

# Camshafts



## Installation

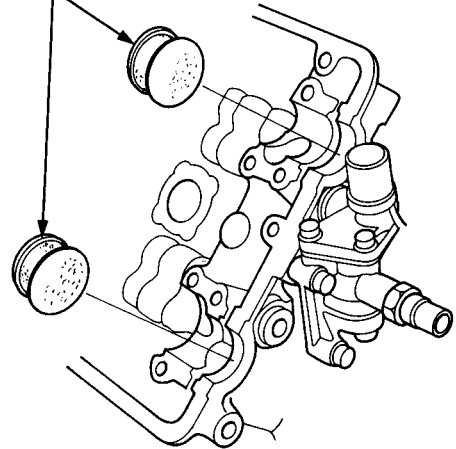
**CAUTION:** Valve locknuts should be loosened and adjusting screws backed off before installation.

1. After wiping down the camshaft and journals in the cylinder head, lubricate both surfaces and install the camshafts and rubber caps.

**NOTE:** Apply liquid gasket around the rubber cap.

### RUBBER CAPS

Replace for oil leakage.



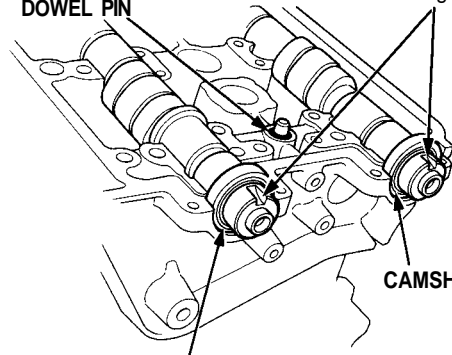
2. Turn the camshaft until its keyway is facing up. (No. 1 cylinder TDC).
3. Set a new O-ring and a dowel pin in the oil passage of the No. 1 camshaft holder.
4. Install the camshaft seals with the open side (spring) facing in.



Lubricate cam lobes after reassembly.

**O-RING  
(Replace)  
and  
DOWEL PIN**

Keyways  
facing up.



**CAMSHAFT SEAL**

Seal housing surface should be dry.  
Apply a light coat of oil to camshaft  
and inner lip of seal.

(cont'd)

# Camshafts

## Installation (cont'd)

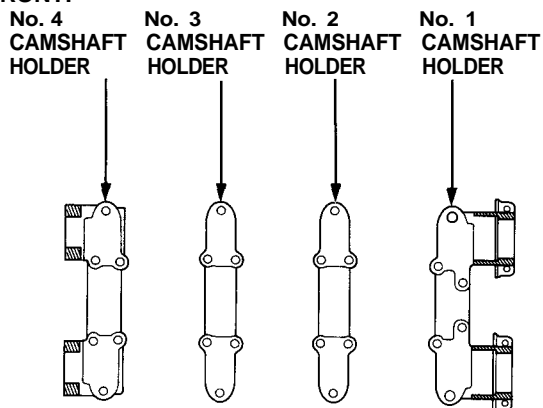
5. Apply liquid gasket to the head mating surfaces of the No. 1 and the No. 4 camshaft holders.
5. Apply liquid gasket to the shaded areas.

6. Install the camshaft holders.

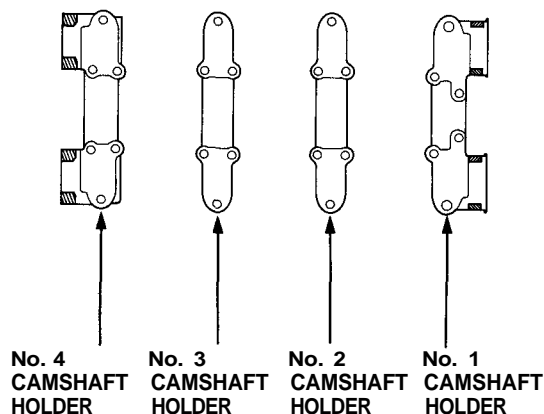
### NOTE:

- "F" or "R" marks are stamped on the camshaft holders.
- The arrows must be pointing to the timing belt side.
- Set two dowel pins in each camshaft holder.

### FRONT:



### REAR:



7. Install the camshaft holder plates.
8. Tighten each bolt two turns at a time in the sequence shown below to insure that the rockers do not bind on the valves.

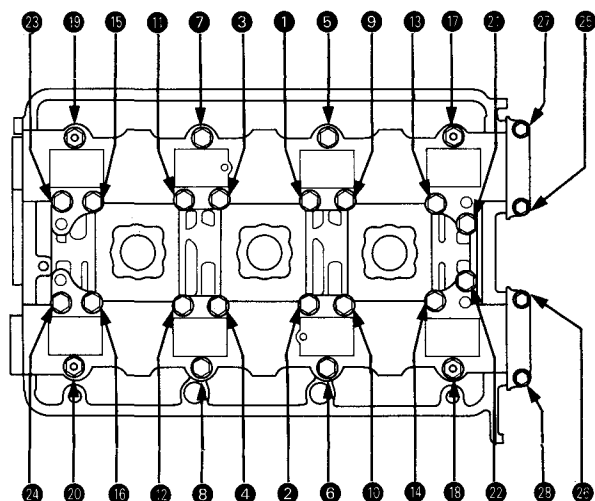
NOTE: Apply clean engine oil to 8 mm bolt threads.

### Specified torque:

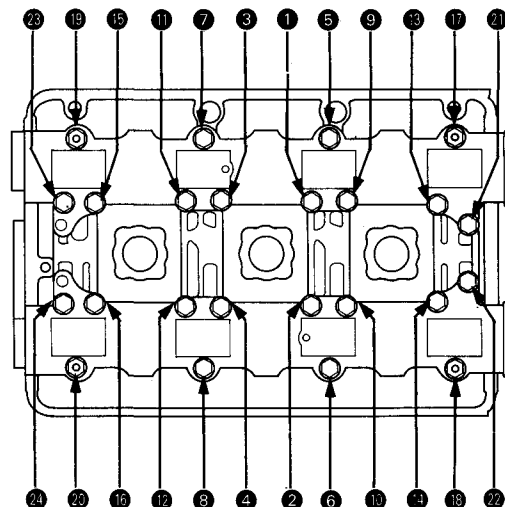
- ① - ②④ 8 mm x 1.25 mm bolts:  
22 N-m (2.2 kgf-m, 16 lbf-ft)
- ②⑤ - ②⑧ 6 mm x 1.0 mm bolts:  
9.8 N-m (1.0 kgf-m, 7.2 lbf-ft)

### CAMSHAFT HOLDER BOLT TORQUE SEQUENCE

#### FRONT:

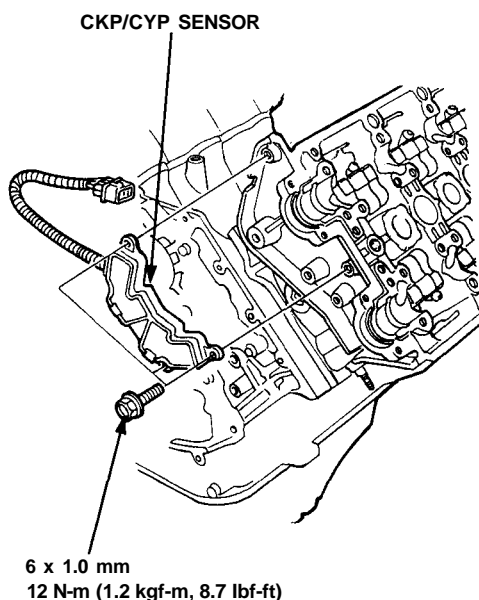


#### REAR:

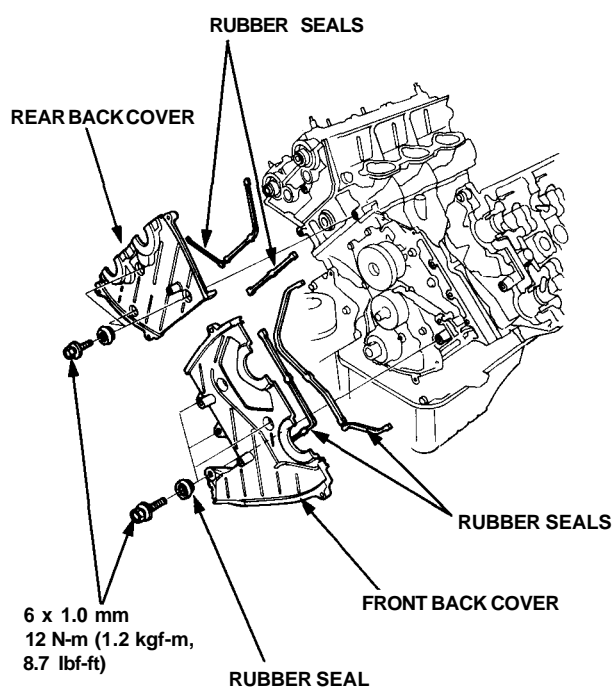




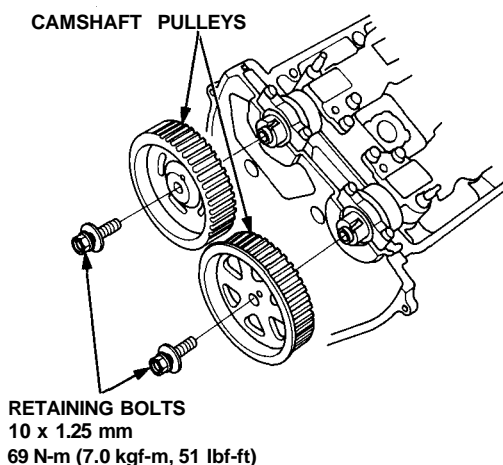
9. Install the CKP/CYP sensor on the front cylinder head.



10. Install the front and rear back covers.



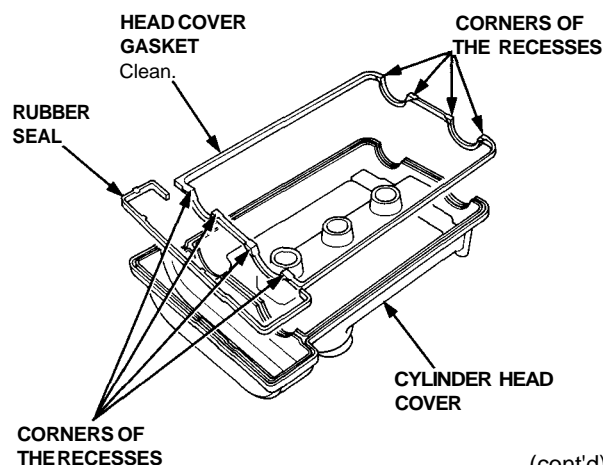
11. Insert the dowel pins in the camshaft pulley.
12. Install the camshaft pulleys, then tighten the retaining bolts to the torque specified.



13. Install the timing belt (see page 6-18).
14. Adjust the valve clearance (see page 6-9).
15. Inspect the rocker arms (see pages 6-7, 6-8).
16. Install the head cover gasket in the groove of the cylinder head cover. Seat the recesses for the camshaft first, then work it into the groove around the outside edges.

**NOTE:**

- Before installing the head cover gasket, thoroughly clean the seal and the groove.
- When installing, make sure the head cover gasket is seated securely in the corners of the recesses with no gap.



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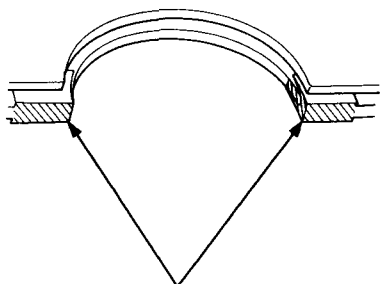
# Camshafts

## Installation (cont'd)

17. Apply liquid gasket to the head cover gasket at the eight corners of the recesses.

**NOTE:**

- Use liquid gasket, Part No. 08718 - 0001 or 08718 - 0003.
- Check that the mating surfaces are clean and dry before applying liquid gasket.
- Do not install the parts if five minutes or more have elapsed since applying liquid gasket. Instead, reapply liquid gasket after removing old residue.
- After assembly, wait at least 20 minutes before filling the engine with oil.



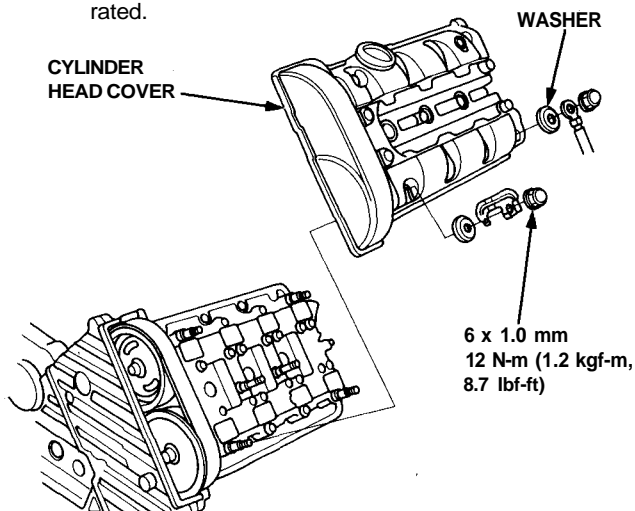
Apply liquid gasket to the shaded areas.

18. When installing the cylinder head cover, hold the head cover gasket in the groove by placing your fingers on the camshaft contacting surfaces (top of the semicircles).

Once the cylinder head cover is on the camshaft holder, slide the cover slightly back and forth to seat the head cover gasket.

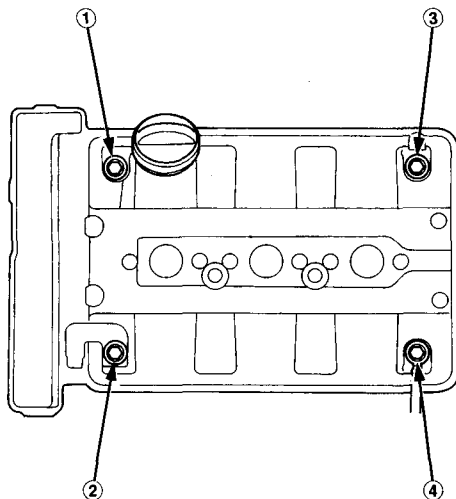
**NOTE:**

- Before installing the cylinder head cover, clean the cylinder head contacting surfaces with a shop towel.
- Do not touch the parts where liquid gasket was applied.
- Replace the washer when damaged or deteriorated.



19. Tighten the nuts in two or three steps. In the final step, tighten all nuts, in sequence, to 12 N-m (1.2 kgf-m, 8.7 lbf-ft).

**NOTE:** After assembly, wait at least 20 minutes before filling the engine with oil.



20. After installation, check that all tubes, hoses and connectors are installed correctly.

**NOTE:** After installation, fill the engine with oil up to the specified level, run the engine for more than three minutes, then check for oil leakage.