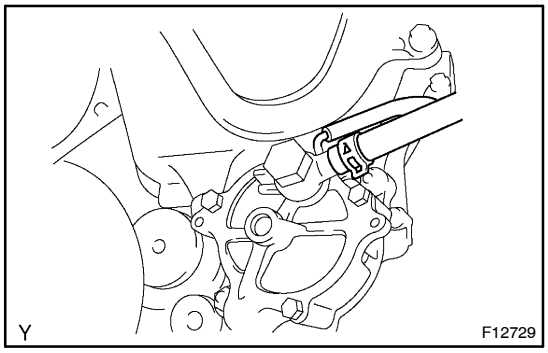
320QK–01

OVERHAUL

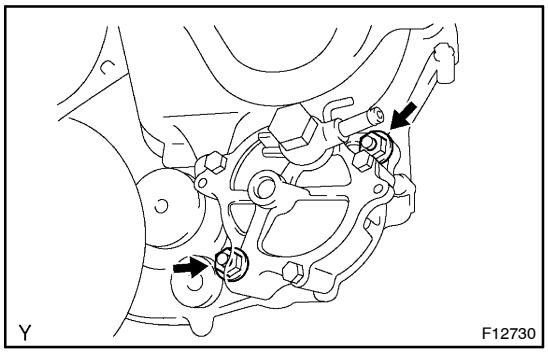
1. REMOVE ENGINE UNDER COVER ASSY REAR

(a) Remove the 4 bolts and remove the engine under cover assy rear.



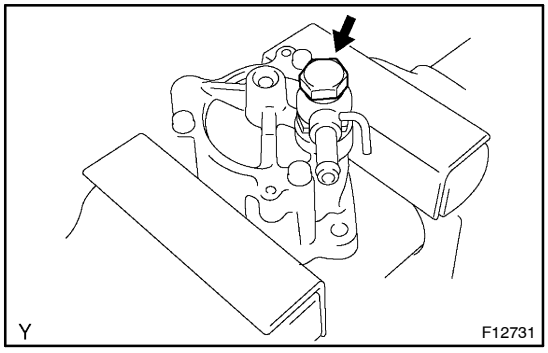
2. REMOVE VACUUM PUMP ASSY

(a) Slide the clip and disconnect the 2 vacuum hoses from the vacuum pump.



(b) Remove the 2 nuts and pull out the vacuum pump from the engine.

(c) Remove the 2 O–rings.

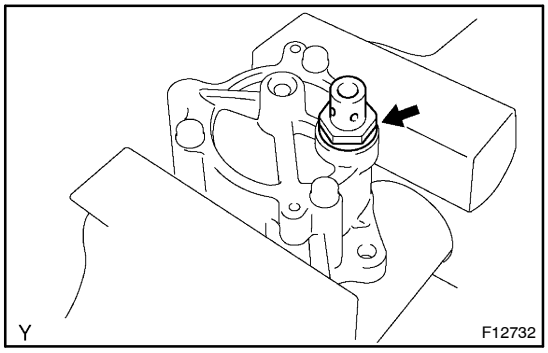


3. REMOVE CHECK VALVE SUB–ASSY

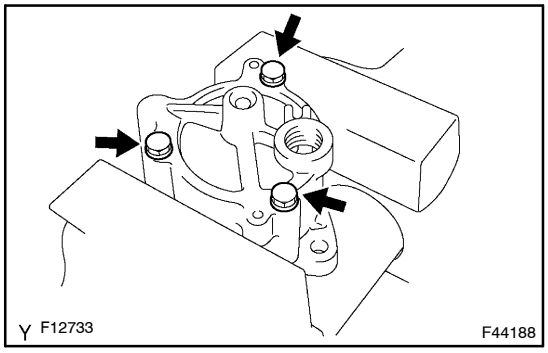
(a) Using soft jaws in a vise, place vacuum pump in vise, and remove the union bolt, union and 2 gaskets.

NOTICE:

Do not tighten the vise.

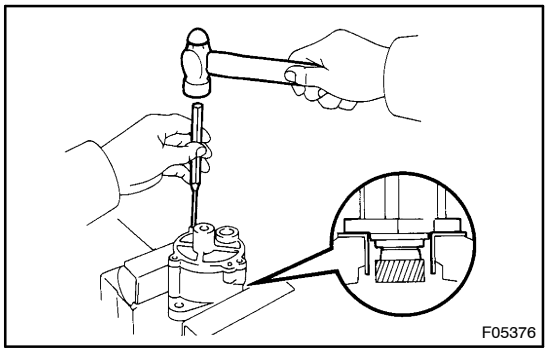


(b) Remove the check valve and gasket.



4. REMOVE VACUUM PUMP END COVER

(a) Remove the 3 bolts.



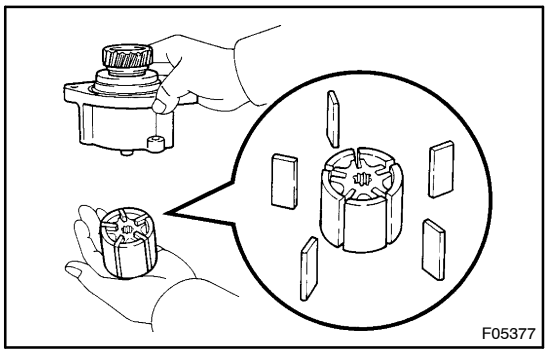
(b) Place the vacuum pump in a vise as shown in the illustration.

NOTICE:

Do not tighten the vise too tightly.

(c) Using a pin punch (ϕ5 mm) and hammer, drive out the 2 straight pins.

(d) Remove the end cover and 2 O–rings.



5. REMOVE VACUUM PUMP ROTOR SUB–ASSY

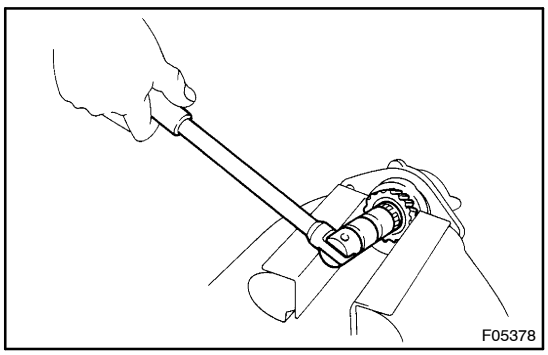
(a) Remove the vacuum pump rotor sub–assy with 5 blades.

NOTICE:

Be careful not to drop the blades.

6. REMOVE VACUUM PUMP BLADE A

(a) Remove the 5 vacuum pump blades from the vacuum pump rotor sub–assy.



7. REMOVE VACUUM PUMP GEAR

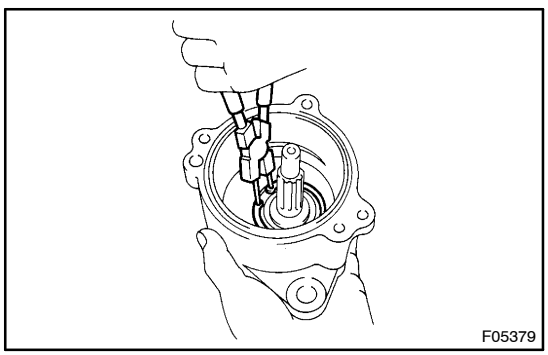
(a) Using soft jaws in a vise, clamp the gear in the vise.

NOTICE:

Do not tighten the vise too tightly.

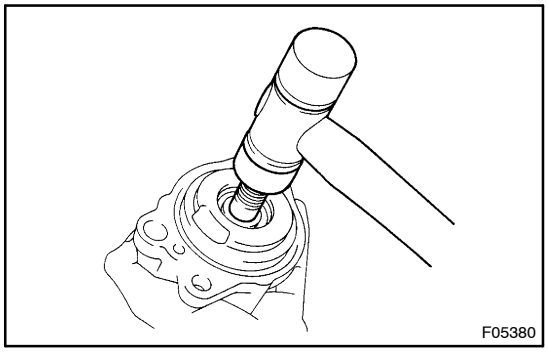
(b) Remove the gear lock nut.

(c) Remove the vacuum pump gear and woodruff key.

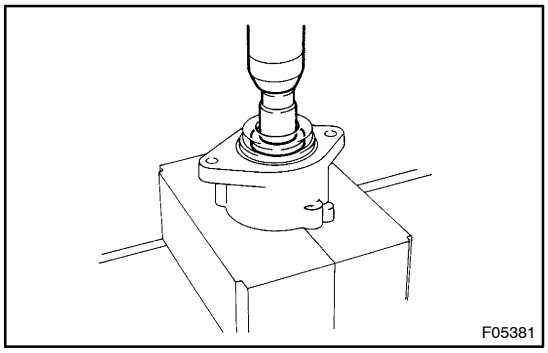


8. REMOVE VACUUM PUMP SHAFT

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

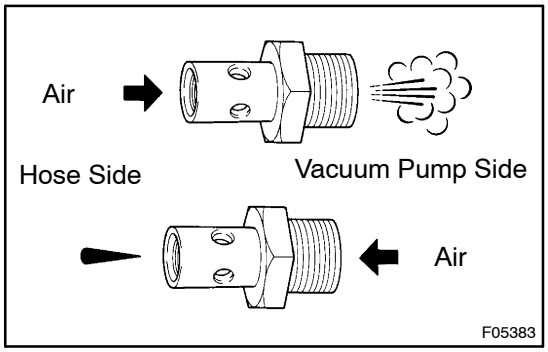


(b) Using a plastic hammer, tap out the vacuum pump shaft.



9. REMOVE BALL BEARING

(a) Using a press and a 17 mm socket wrench, press out the ball bearing.

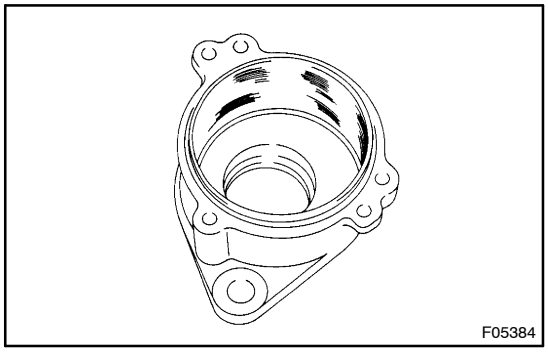


10. INSPECT CHECK VALVE SUB–ASSY

(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.

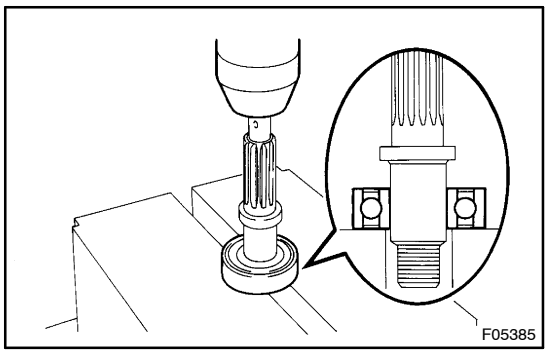
If necessary, replace the check valve.



11. INSPECT VACUUM PUMP HOUSING

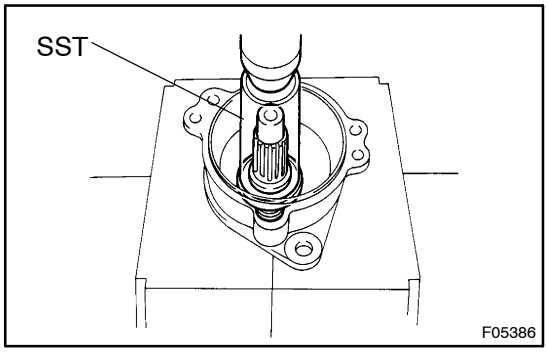
(a) Inspect the inside surface on the casing for scoring.

If necessary, replace the vacuum pump assy.



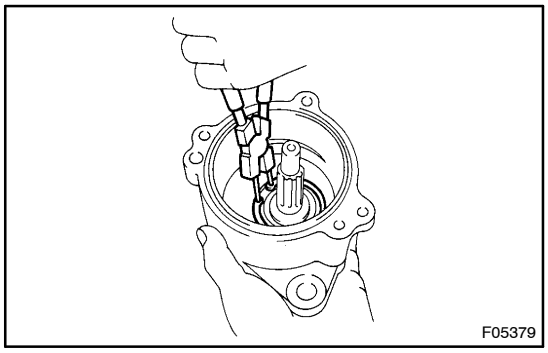
12. INSTALL BALL BEARING

(a) Using a press, install the new ball bearing to the vacuum pump shaft.



13. INSTALL VACUUM PUMP SHAFT

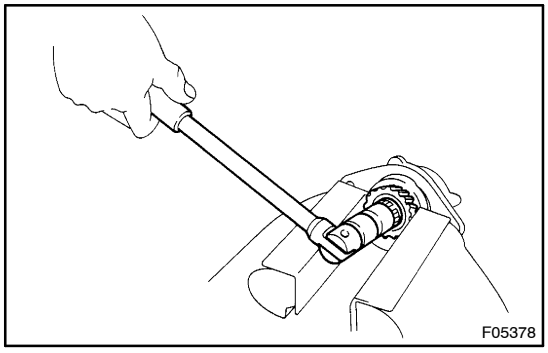
(a) Using SST and a press, install the vacuum pump shaft to the housing.
SST 09608–04031



(b) Using snap ring pliers, install the snap ring.

14. INSTALL VACUUM PUMP GEAR

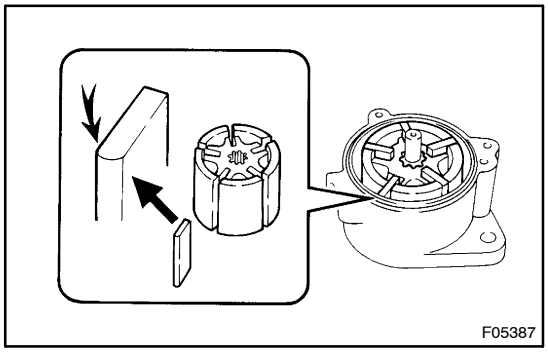
(a) Temporarily install the woodruff key, vacuum pump gear and gear lock nut to the pump.



(b) Using soft jaws in a vise, clamp the vacuum pump gear in the vise.

NOTICE:
Do not tighten the vise excessively.

(c) Tighten the gear lock nut.
Torque: 110 N·m (1,125 kgf·cm, 81 ft·lbf)



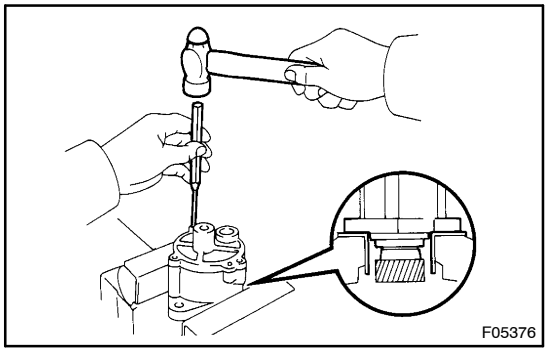
15. INSTALL VACUUM PUMP BLADE A

(a) Apply the engine oil to the rotor, and install the rotor in the casing.

(b) Install the 5 new blades with the round end facing outward.

HINT:

- Apply engine oil to the blades.
- Be sure that the blades and rotor surfaces are even.



16. INSTALL VACUUM PUMP END COVER

(a) Place the vacuum pump in a vise, as shown in the illustration.

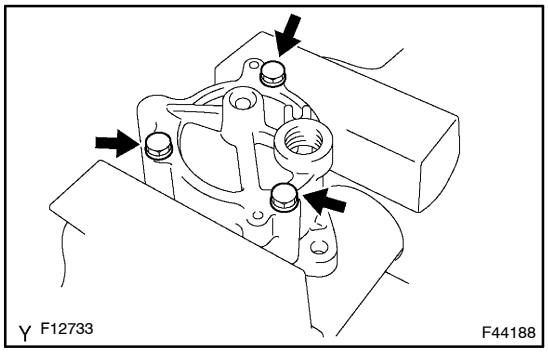
NOTICE:

Do not tighten the vise excessively.

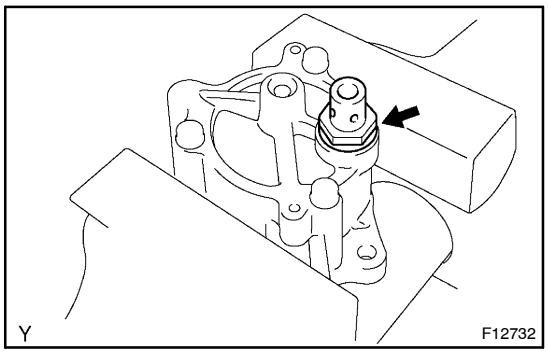
(b) Install 2 new O–rings.

(c) Install the end cover and temporarily install the 3 bolts.

(d) Using a pin punch (ϕ5 mm) and hammer, drive in the 2 straight pins.

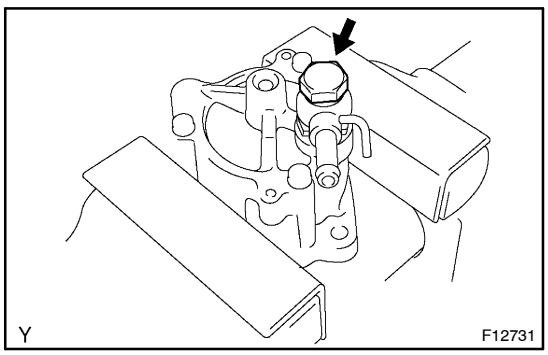


(e) Tighten the 3 bolts.
Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)



17. INSTALL CHECK VALVE SUB–ASSY

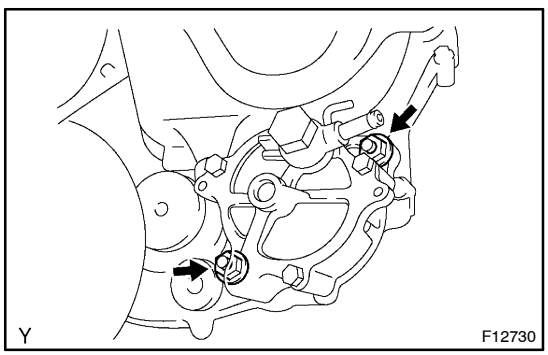
(a) Install a new gasket and the check valve.
Torque: 74 N·m (750 kgf·cm, 54 ft·lbf)



(b) Install the vacuum pump union and 2 new gaskets with the union bolt.
Torque: 14 N·m (140 kgf·cm, 10 ft·lbf)

HINT:

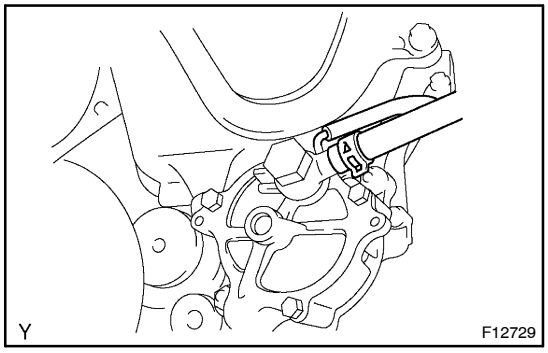
Align and insert the union pin into the matching hole of the casing.



18. INSTALL VACUUM PUMP ASSY

(a) Install 2 new O–rings.

(b) Install the pump to the engine with the 2 nuts.
Torque: 21 N·m (210 kgf·cm, 15 ft·lbf)



(c) Connect the 2 hoses with clip to the vacuum pump.

19. INSTALL ENGINE UNDER COVER ASSY REAR

(a) Install the engine under cover assy rear with the 4 bolts.

20. INSPECT VACUUM PUMP ASSY (See page 32–51)