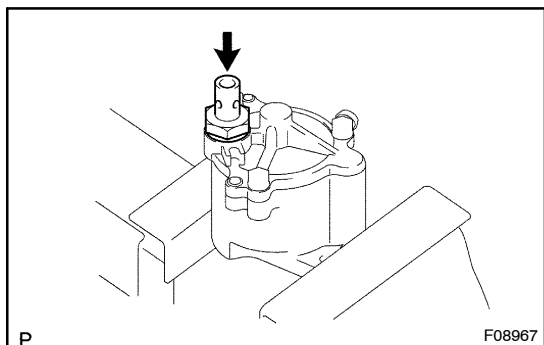
NOTICE:

Do not tighten the vice too tightly.



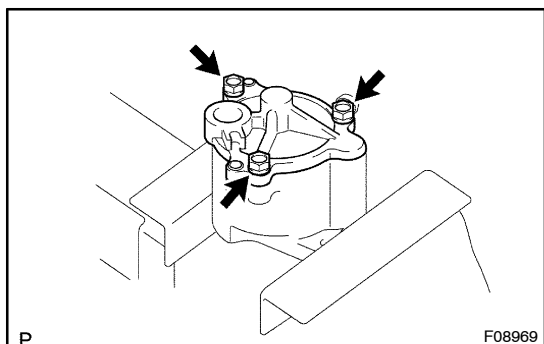
4. REMOVE UNION

- (a) Remove the union bolt, union and 2 gaskets.



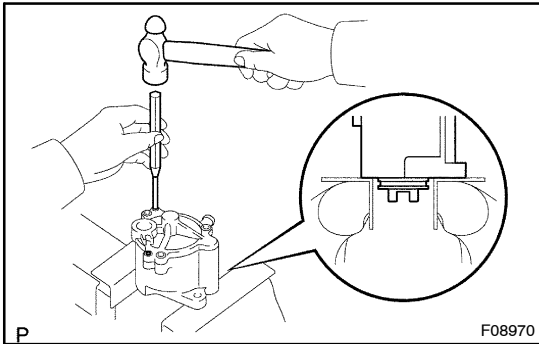
5. REMOVE CHECK VALVE SUB-ASSY

- (a) Remove the check valve and gasket.



6. REMOVE VACUUM PUMP ROTOR SUB-ASSY

- (a) Remove the 3 bolts.

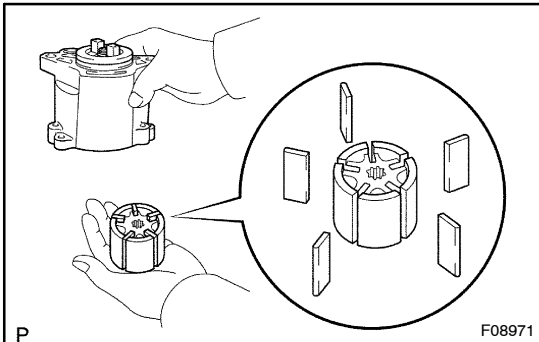


- (b) Place the vacuum pump on vise, as shown in the illustration.

NOTICE:

Do not tighten the vise.

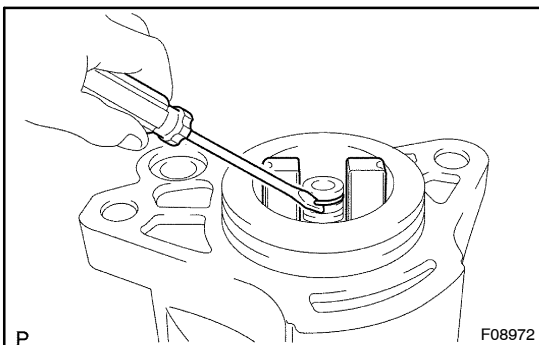
- (c) Using a pin punch and hammer, drive out the 2 straight pins.
(d) Remove the end cover and 2 O-rings.



- (e) Remove the rotor and 5 blades.

NOTICE:

Be careful not to drop the blades.



7. REMOVE VACUUM PUMP COUPLING

- (a) Using a screw driver, remove the snap ring.
(b) Remove the coupling.

8. INSPECT VACUUM PUMP BLADE A

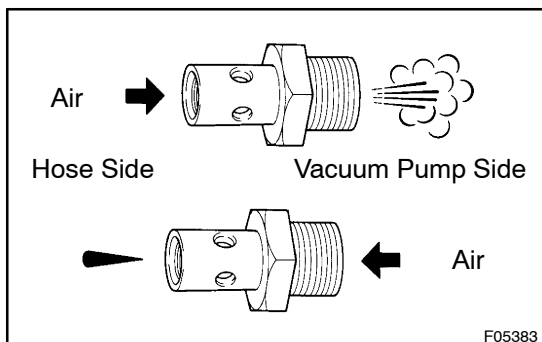
- (a) Check the blades for wear or damage.
(b) Using a micrometer, measure the height, width and length of the blades.

Minimum height: 16.20 mm (0.6378 in.)

Minimum width: 5.95 mm (0.2343 in.)

Minimum length: 44.96 mm (1.7701 in.)

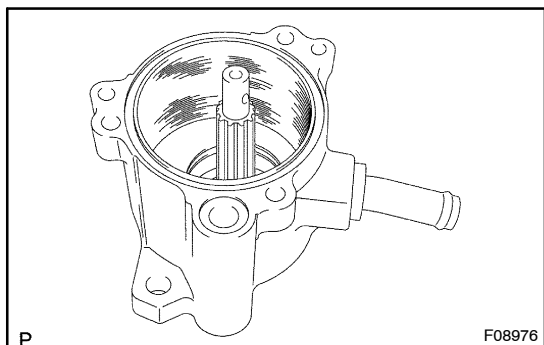
If necessary, replace the blade.



9. INSPECT CHECK VALVE SUB-ASSY

- (a) Check that air flows from the hose side to the pump side.
(b) Check that air does not flow from the pump side to the hose side.

If necessary, replace the check valve.



10. INSPECT CASING

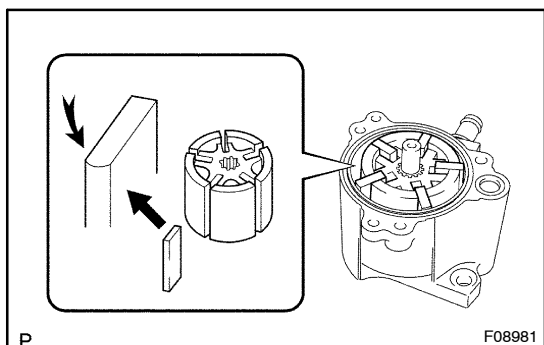
- (a) Inspect the inside surface on the casing for scoring. If necessary, replace the vacuum pump assembly.

11. INSTALL VACUUM PUMP COUPLING

- (a) Place the coupling to the rotor shaft.
 (b) Install a new snap ring to the rotor shaft.

12. INSTALL VACUUM PUMP ROTOR SUB-ASSY

- (a) Coat the rotor with engine oil, and install it to the rotor shaft.

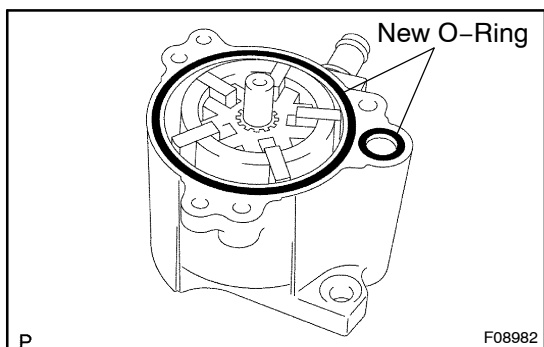


13. INSTALL VACUUM PUMP BLADE A

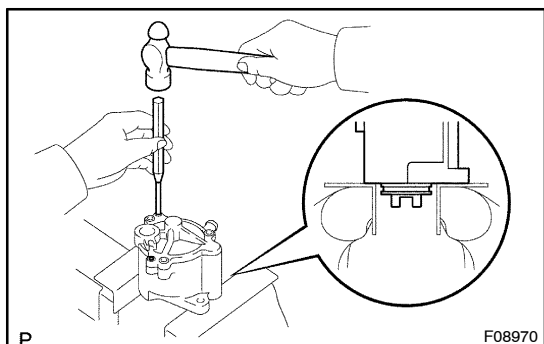
- (a) Coat the 5 blades with engine oil.
 (b) Install the 5 blades with the round end facing outward.

HINT:

Be sure that the blades and rotor surfaces are even.



- (c) Coat 2 new O-rings with engine oil, and place them to the casing.

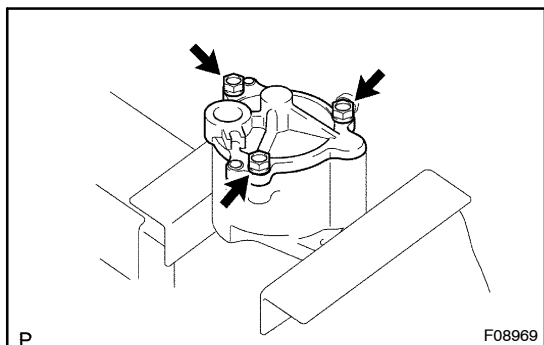


- (d) Place the vacuum pump on the vise, as shown in the illustration.

NOTICE:

Do not tighten the vise.

- (e) Place the end cover, and temporarily install the 3 bolts.
 (f) Using a pin punch and hammer, drive in the 2 straight pins.



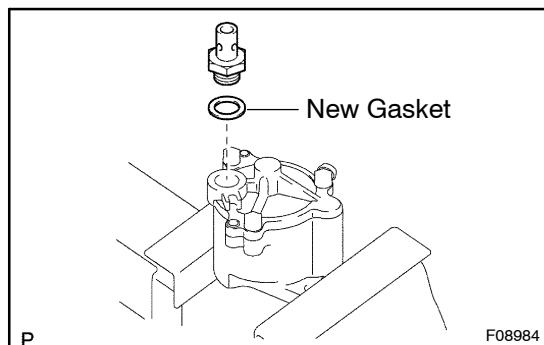
- (g) Using soft jaws on the vise, place the vacuum pump in the vise.

NOTICE:

Do not tighten the vise too tightly.

- (h) Tighten the 3 bolts.

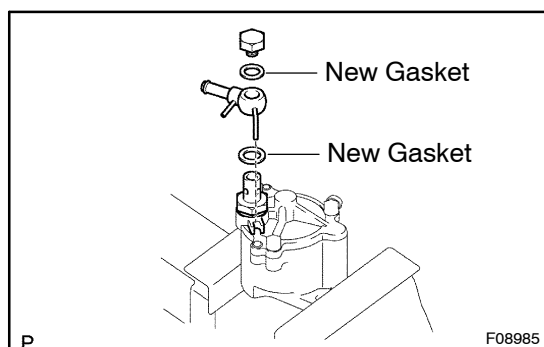
Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)



14. INSTALL CHECK VALVE SUB-ASSY

- (a) Install the check valve and a new gasket.

Torque: 74 N·m (750 kgf·cm, 54 ft·lbf)



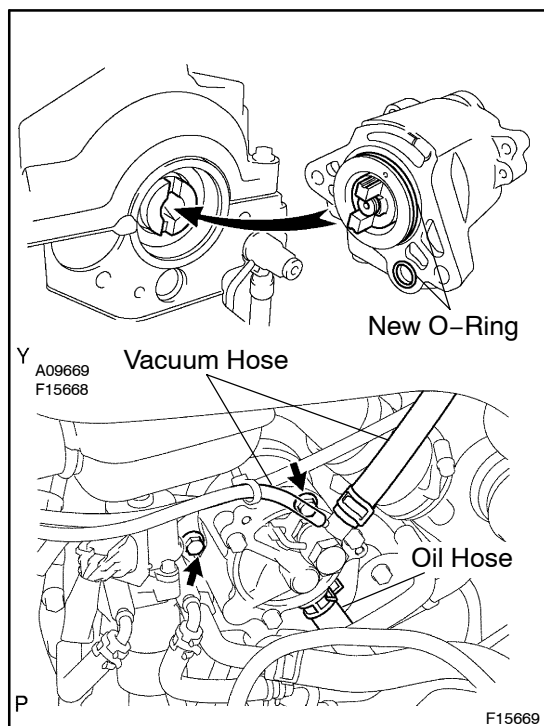
15. INSTALL UNION

- (a) Install the vacuum hose union and 2 new gaskets with the union bolt.

Torque: 13.7 N·m (140 kgf·cm, 10 ft·lbf)

HINT:

Align and insert the pin of the union into the matching hole of the casing.



16. INSTALL VACUUM PUMP ASSY

- (a) Coat 2 new O-rings with engine oil, and install them to the vacuum pump.
- (b) Insert the vacuum pump, align the coupling with slit of the camshaft.
- (c) Install the 2 bolts.
- Torque: 21 N·m (214 kgf·cm, 15 ft·lbf)**
- (d) Connect 2 vacuum hoses and oil hose.

17. INSTALL AIR CLEANER ASSY**(See page 14-91)****18. CHECK VACUUM PUMP OPERATION (See page 32-25)**