

# GX630 • GX660 • GX690 Engine Assembly Information

## HONDA

### **MARK** TOP RING PISTON RING SET (CHROME PLATED) ASSEMBLY: The top ring (1) and second ring (2) are not SECOND RING interchangeable. Install the top and second ring on the piston with the mark side facing up. SIDE RAIL Check that the piston rings rotate smoothly after OIL RING installing them. (COMBINATION : Space the piston ring end gaps 120 degrees 10 mm (0.4 in) RING) apart, and do not align the ring end gaps with CORRANA DOS SPACER the piston pin bore.

## **PISTON**

**INSTALLATION:** 

### PISTON

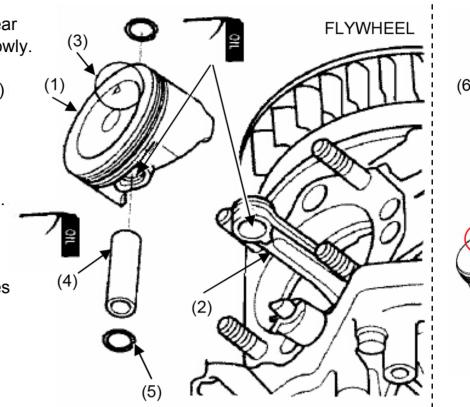
Position the connecting rod of the cylinder near top dead center by rotating the crankshaft slowly.

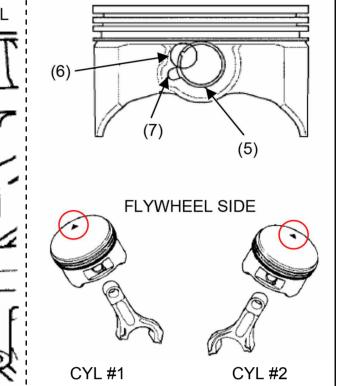
Install the piston (1) on the connecting rod (2) with triangle mark (3) of the piston pointing toward the flywheel side as shown.

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).





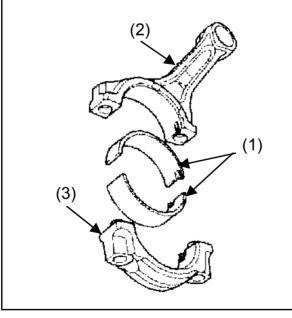


### CONNECTING ROD UPPER (CYL #1) CONNECTING ROD UPPER (CYL #2) **LOCK PIN** DOWEL PIN (8 x 10 mm) **VALVE LIFTER BOLT** GREASE (6 x 22 mm) O-RING DRAIN PLUG WASHER (20 mm) (2) \ DRAIN PLUG BOLT (20 mm) \ **CAMSHAFT** OIL LEVEL SWITCH

# 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.



# CRANKSHAFT THRUST WASHER CRANKSHAFT

INSTALLATION:
Before installing the crankshaft,
check the crankcase oil seal for
damage or hardening.
Be careful not to damage the oil
seal when installing the crankshaft.

**CONNECTING ROD** 

**CONNECTING ROD** 

22 N•m (2.2 kgf•m)

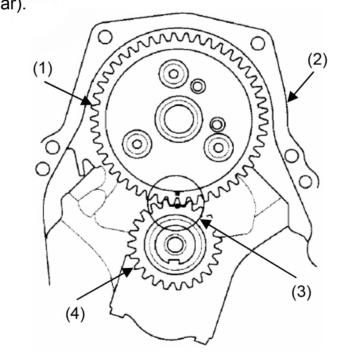
LOWER

BOLT (4)

### 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).



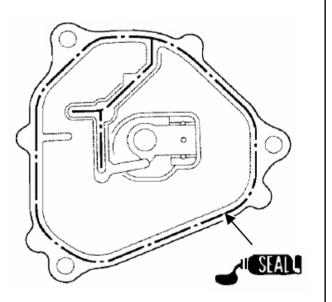
Install the breather cover and tighten the three flange bolts securely.

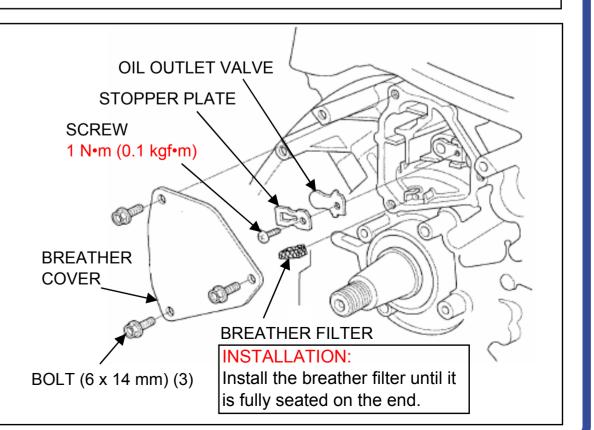
- •Be sure not to catch the breather filter between the breather cover and crankcase.
- Assemble the breather cover within 3 minutes after applying liquid gasket.
- Wait for 30 minutes after assembly before filling with oil and starting the engine.

# **BREATHER**

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

Apply a bead (Ø1.0 - 1.5 mm (Ø0.04 - 0.06 in) of liquid gasket (Threebond TB1207B, Hondabond HT, Hondabond 4 or equivalent) to the mating surface of the crankcase as shown.





see the shop manual for additional information. © Honda Motor Co., Ltd. 201

**BOLT** 

 $(6 \times 16 \text{ mm}) -$ 

**INSTALLATION:** 

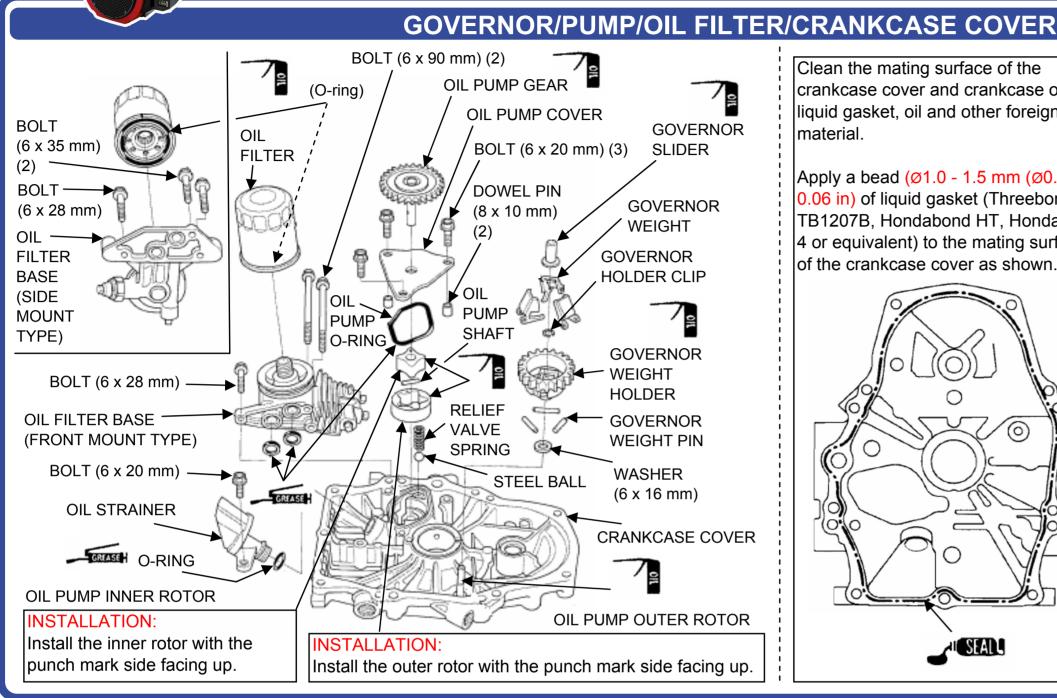
GOVERNOR ARM SHAFT

Install the governor arm shaft (1), then install

the lock pins (2) in the direction as shown.

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# HONDA



BOLT (8 x 16 mm)

VALVE SPRING

**VALVE STEM** 

**VALVE GUIDE** 

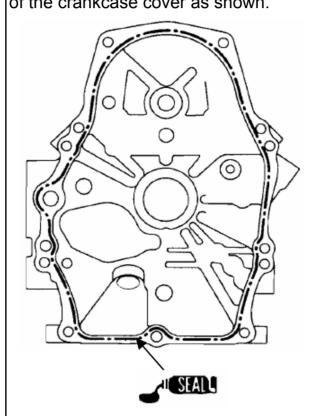
(Seal lip)

**CYLINDER** 

EXHAUST VALVE

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

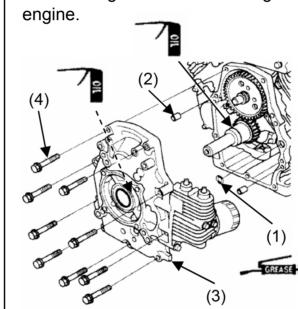
Apply a bead (Ø1.0 - 1.5 mm (Ø0.04 -0.06 in) of liquid gasket (Threebond TB1207B, Hondabond HT, Hondabond 4 or equivalent) to the mating surface of the crankcase cover as shown.

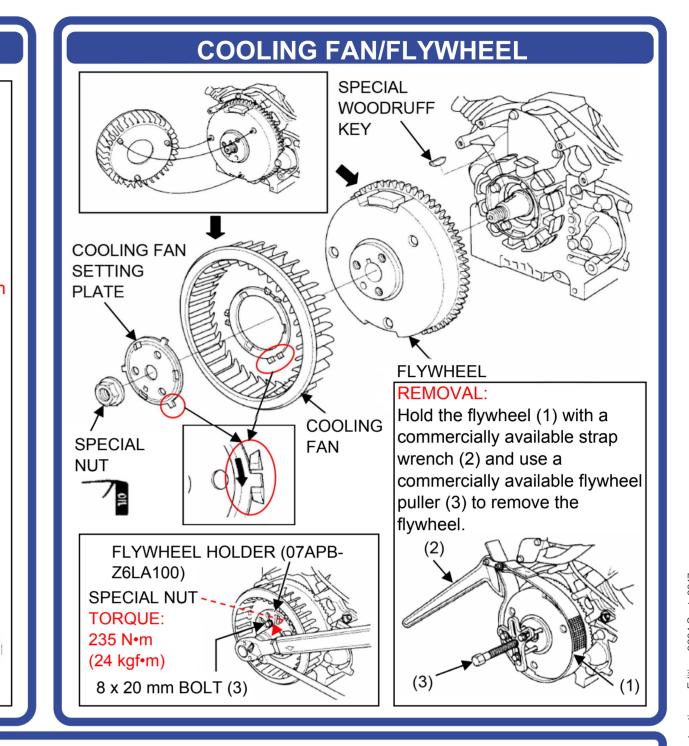


Apply grease to the O-ring (1). Install the two dowel pins (2) and Oring to the crankcase.

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



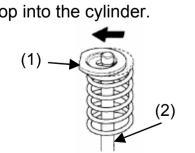




(Seal lip)

**DISASSEMBLY:** Push down and slide the valve spring retainer (1) to the side so that the valve stem (2) slips through the hole at the side of the valve

spring retainer. Do not remove the valve spring retainer while the cvlinder is installed to the crankcase, or the valve will



### **INLET VALVE**

**ASSEMBLY:** 

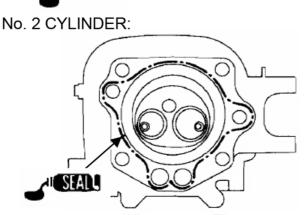
Do not interchange with the exhaust valve. The inlet valve is larger than the exhaust valve.

### Apply a bead (Ø1.0 - 1.5 mm (Ø0.04 - 0.06 in) of liquid gasket (Threebond TB1207B, Hondabond HT, Hondabond 4 or equivalent) to the mating surface of the

CYLINDER/VALVES/CRANKCASE

cylinder as shown.

No. 1 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

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 • Wait for 30 minutes after assembly before filling

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

with oil and starting the engine.

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.

