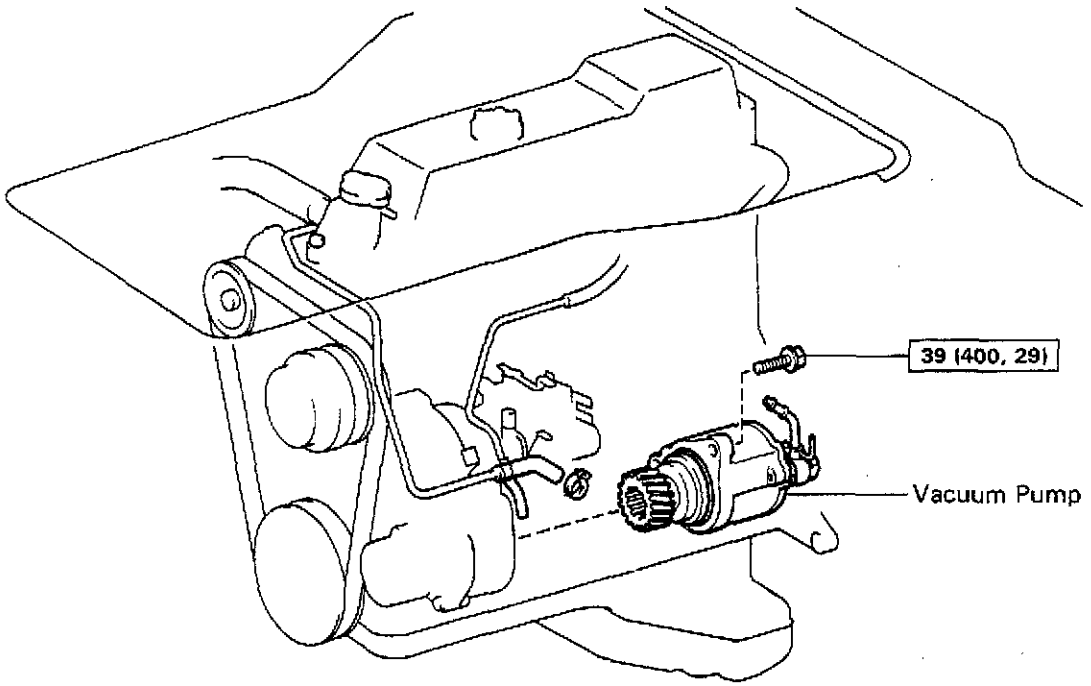
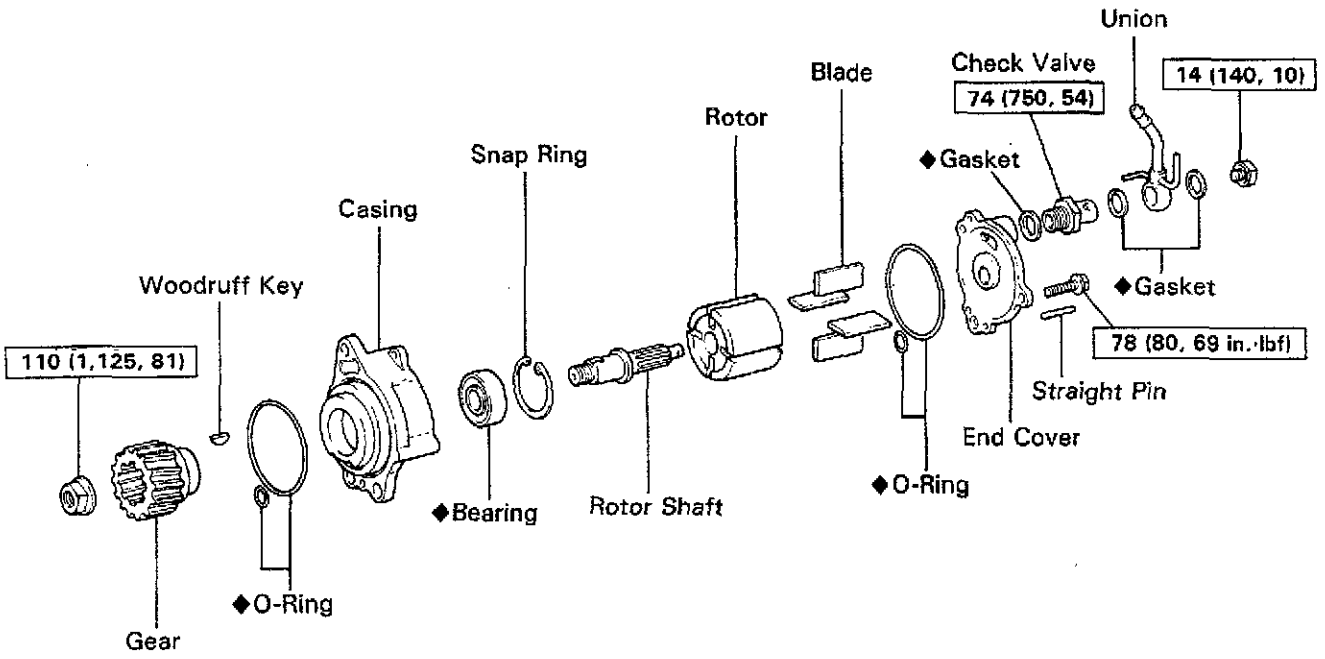
VACUUM PUMP (3B and 14B Engine)

COMPONENTS

BROKN-01



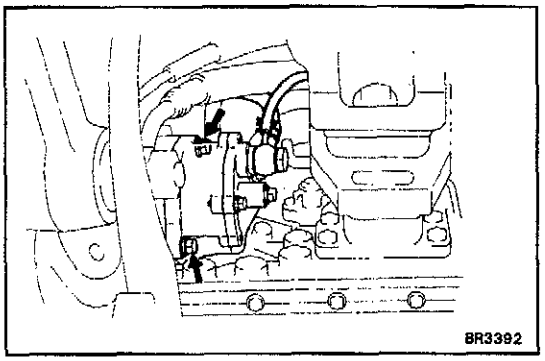


BR3389
BR3390

N·m (kgf·cm, ft·lbf) : Specified torque

◆ Non-reusable part

Z07292

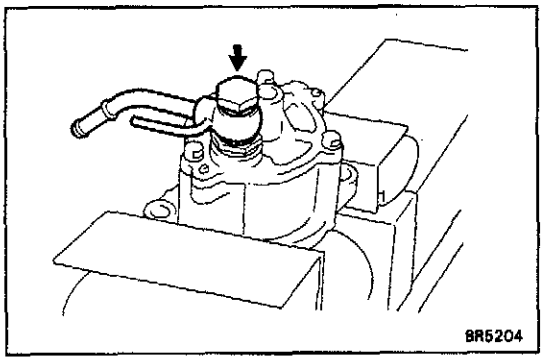

BR3392

BR0KP-01

VACUUM PUMP REMOVAL

1. **(Australia Models)**
   REMOVE REAR SIDE ENGINE UNDER COVER
   Remove the bolts and remove the under cover.
2. **REMOVE VACUUM PUMP**

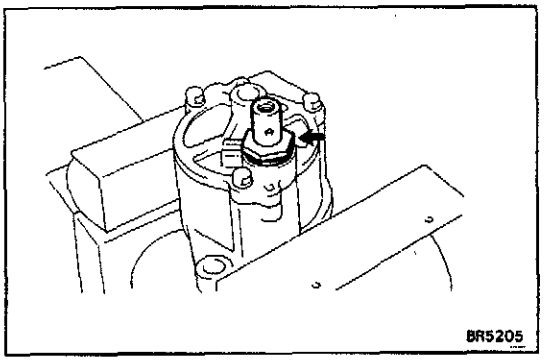
(a) Disconnect the vacuum hoses from the vacuum pump.
(b) Remove the 2 bolts and pump from the engine.
(c) Remove the 2 O–rings.


BR5204

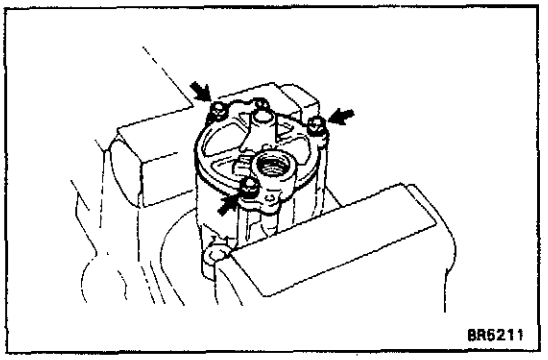
BR0KQ-01

VACUUM PUMP DISASSEMBLY

1. **REMOVE VACUUM HOSE UNION**
   Remove the union bolt, union and 2 gaskets.
   NOTICE: Do not tighten the vise too tightly.

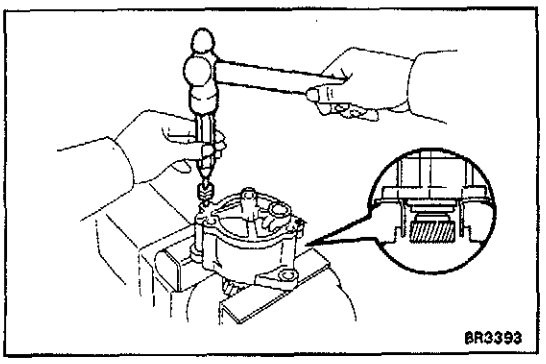

BR5205

2. **REMOVE CHECK VALVE**
   Remove the check valve and gasket.

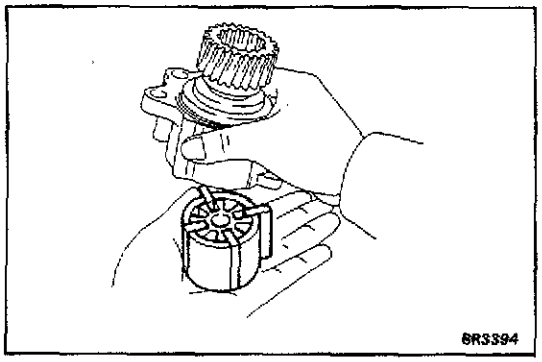

BR5211

3. **REMOVE END COVER**

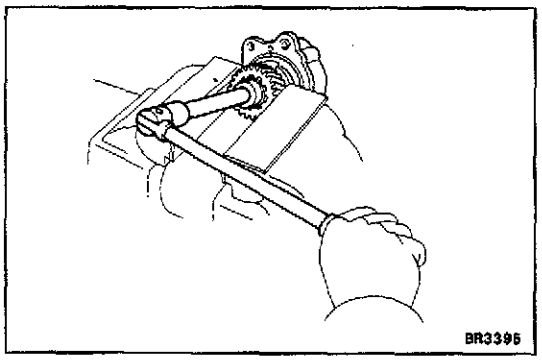
(a) Remove the 3 bolts.


BR3393

(b) Place the vacuum pump on vise, as shown in the illustration.
NOTICE: Do not tighten the vice.
(c) Using a pin punch and hammer, drive out the 2 straight pins.
(d) Remove the end cover and 2 O–rings.

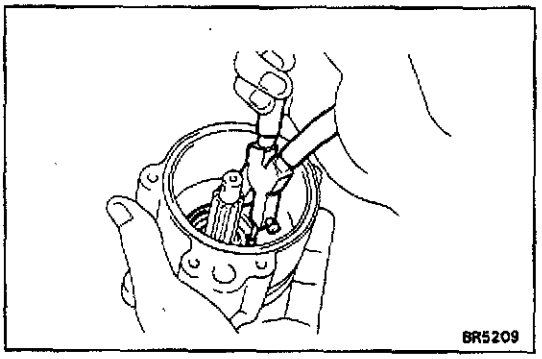


4. REMOVE ROTOR AND 4 BLADES



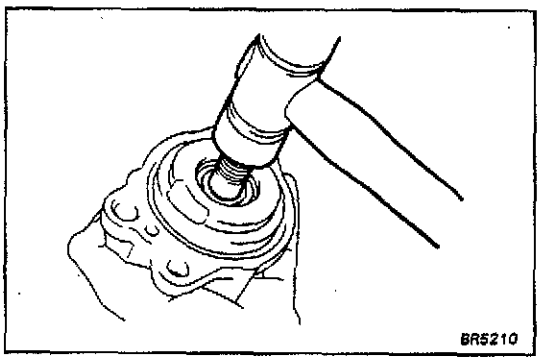
5. REMOVE GEAR

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



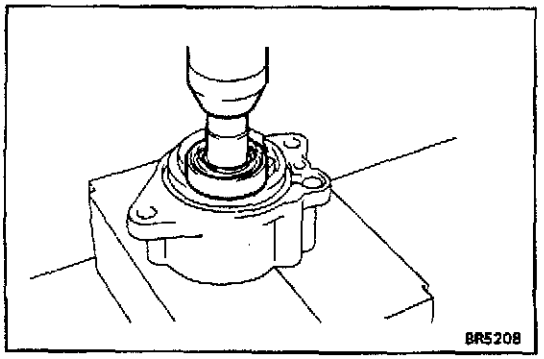
6. REMOVE SNAP RING

Using snap ring pliers, remove the snap ring.



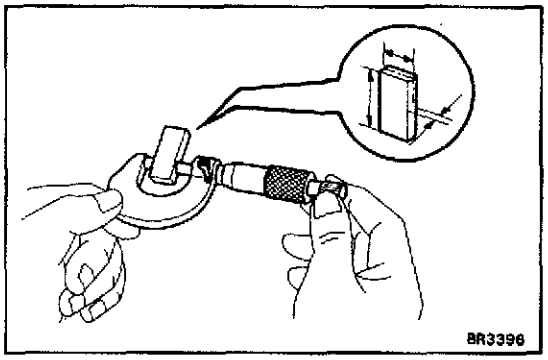
7. REMOVE ROTOR SHAFT

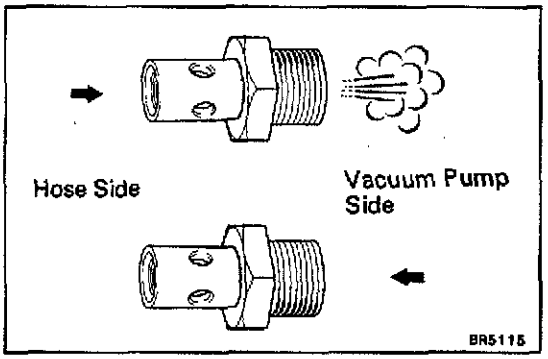
Using a plastic hammer, tap out the rotor shaft.

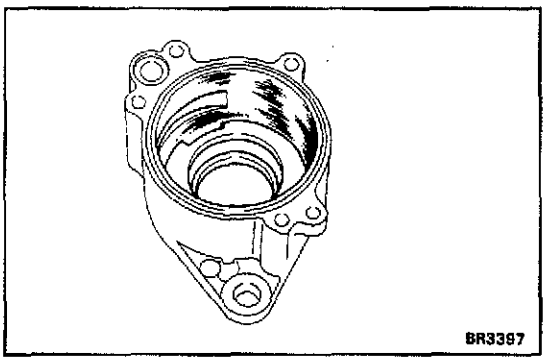


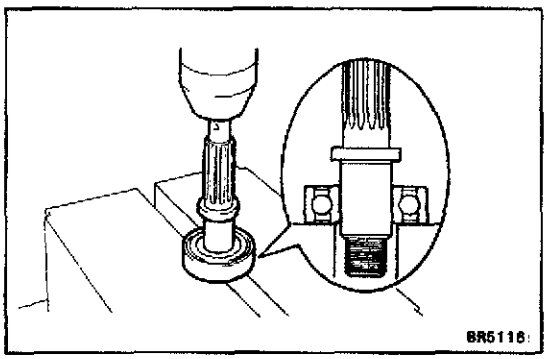
8. REMOVE BEARING

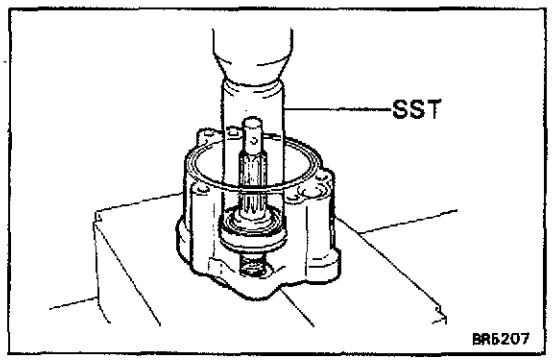
Using a press and 17 mm socket, press out the bearing.











VACUUM PUMP INSPECTION

1. INSPECT BLADE

(a) Check the blades for wear or damage.

(b) Using a micrometer, measure the height, width and length of the blades.

Minimum height:

16.50 mm (0.6496 in.)

Minimum width:

4.95 mm (0.1949 in.)

Minimum length:

44.96 mm (1.7701 in.)

If necessary, replace the blade.

2. INSPECT CHECK VALVE OPERATION

(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.

3. INSPECT INSIDE SURFACE OF CASING

Inspect the inside surface on the casing for scoring.

If necessary, replace the vacuum pump assembly.

VACUUM PUMP ASSEMBLY

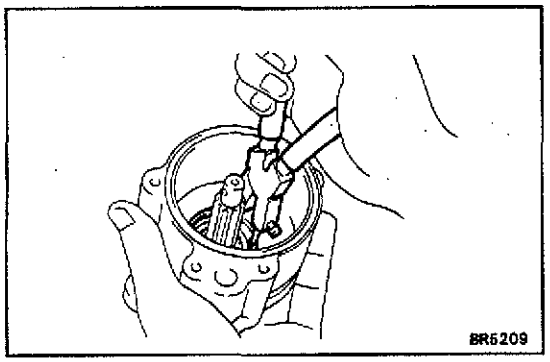
1. INSTALL BEARING TO ROTOR SHAFT

Using a press, install a new bearing to the rotor shaft.

2. INSTALL ROTOR SHAFT

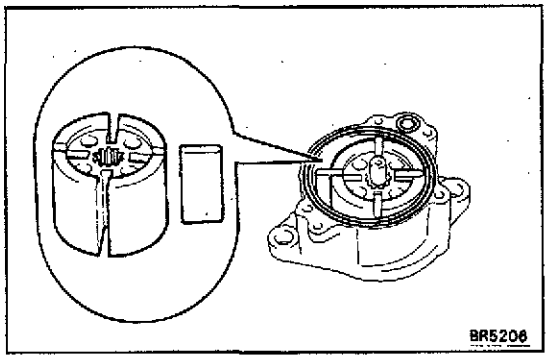
Using SST and a press, install the rotor shaft to the casing.

09608–30012 (09608–04030)



3. INSTALL SNAP RING

Using snap ring pliers, install the snap ring.



4. INSTALL ROTOR INTO CASING

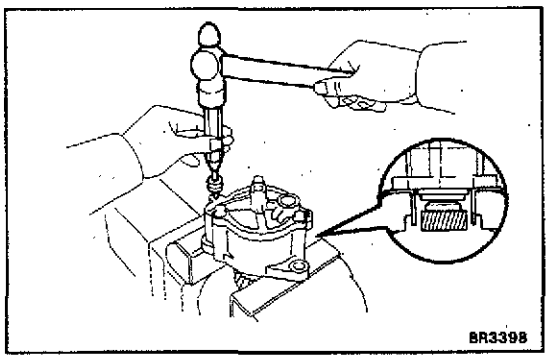
Apply engine oil to the rotor and install it to the rotor shaft.

5. INSTALL 4 BLADES

(a) Apply engine oil to the blades.

(b) Install the 4 blades with the round end facing outward.

(c) Be sure that the blades and rotor surfaces are even.



6. INSTALL END COVER

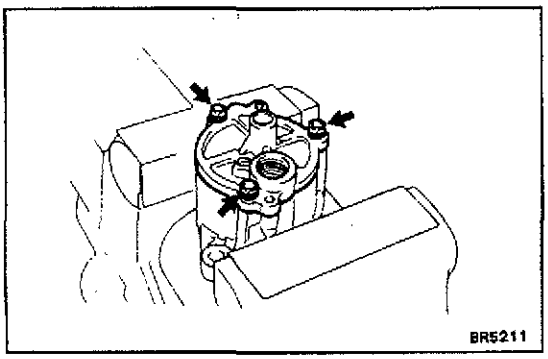
(a) Place the vacuum pump on vise, as shown in the illustration.

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, drive in the 2 straight pins.

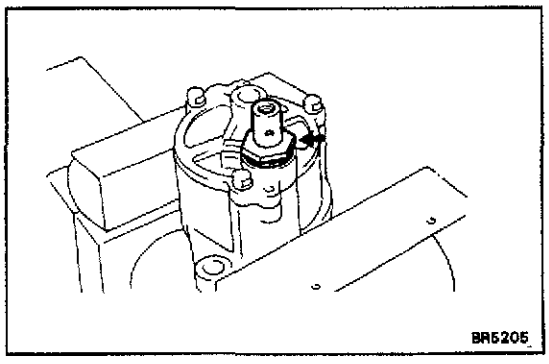


(e) Using soft jaws on the vise, place the vacuum pump in the vise.

NOTICE: Do not tighten the vise too tightly.

(f) Tighten the 3 bolts.

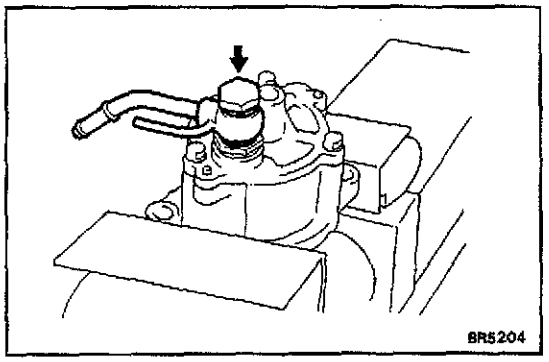
Torque: 7.8 N·m (80 kgf·cm, 69 in.·lbf)



7. INSTALL CHECK VALVE

Install the check valve with a new gasket.

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

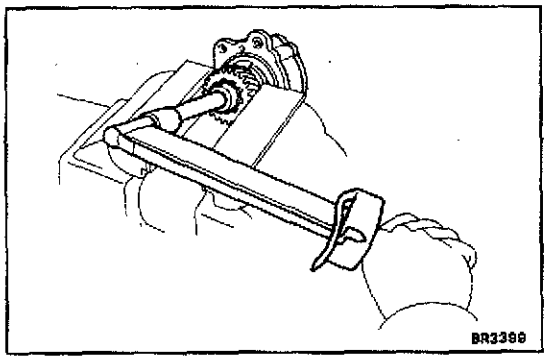


8. INSTALL VACUUM HOSE UNION

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.



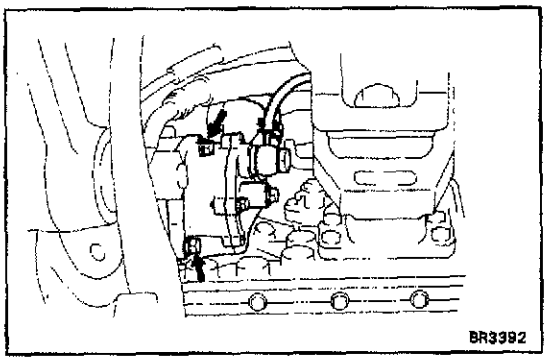
9. INSTALL GEAR

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

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

(c) Tighten the gear lock nut.

Torque: 110 N·m (1,125 kgf·cm, 81 ft·lbf)



VACUUM PUMP INSTALLATION

1. INSTALL VACUUM PUMP

(a) Install 2 new O–rings to the vacuum pump.

(b) Install the vacuum pump in place, then install and tighten the 2 bolts.

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

(c) Connect the vacuum hoses and install the clamp.

2. (Australia Models)

INSTALL REAR SIDE ENGINE UNDER COVER

Install the rear side engine under cover with the bolts.