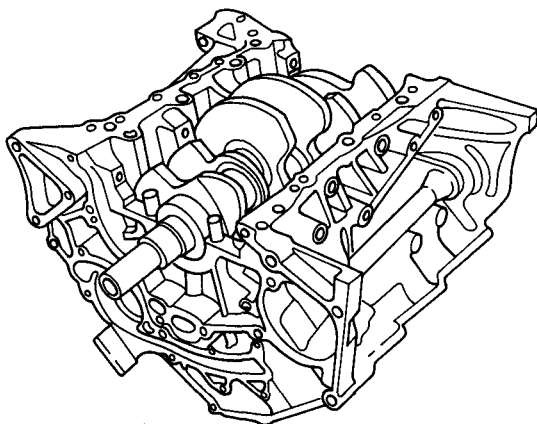


Crankshaft

Installation

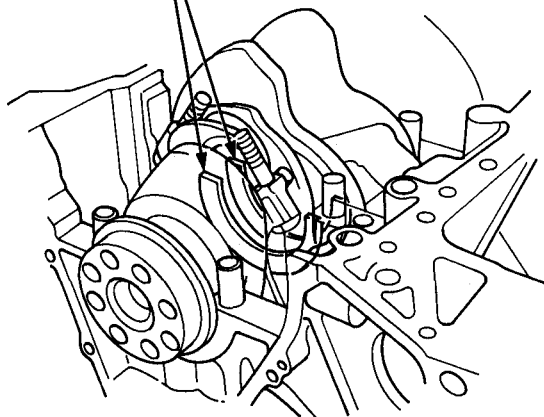
 Before installing the crankshaft, apply a coat of engine oil to the main bearings and rod bearings.

1. Insert the bearing halves in the cylinder block and connecting rods.
2. Lower the crankshaft into the block.

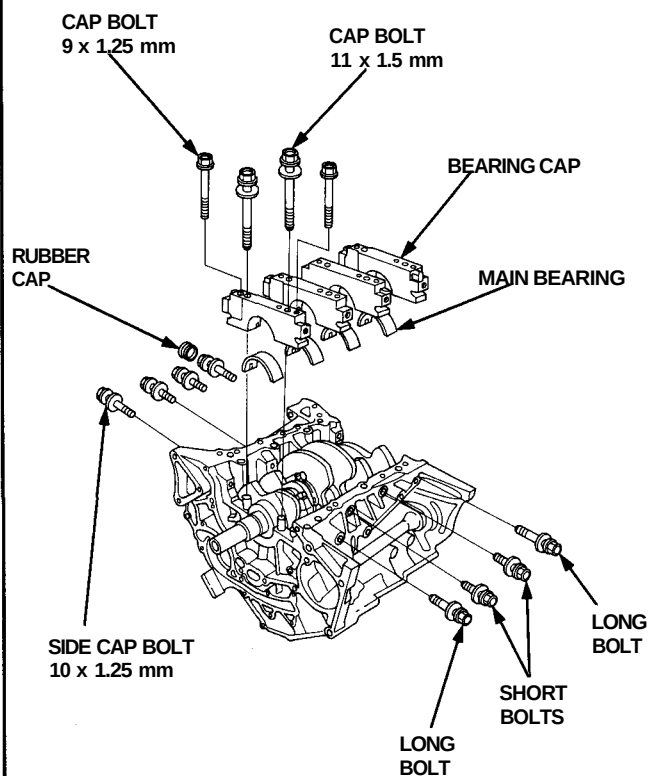
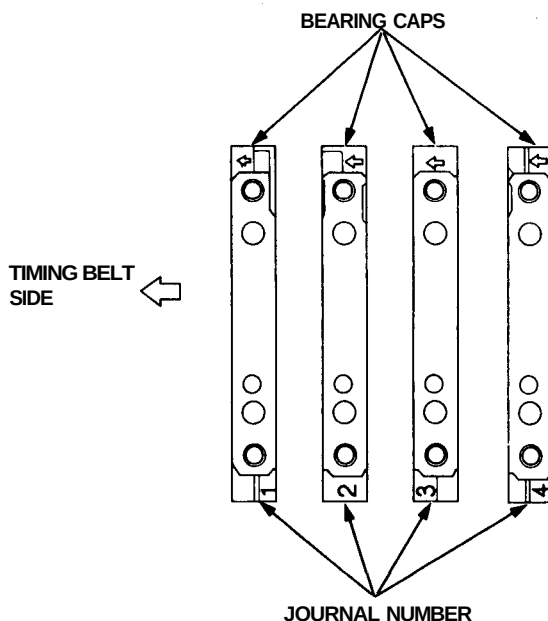


3. Install the thrust washers on the No. 3 journal. Oil the thrust washer surfaces.

THRUST WASHERS
Grooved sides face outward.



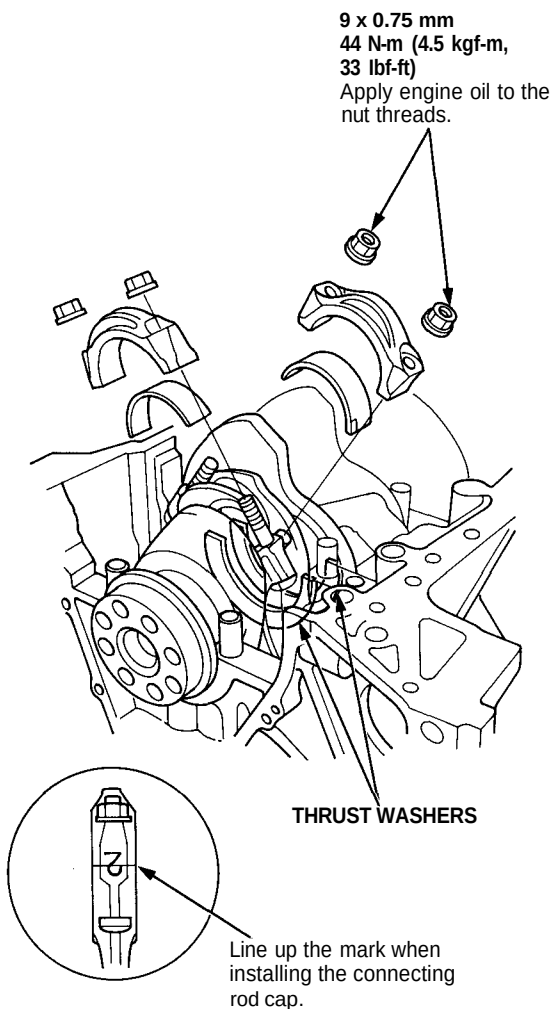
4. Install the bearings and caps. Tighten the cap bolts only enough to seat the bearing caps.





5. Install the piston/connecting rod assemblies (see page 7-23).
6. Check the connecting rod bearing clearance with plastigage (see page 7-9), then torque the connecting rod cap nuts.

NOTE: Reference numbers on the connecting rods are for big-end bore tolerance and do NOT indicate the position of the piston in the engine.



7. Tighten the 9 x 1.25 mm cap bolts to the specified torque.

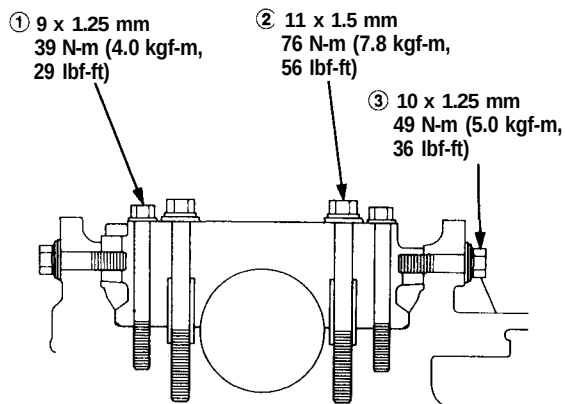
Torque: 39 N-m (4.0 kgf-m, 29 lbf-ft)
Apply engine oil to the bolt threads.

8. Tighten the 11 x 1.5 mm cap bolts to the specified torque.

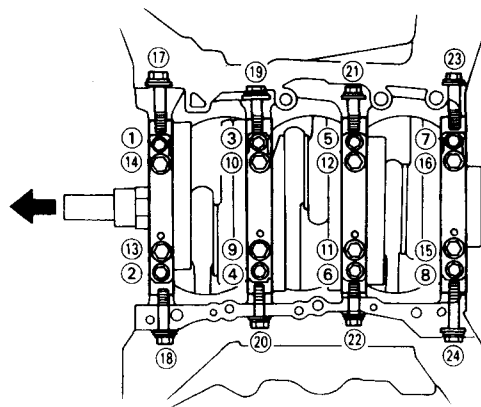
Torque: 76 N-m (7.8 kgf-m, 56 lbf-ft)
Apply engine oil to the bolt threads.

9. Tighten the 10 x 1.25 mm cap side bolts to the specified torque.

Torque: 49 N-m (5.0 kgf-m, 36 lbf-ft)



BEARING CAP BOLTS TORQUE SEQUENCE



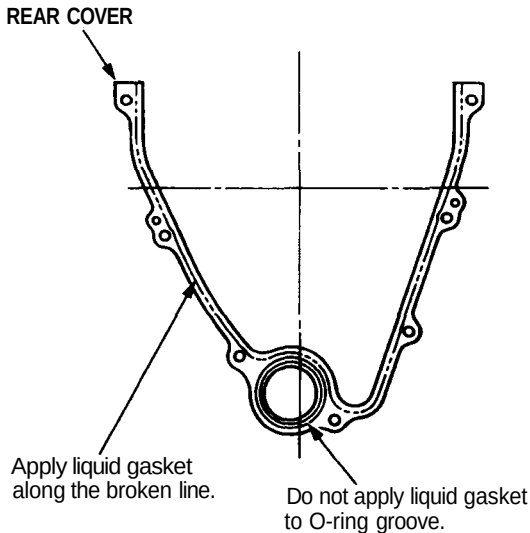
CAUTION: Whenever any crankshaft bearing or connecting rod bearing is replaced, it is necessary after reassembly to run the engine at idling speed until it reaches normal operating temperature, then continue to run it for approximately 15 minutes.

(cont'd)

Crankshaft

Installation (cont'd)

10. Apply liquid gasket to the cylinder block mating surface of the rear cover, then install the cover on the cylinder block.

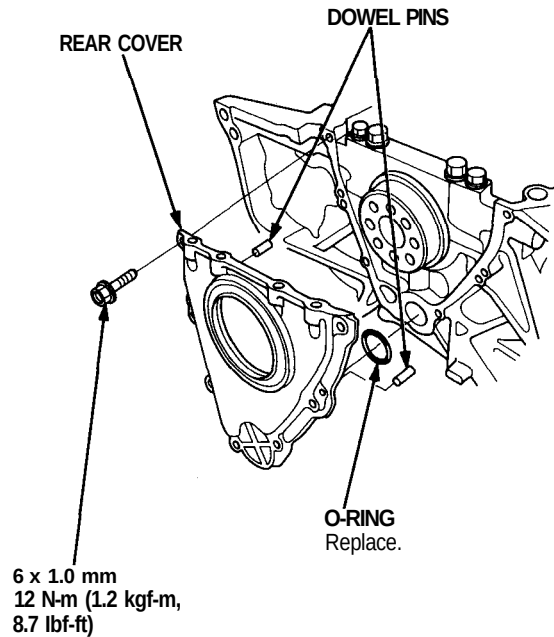


NOTE:

- Use liquid gasket, Part No. 08718 - 0001 or 08718 - 0003.
- Check that the mating surfaces are clean and dry before applying liquid gasket.
- Apply liquid gasket evenly, being careful to cover all the mating surface.
- To prevent oil leakage, apply liquid gasket to the inner threads of the bolt holes.
- Do not apply liquid gasket to O-ring grooves.
- 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 30 minutes before filling the engine with oil.

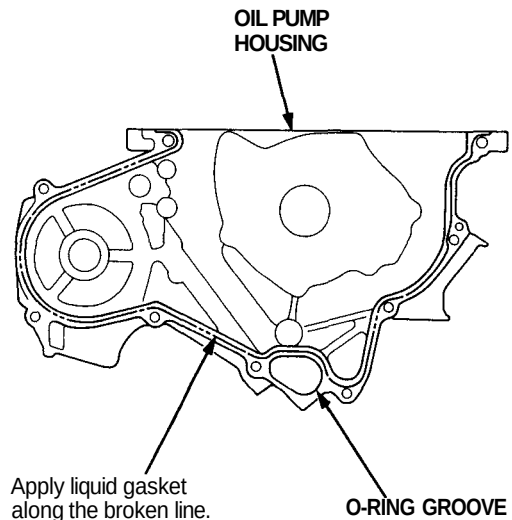
NOTE:

- Apply a light coat of oil to the crankshaft and to the lip of the oil seal.
- Use a new O-ring and apply oil when installing it.



11. Apply liquid gasket to the cylinder block mating surface of the oil pump.

NOTE: Do not apply liquid gasket to the O-ring grooves.

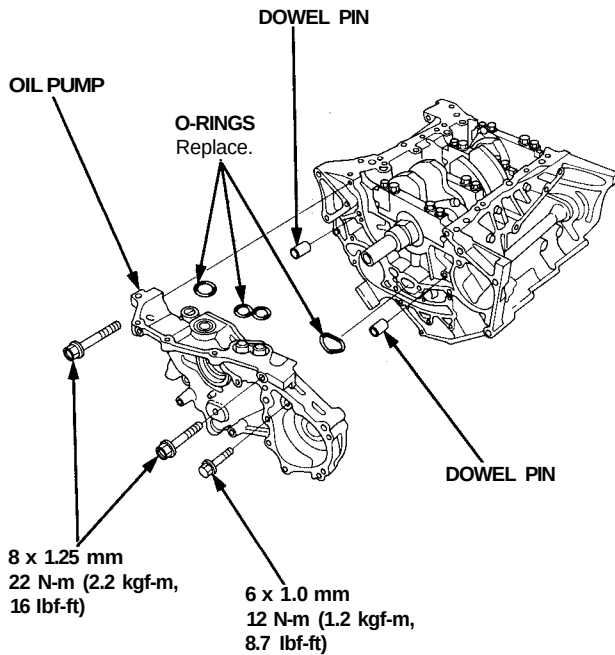




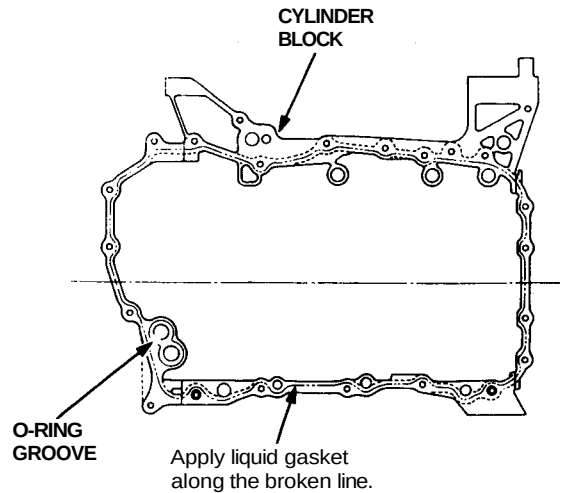
12. Install the oil pump with new O-rings.

NOTE:

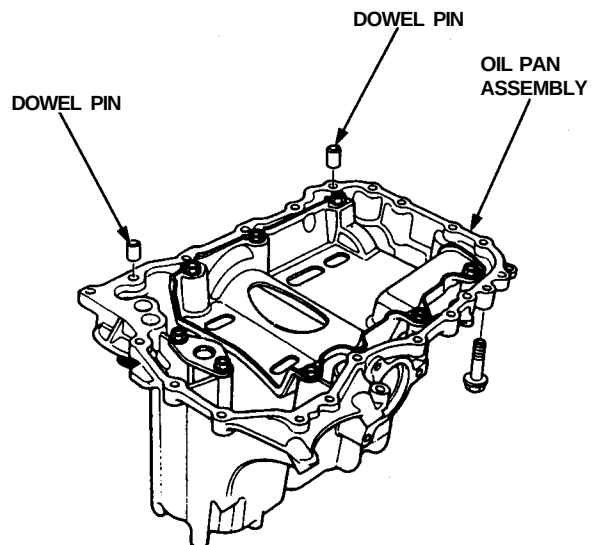
- Apply a light coat of oil to the crankshaft and to the lip of the seal.
- Use new O-rings and apply oil when installing them.



13. Apply liquid gasket to the cylinder block, then install the oil pan.



NOTE: Do not apply liquid gasket to the O-ring grooves.



(cont'd)

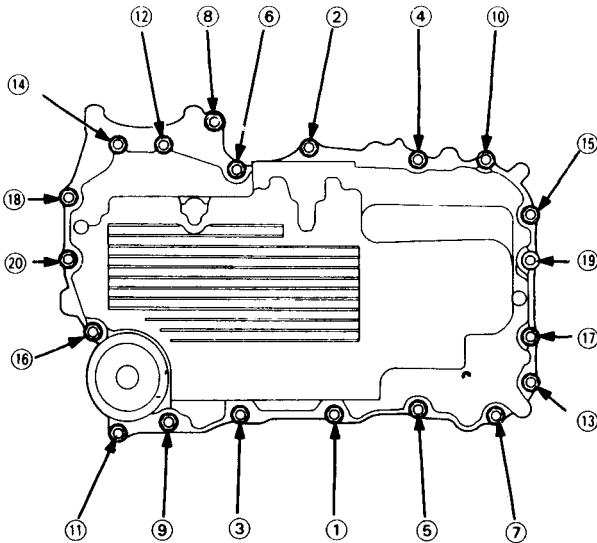
Crankshaft

Installation (cont'd)

14. Tighten the oil pan bolts as shown.

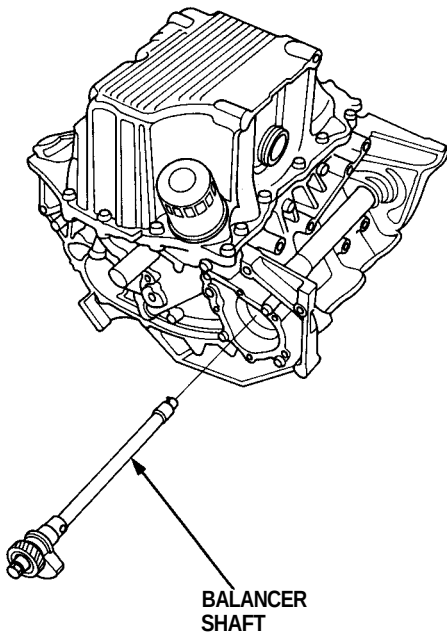
OIL PAN BOLT TIGHTENING SEQUENCE

8 x 1.25 mm: 22 N-m (2.2 kgf-m, 16 lbf-ft)

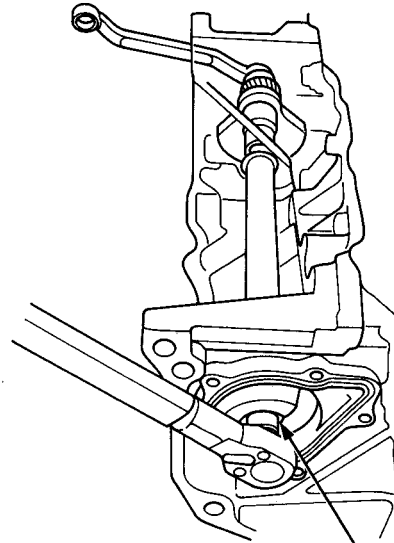


15. Apply engine oil to the balancer shaft, then insert the balancer shaft.

NOTE: Take care not to damage the journals when installing the balancer shaft.



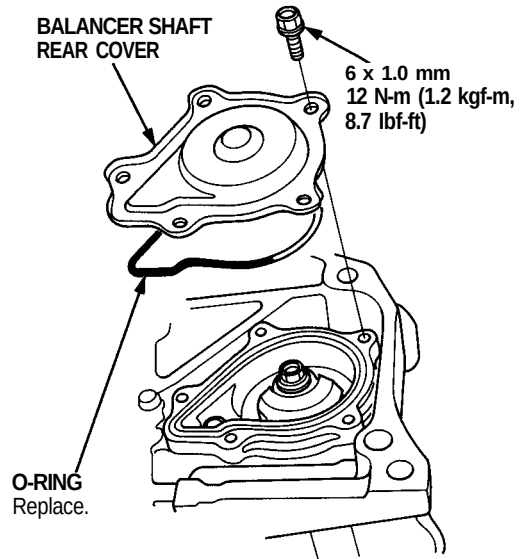
16. Install the balancer shaft holder (see page 7-3).
NOTE: Apply liquid gasket around the oil hole to the block mating surface.
17. Install the rear balancer weight.
18. Hold the balancer shaft as shown below, then tighten the bolt.



8 x 1.25 mm
25 N-m (2.5 kgf-m,
18 lbf-ft)

19. Install the balancer shaft rear cover.

BALANCER SHAFT REAR COVER

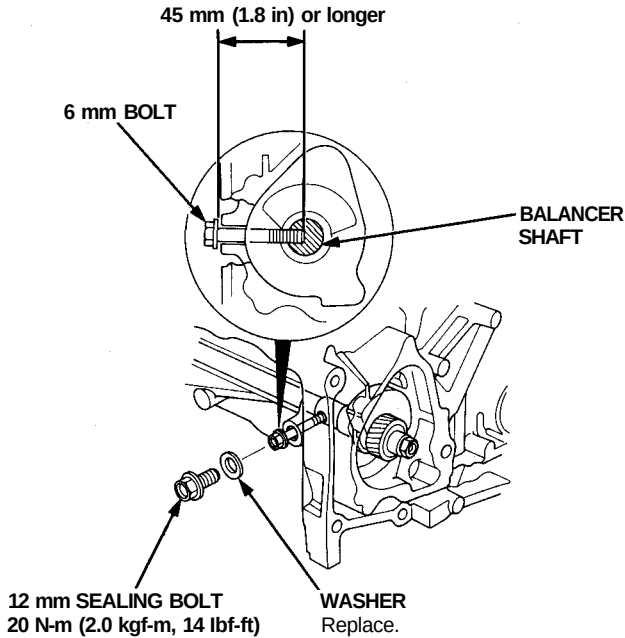


6 x 1.0 mm
12 N-m (1.2 kgf-m,
8.7 lbf-ft)

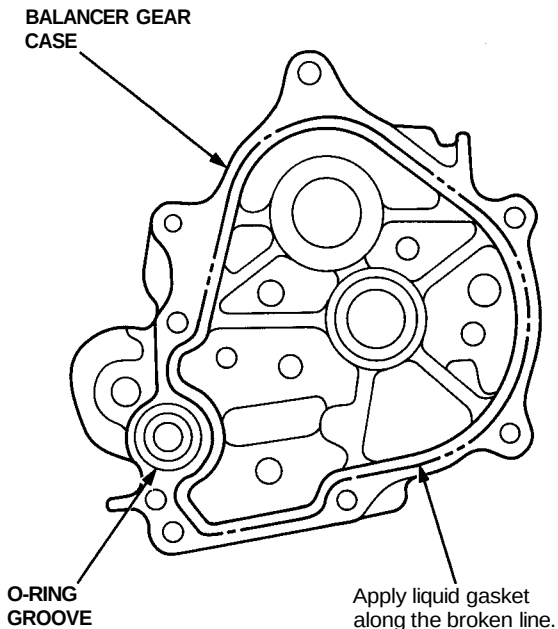
O-RING
Replace.



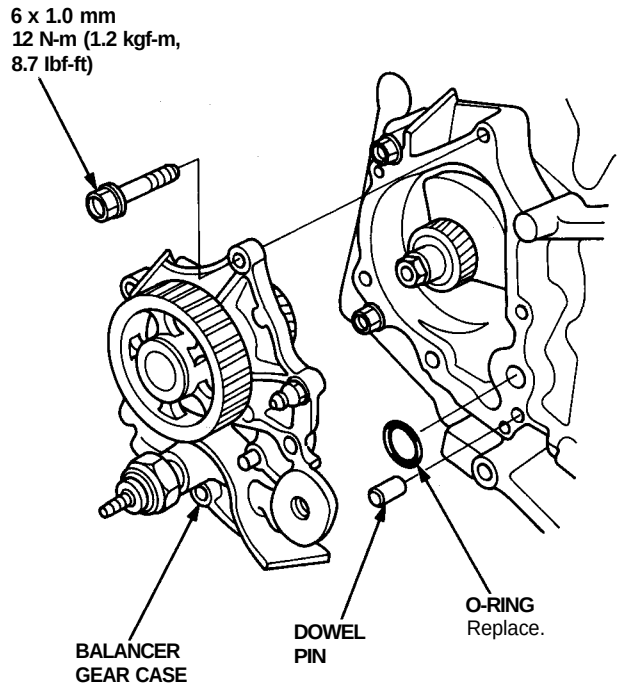
20. Align the maintenance hole and the balancer shaft hole. Insert a 6 mm bolt that is at least 45 mm (1.8 in) long into the balancer shaft.



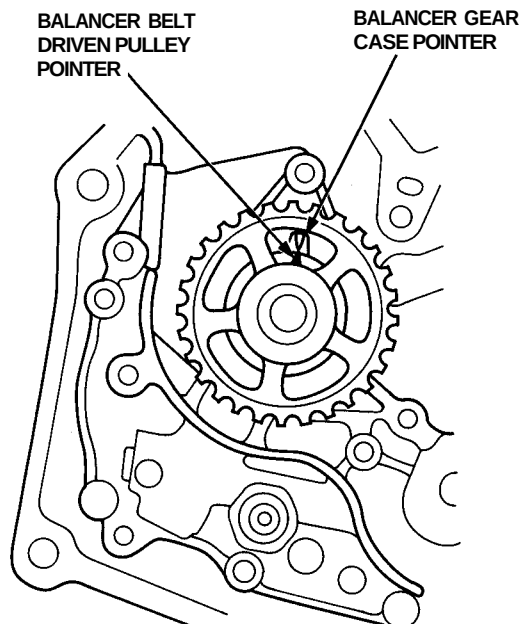
21. Apply liquid gasket to the oil pump mating surface of the balancer gear case.



22. Install the balancer gear case.



23. Check alignment of the pointers after installing the balancer gear case.



24. Remove the 6 mm bolt. Install the sealing bolt in the maintenance hole. Use a new washer.