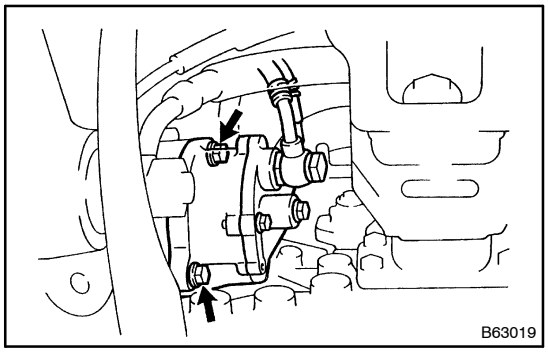
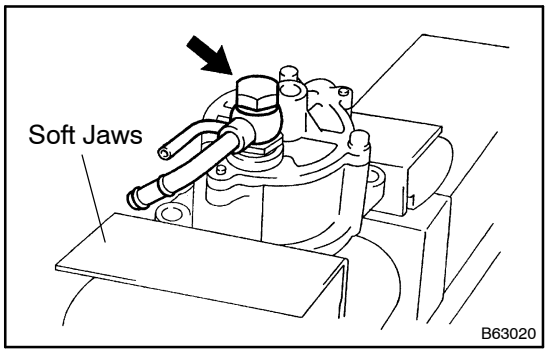
320TY–01

OVERHAUL



1. REMOVE VACUUM PUMP ASSY

(a) Disconnect the 2 vacuum hoses from the vacuum pump.
(b) Remove the 2 bolts and pump from the engine.
(c) Remove the 2 O–rings.



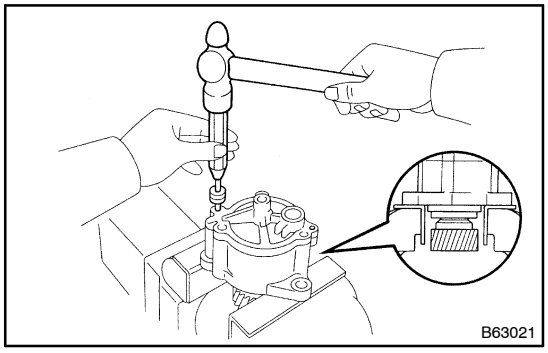
2. REMOVE VACUUM PUMP UNION

(a) Place the vacuum pump on a vise, as shown in the illustration.
(b) Remove the union bolt, union and 2 gaskets.

NOTICE:
Do not tighten the vise too tightly.

3. REMOVE CHECK VALVE

(a) Remove the check valve and gasket.



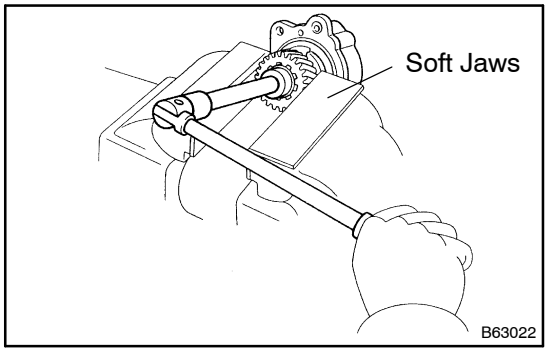
4. REMOVE END COVER

(a) Remove the 3 bolts.
(b) Place the vacuum pump on a vise, as shown in the illustration.

NOTICE:
Do not tighten the vice.

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

5. REMOVE VACUUM PUMP BLADE A

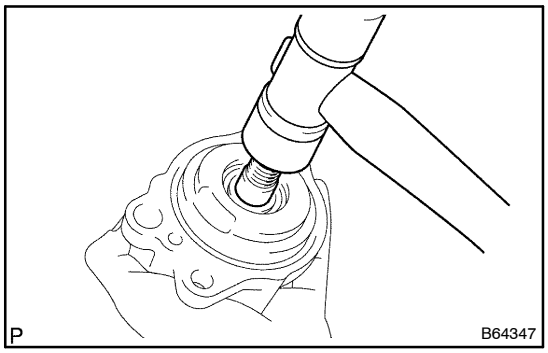


6. REMOVE VACUUM PUMP GEAR

(a) Using soft jaws on a vise, clamp the gear in the vise.
(b) Remove the gear lock nut.
(c) Remove the gear and woodruff key.

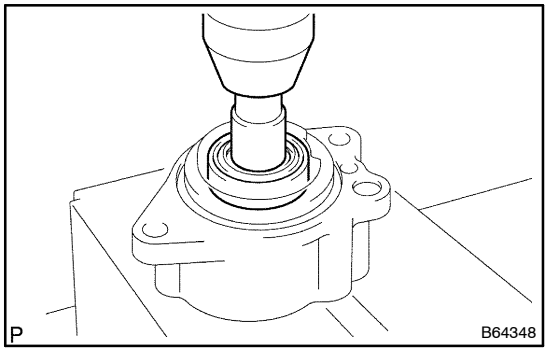
7. REMOVE SNAP RING

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



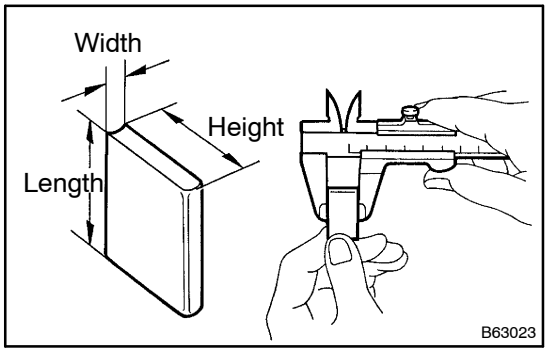
8. REMOVE SHAFT

(a) Using a plastic hammer, tap out the rotor shaft.



9. REMOVE BALL BEARING

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



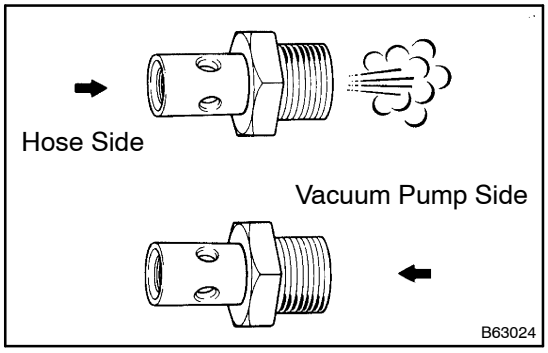
10. INSPECT VACUUM PUMP BLADE A

(a) Check the blades for wear or damage.
(b) Using vernier calipers, measure the dimensions of the blades.

Minimum length:

Minimum Height	16.50 mm (0.6496 in.)
Minimum Width	5.95 mm (0.2343 in.)
Minimum Length	44.60 mm (1.7559 in.)

If necessary, replace the blade.

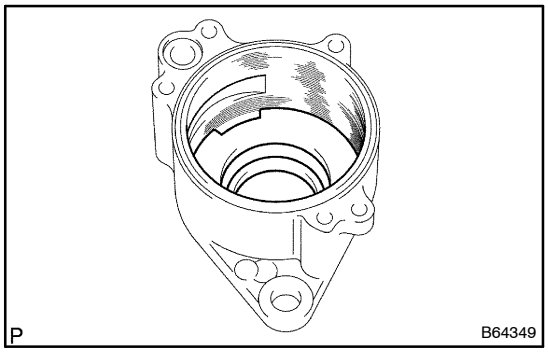


11. INSPECT CHECK VALVE

(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.

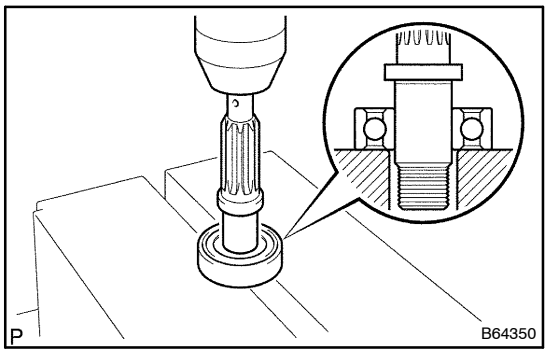
If necessary, replace the check valve.



12. INSPECT VACUUM PUMP CASE

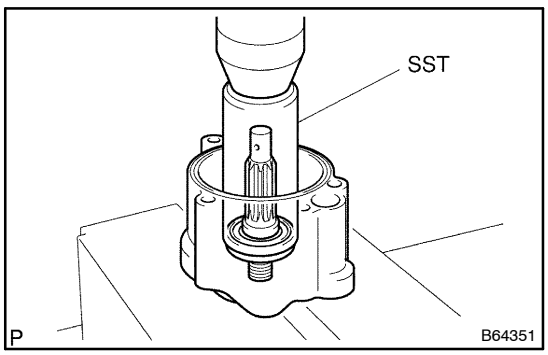
(a) Inspect the inside surface on the casing for scoring.

If necessary, replace the vacuum pump assembly.



13. INSTALL BALL BEARING

(a) Using a press, press in a new bearing to the rotor shaft.



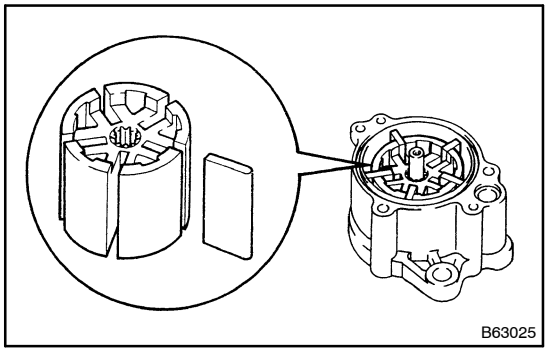
14. INSTALL SHAFT

(a) Using SST and press, press in the rotor shaft to the casing.

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15. INSTALL SNAP RING

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



16. INSTALL VACUUM PUMP ROTOR SUB–ASSY

(a) Apply engine oil to the rotor and install it to the rotor shaft.

17. INSTALL VACUUM PUMP BLADE A

(a) Apply engine oil to the blades.
(b) Install the 5 blades with the round end facing outward.
(c) Make sure that the blades and rotor surfaces are even.

18. INSTALL END COVER

(a) Place the vacuum pump on a vise.

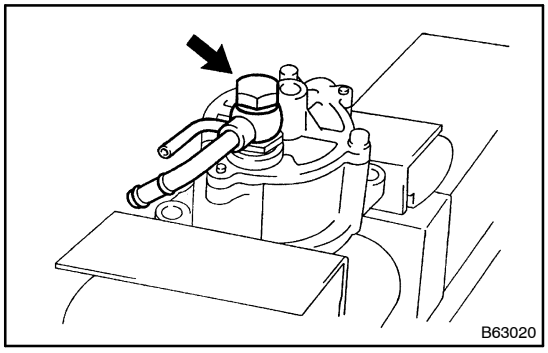
NOTICE:

Do not tighten the vise.

(b) Install 2 new O–rings.
(c) Install the end cover in place and temporarily install the 3 bolts.
(d) Using a pin punch and hammer, tap in the 2 straight pins.
(e) Tighten the 3 bolts.
Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)

19. INSTALL CHECK VALVE

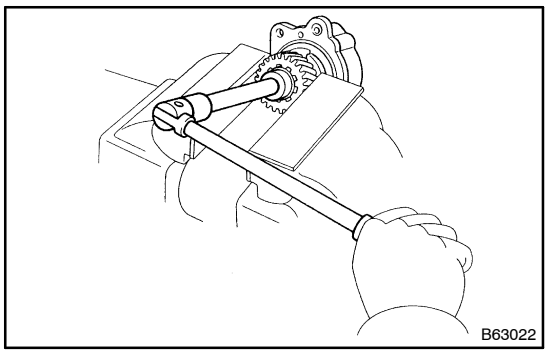
(a) Install the check valve with a new gasket.
Torque: 74 N·m (750 kgf·cm, 54 ft·lbf)



20. INSTALL VACUUM PUMP UNION

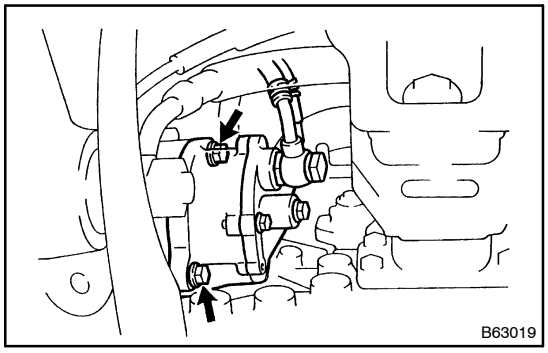
(a) Install the vacuum hose union with 2 new gaskets, and install and torque the union bolt.
Torque: 14 N·m (140 kgf·cm, 10 ft·lbf)

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



21. INSTALL VACUUM PUMP GEAR

(a) Temporarily install the woodruff key, gear and lock nut to the pump.
(b) Using soft jaws on a vise, mount the gear in the vise.
(c) Tighten the gear lock nut.



22. INSTALL VACUUM PUMP ASSY

(a) Install the 2 O–rings.

(b) Install the vacuum pump with the 2 bolts.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

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