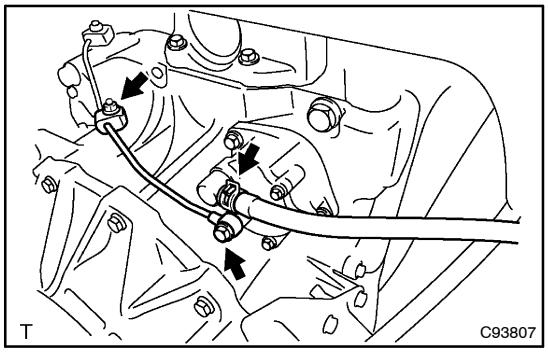
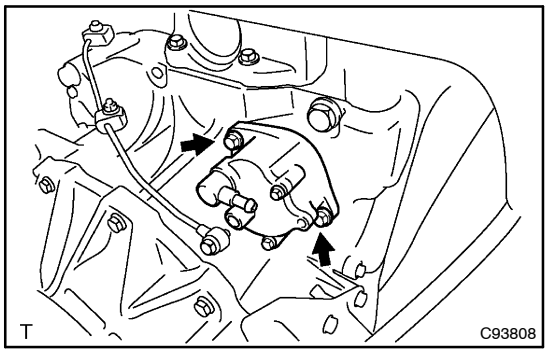
320U2–01

# OVERHAUL

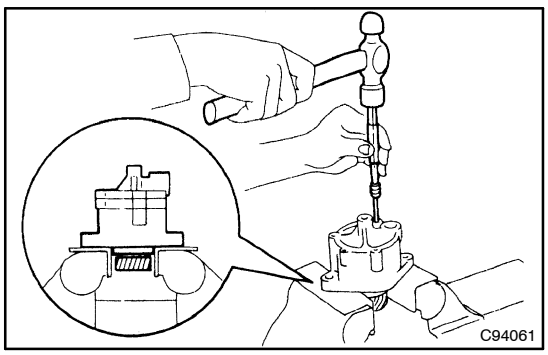



**1. REMOVE VACUUM PUMP ASSY**

(a) Remove the clip and disconnect the vacuum hose.
(b) Remove the bolt and clip for tube.
(c) Remove the union bolt and gasket, and disconnect the union tube.




(d) Remove the 2 bolts and pump from the engine.
(e) Remove the O–ring.



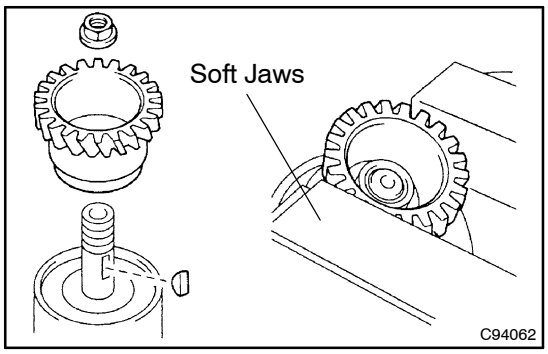

**2. REMOVE END COVER**

(a) Place the vacuum pump on a vise.
(b) Remove the 3 bolts.
(c) Using a pin punch and hammer, tap out the 2 straight pins.
(d) Remove the end cover and O–ring.

**NOTICE:**
**Do not tighten the vise.**

**3. REMOVE VACUUM PUMP ROTOR SUB–ASSY**

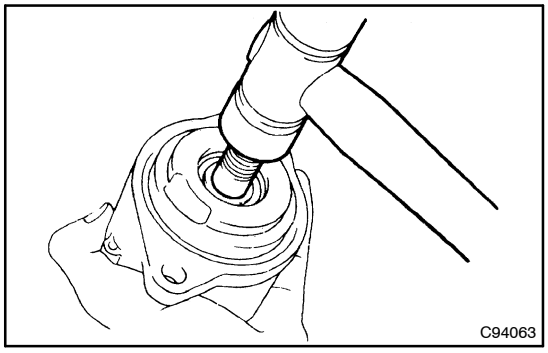
**4. REMOVE VACUUM PUMP BLADE A**




**5. REMOVE VACUUM PUMP GEAR**

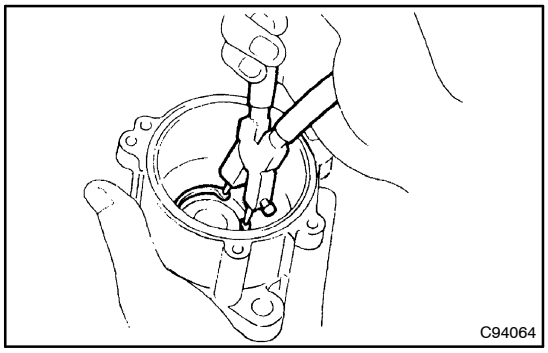
(a) Using soft jaws on a vise, clamp the gear in the vise
(b) Remove the gear lock nut.
(c) Remove the gear and key.

**NOTICE:**
**Do not tighten the vise.**

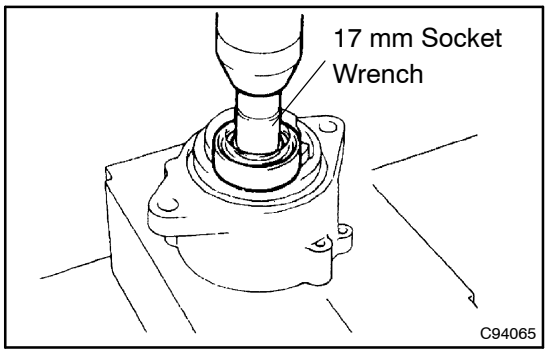



**6. REMOVE VACUUM PUMP SHAFT**

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

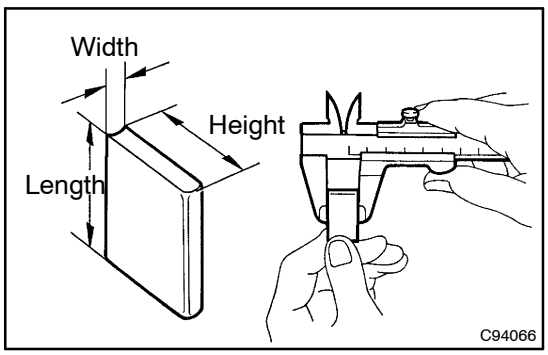



(b) Using snap ring pliers, remove the snap ring.




**7. REMOVE BALL BEARING**

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




**8. INSPECT VACUUM PUMP BLADE A**

(a) Check the blades for wear or damage.

(b) Using a vernier calipers, measure the dimensions of the blades.

**Minimum dimension:**

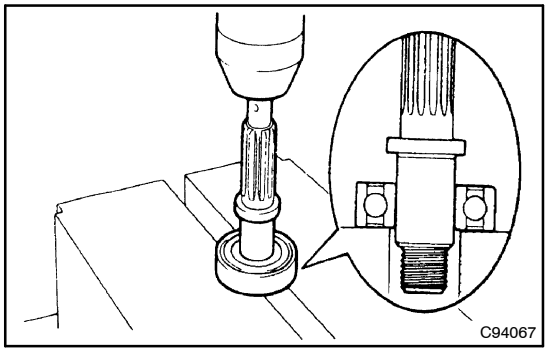
| | |
|---|---|
| Minimum Height | 16.50 mm (0.6496 in.) |
| Minimum Width | 5.95 mm (0.2343 in.) |
| Minimum Length | 44.96 mm (1.7701 in.) |

If necessary, replace the blade.

**9. INSPECT VACUUM PUMP CASE**

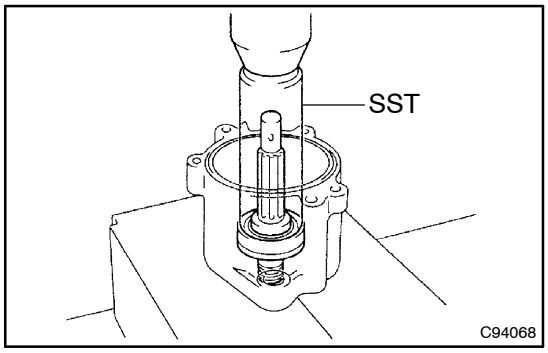
(a) Inspect the inside surface on the case for scoring.

If necessary, replace the vacuum pump assembly.



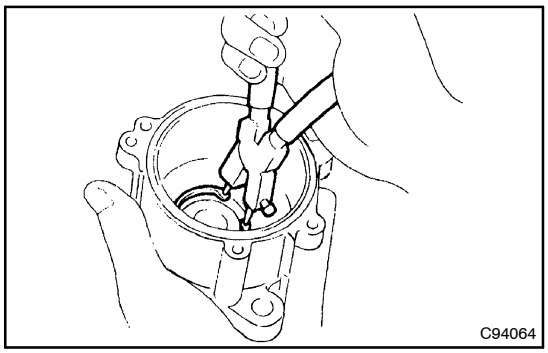

**10. INSTALL BALL BEARING**

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

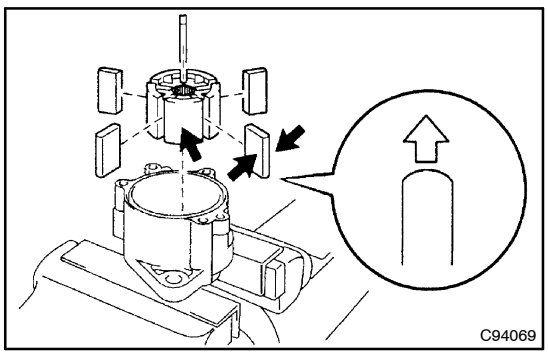



**11. INSTALL VACUUM PUMP SHAFT**

(a) Using SST and a press, press in the pump shaft to the case.
SST 09608–04031




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

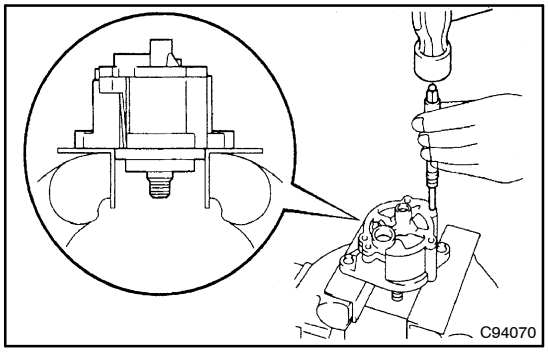



**12. INSTALL VACUUM PUMP ROTOR SUB–ASSY**

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

**13. INSTALL VACUUM PUMP BLADE A**

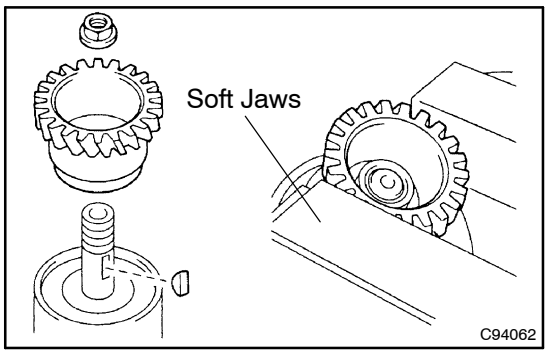
(a) Apply engine oil to the blades.
(b) Install the 5 blades with the round end facing outward.
(c) Make sure that the blades and rotor surface are even.




**14. INSTALL END COVER**

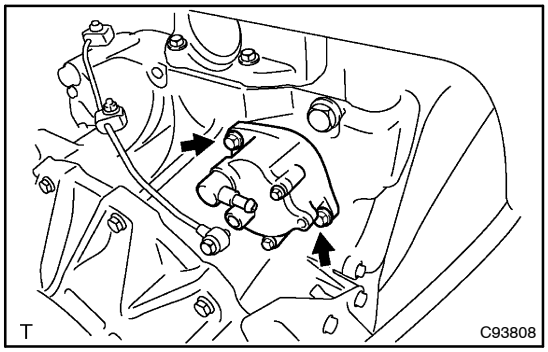
(a) Place the vacuum pump on a vise.
(b) Install a new O–ring.
(c) Install the end cover in place, and temporarily install the 3 bolts.
(d) Using a pin punch and hammer, tap in the 2 straight pins.
(e) Tighten the 3 bolts.
**Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)**

**NOTICE:**
**Do not tighten the vise.**



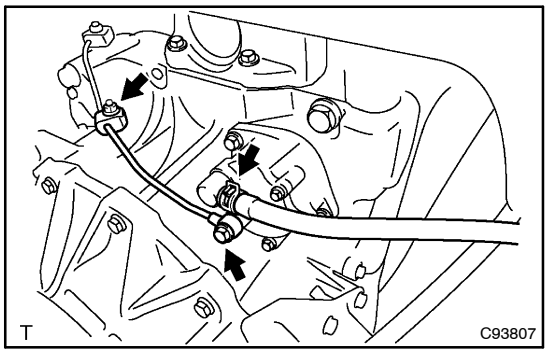

**15. INSTALL VACUUM PUMP GEAR**

(a) Temporarily install the key, gear and lock nut to the pump.
(b) Using soft jaws on a vise, clamp the gear in the vise.
(c) Tighten the gear lock nut.
**Torque: 110 N·m (1,125 kgf·cm, 81 ft·lbf)**




**16. INSTALL VACUUM PUMP ASSY**

(a) Install a new O–ring to the pump.
(b) Install the pump to the engine with the 2 bolts.
**Torque: 55 N·m (560 kgf·cm, 41 ft·lbf)**




(c) Install the union bolt and a new gasket, and then connect the union tube.
**Torque: 13.7 N·m (140 kgf·cm, 10 ft·lbf)**
(d) Install the bolt and clip to the tube.
(e) Install the clip and connect the vacuum hose.