



GX630 • GX660 • GX690 Engine Assembly Information

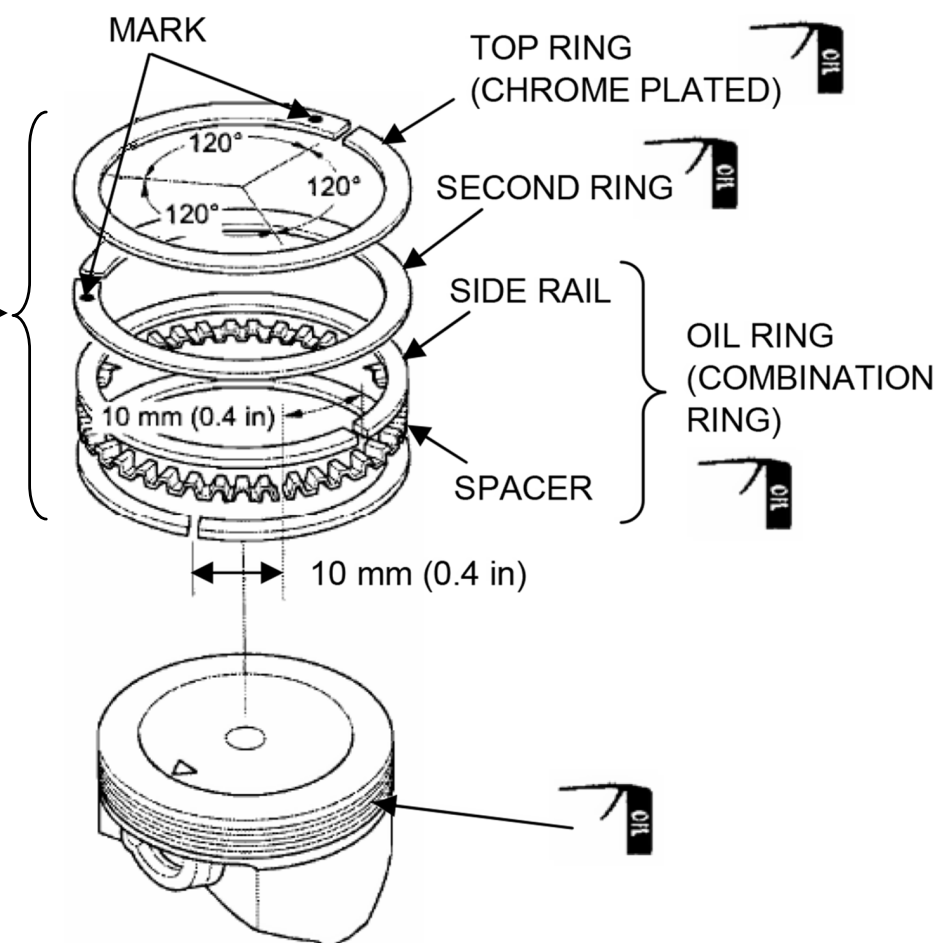
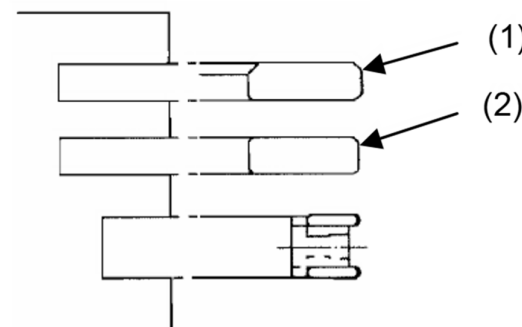
HONDA

PISTON

PISTON RING SET

ASSEMBLY:

The top ring (1) and second ring (2) are not interchangeable.
Install the top and second ring on the piston with the mark side facing up.
Check that the piston rings rotate smoothly after installing them.
Space the piston ring end gaps 120 degrees apart, and do not align the ring end gaps with the piston pin bore.



PISTON

INSTALLATION:

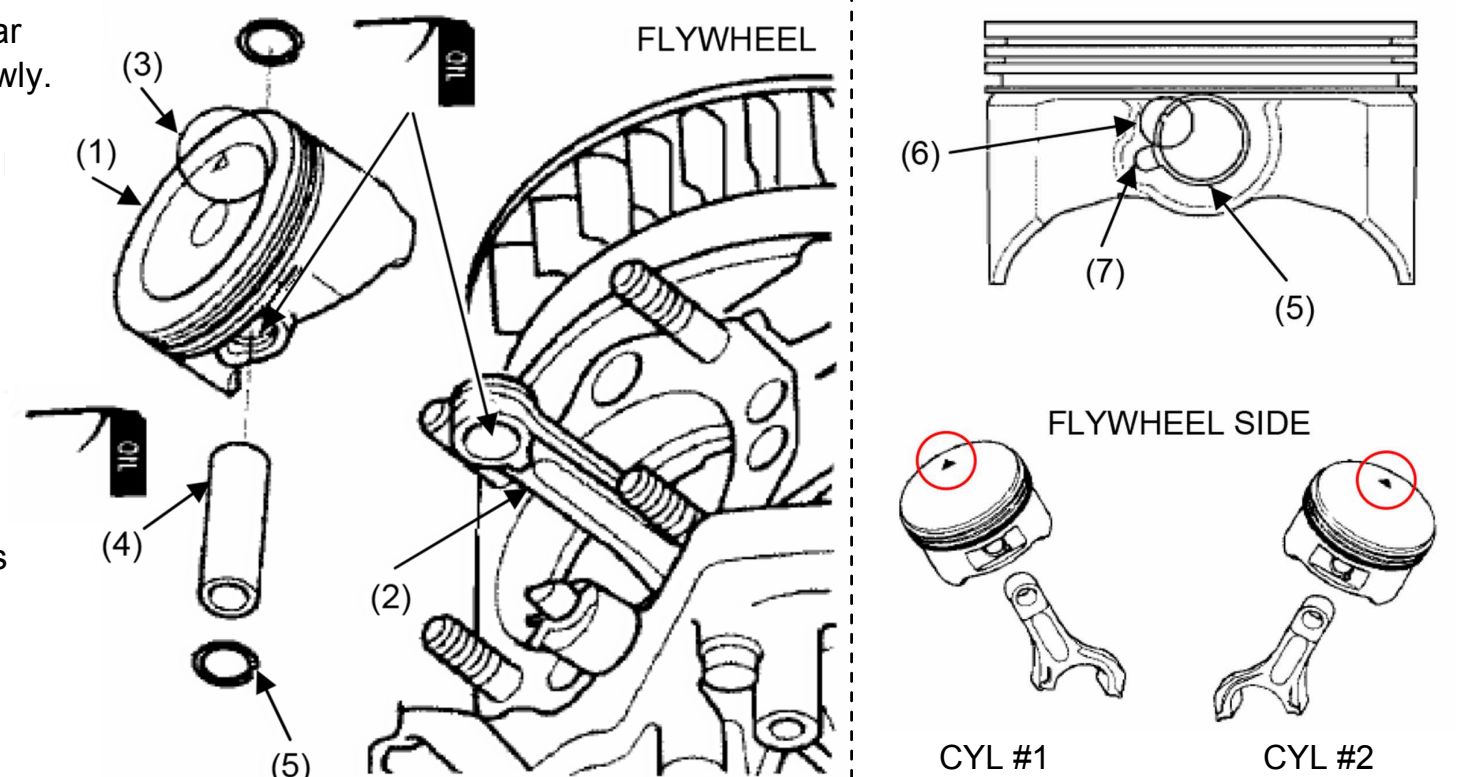
Position the connecting rod of the cylinder near top dead center by rotating the crankshaft slowly.

Install the piston (1) on the connecting rod (2) with triangle mark (3) of the piston pointing toward the flywheel side as shown.

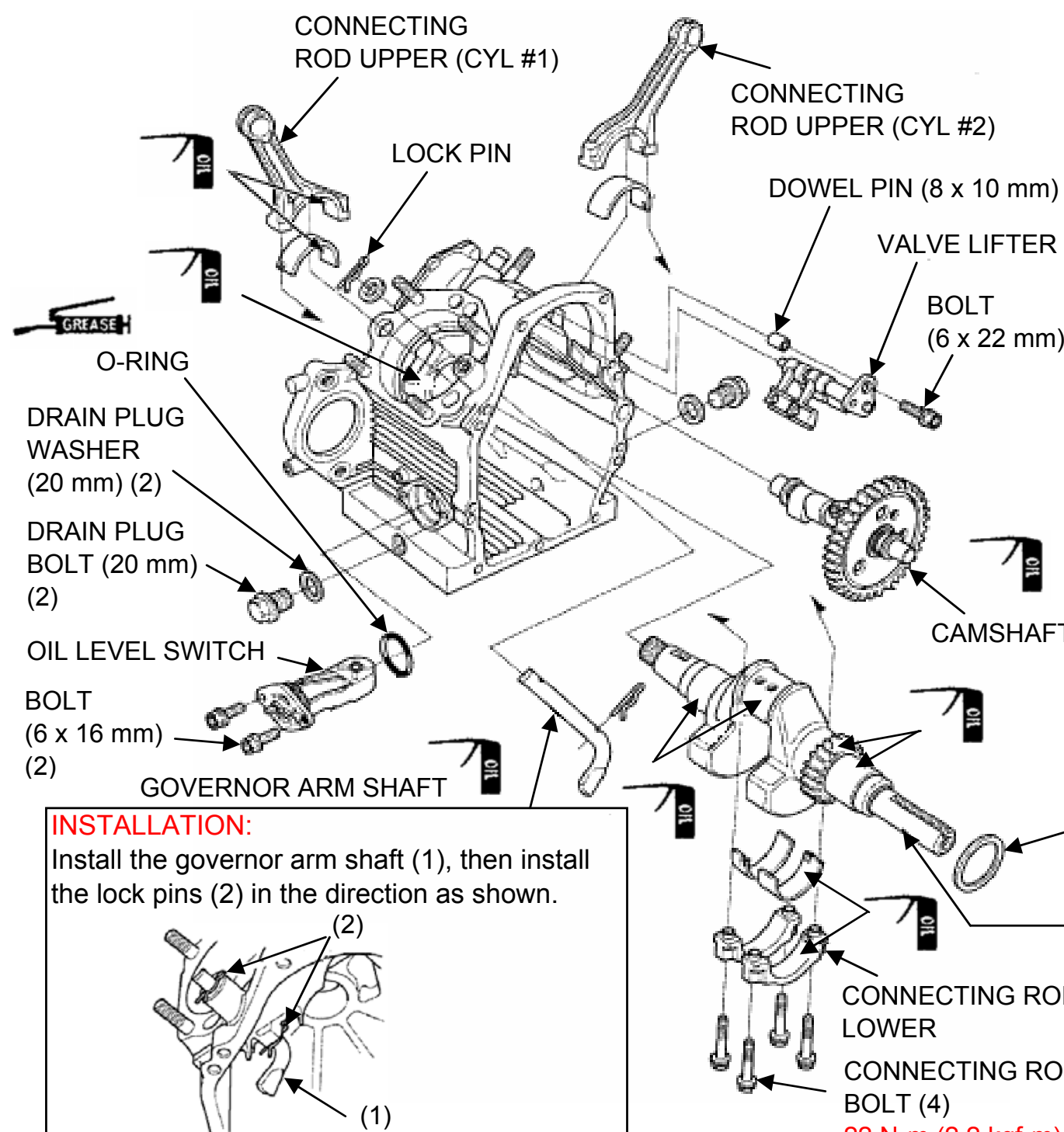
Apply oil to the piston pin (4) outer surface, connecting rod small end and piston pin bore. Install the piston pin through the piston and connecting rod.

Install new piston pin clips (5) into the grooves in the piston pin hole.

- Make sure the piston pin clips are seated securely.
- Do not align the piston pin clip and gap (6) with the piston cutout (7).



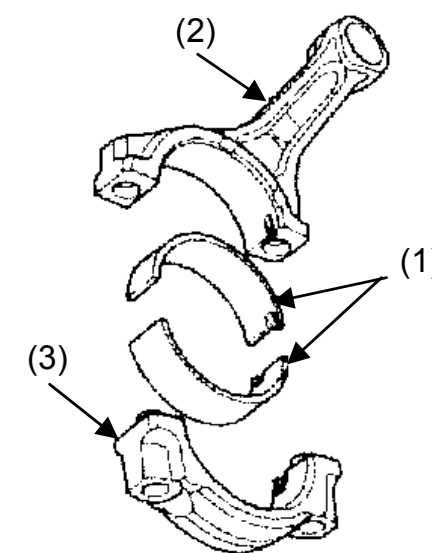
CRANKSHAFT/CONNECTING ROD/CAMSHAFT



CONNECTING ROD BEARING

INSTALLATION:

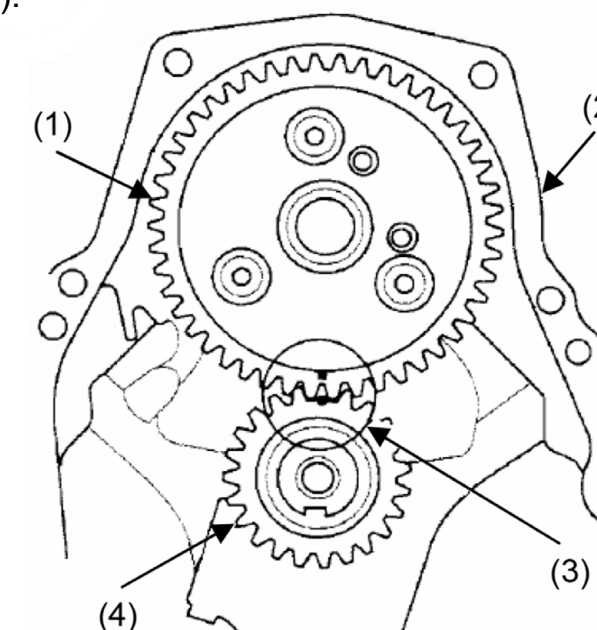
Install the connecting rod bearing (1) on the connecting rod upper (2) and lower (3) in the direction as shown. Each connecting rod upper and lower are not interchangeable.



CAMSHAFT

INSTALLATION:

Open the valve lifters in the crankcase. Install the camshaft (1) into the crankcase (2) by aligning the punch marks (3) on the camshaft and the crankshaft (4) (marked on the timing gear).



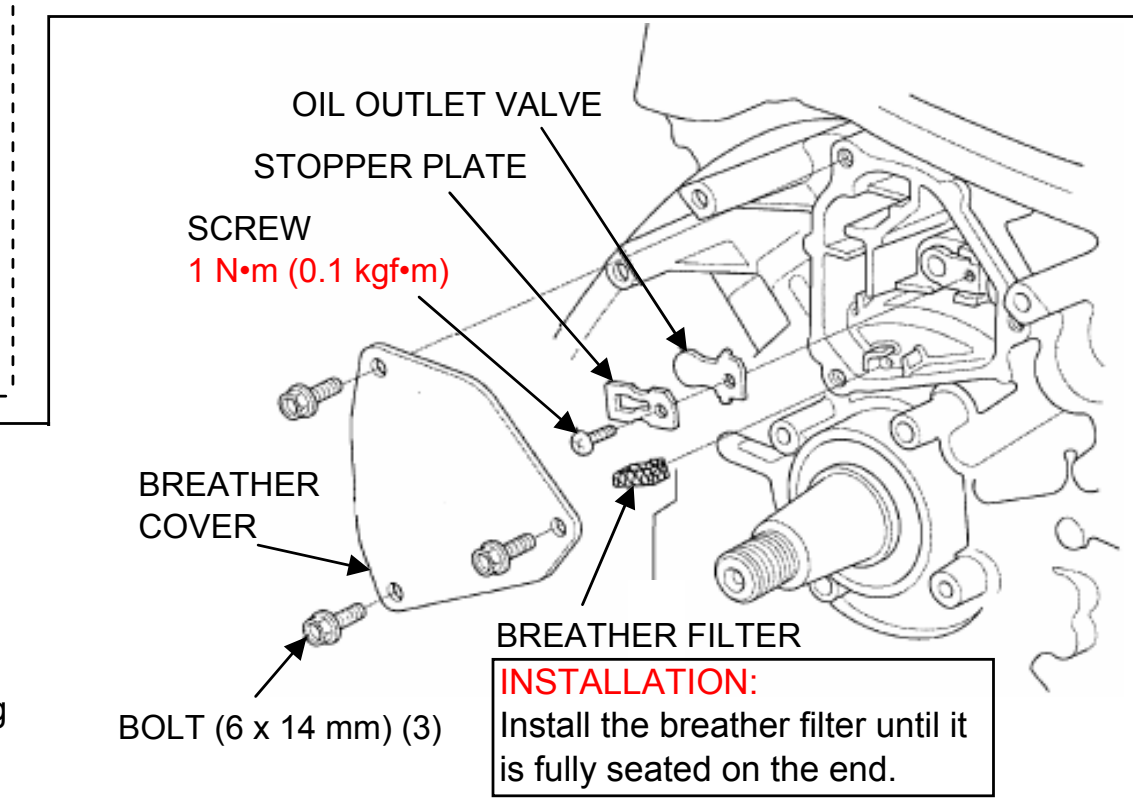
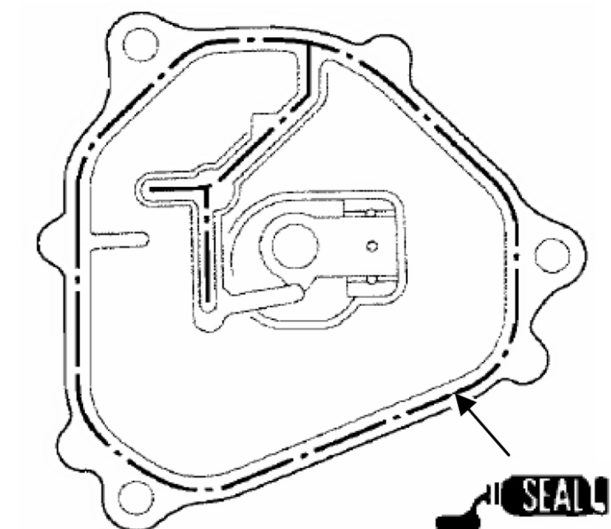
Install the breather cover and tighten the three flange bolts securely.

- Be sure not to catch the breather filter between the breather cover and crankcase.
- Assemble the breather cover **within 3 minutes** after applying liquid gasket.
- Wait for **30 minutes** after assembly before filling with oil and starting the engine.

BREATHER

Clean the mating surfaces of the breather cover and crankcase of old liquid gasket, oil and other foreign material.

Apply a bead ($\phi 1.0 - 1.5 \text{ mm}$ ($\phi 0.04 - 0.06 \text{ in}$)) of liquid gasket (Threebond TB1207B, Hondabond HT, Hondabond 4 or equivalent) to the mating surface of the crankcase as shown.



INSTALLATION:

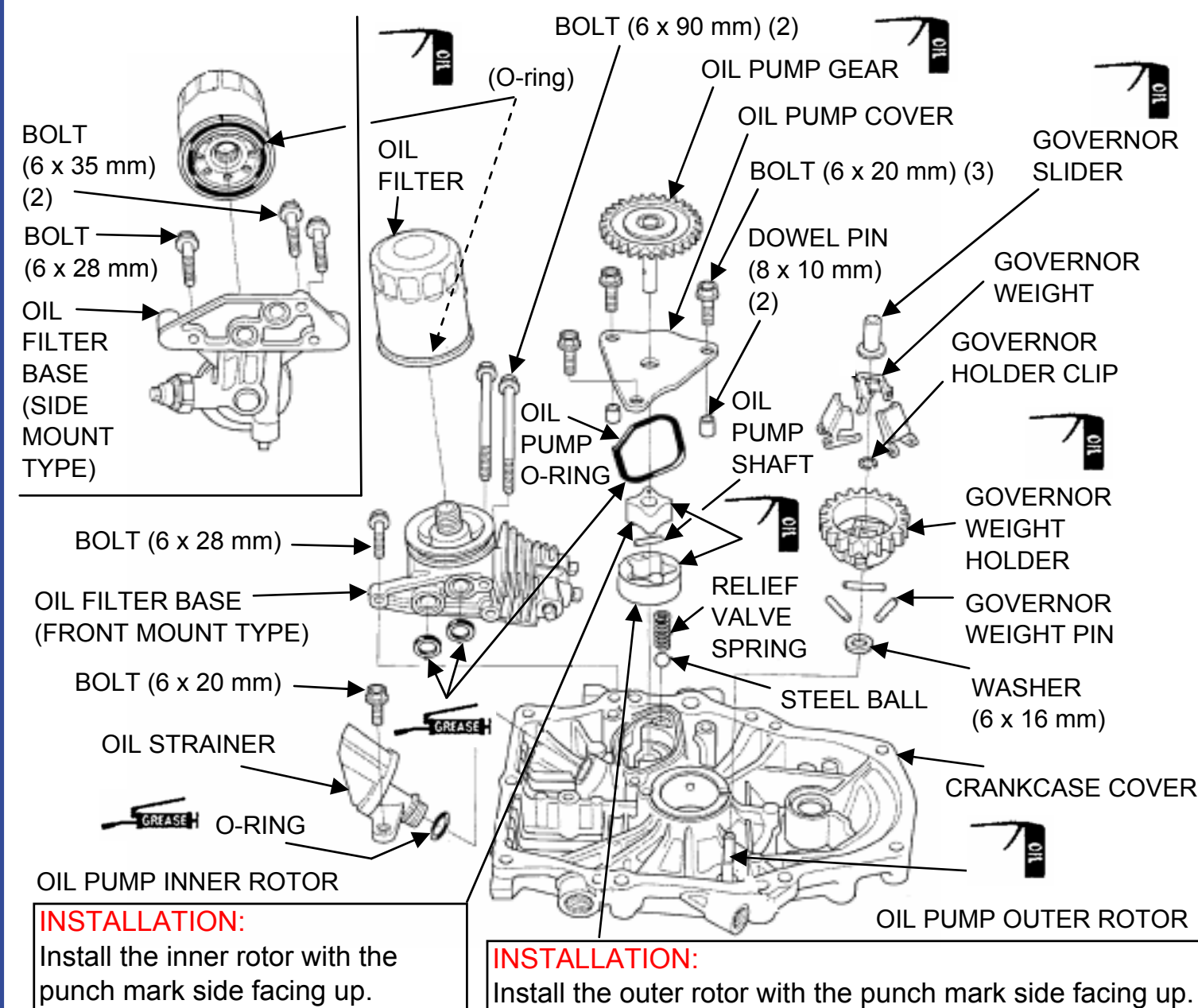
Install the breather filter until it is fully seated on the end.



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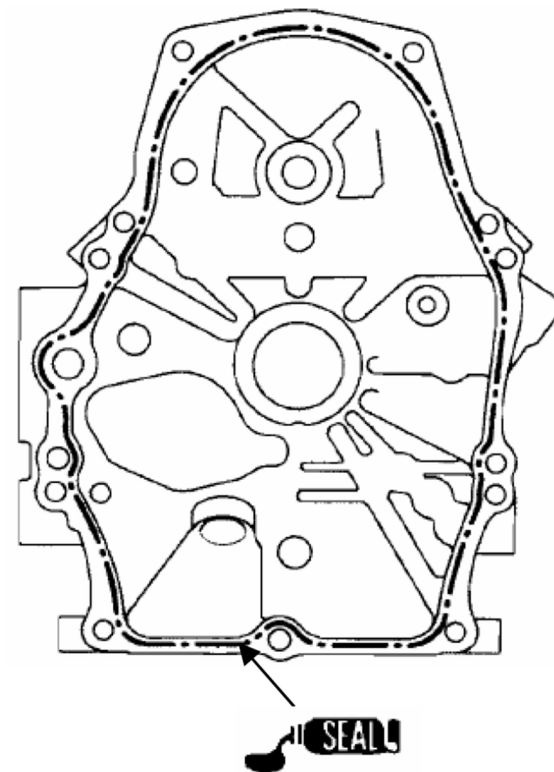
HONDA

GOVERNOR/PUMP/OIL FILTER/CRANKCASE COVER



Clean the mating surface of the crankcase cover and crankcase of old liquid gasket, oil and other foreign material.

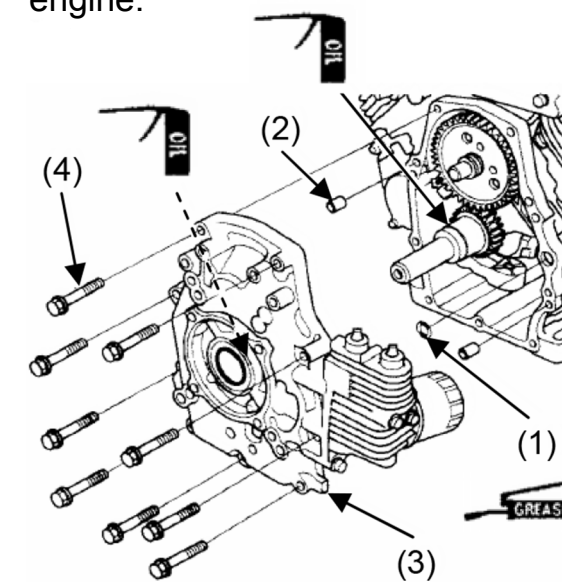
Apply a bead ($\phi 1.0 - 1.5 \text{ mm}$ ($\phi 0.04 - 0.06 \text{ in}$)) of liquid gasket (Threebond TB1207B, Hondabond HT, Hondabond 4 or equivalent) to the mating surface of the crankcase cover as shown.



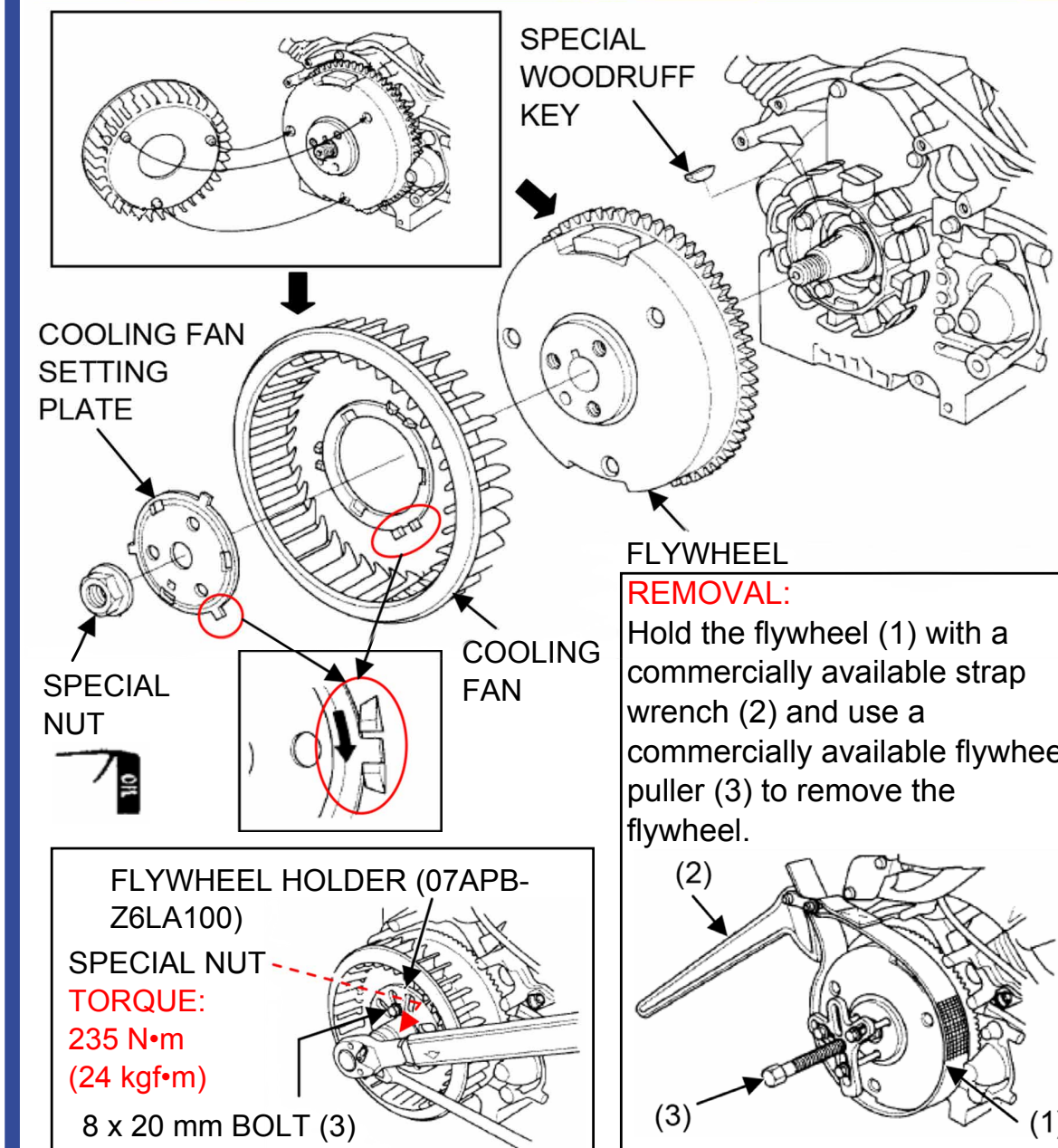
Apply grease to the O-ring (1). Install the two dowel pins (2) and O-ring to the crankcase.

Apply a light coat of oil to the main journal part of the crankshaft and crankcase cover (3). Install the crankcase cover and tighten the nine flange bolts (4) securely.

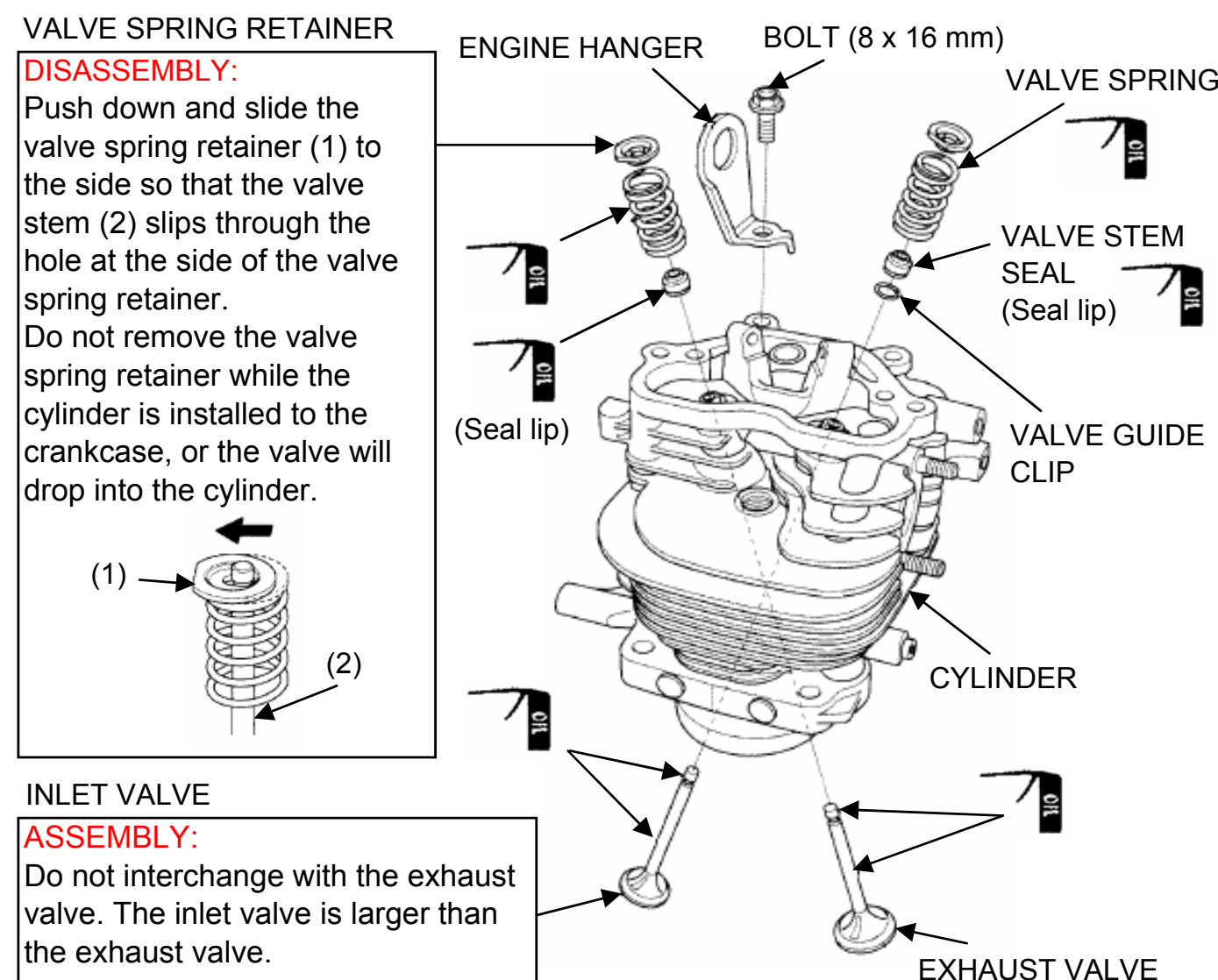
- Assemble the crankcase cover **within 3 minutes** after applying liquid gasket.
- Wait for **30 minutes** after assembly before filling with oil and starting the engine.



COOLING FAN/FLYWHEEL

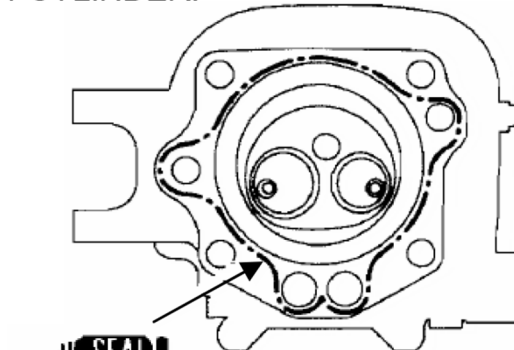


CYLINDER/VALVES/CRANKCASE

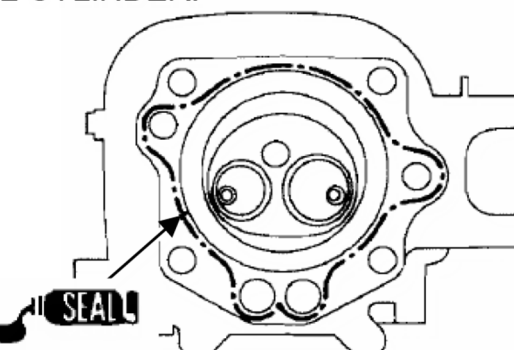


Apply a bead ($\phi 1.0 - 1.5 \text{ mm}$ ($\phi 0.04 - 0.06 \text{ in}$)) of liquid gasket (Threebond TB1207B, Hondabond HT, Hondabond 4 or equivalent) to the mating surface of the cylinder as shown.

No. 1 CYLINDER:



No. 2 CYLINDER:



Apply grease to the oil passage packing (1). Install the dowel pins (2) and oil passage packing on the crankcase.

Apply oil to the cylinder inner surface, piston outer surface and piston rings.

Install the cylinder (3) over the piston (4) while compressing the piston rings with your fingers.

Apply a light coat of oil to the threads and the seating surface of the four flange nuts (5) and tighten them to the specified torque.

TORQUE: 37 N•m (3.8 kgf•m)

- Assemble the cylinder **within 3 minutes** after applying liquid gasket.
- Wait for **30 minutes** after assembly before filling with oil and starting the engine.

Apply oil to the both end of the two push rods (6) and insert them into the cylinder.

Apply oil to the bearing and slipper of the rocker arms and install them to the cylinder. Apply oil to the rocker arm shaft and insert into the cylinder in the direction as shown. Install the valve cover.

