



## PISTON

**TOP RING**  
**REASSEMBLY:**  
Chrome plated.  
Do not interchange with second ring.

**MAKER MARK** ["N" mark]

**MAKER MARK** ["T" mark]

**SECOND RING**

**OIL RING**  
**REASSEMBLY:**  
Space the side rail end gaps at least 20 mm (0.8 in) apart.  
Coat the oil ring with oil after assembly.

20 mm (0.8 in) 20 mm (0.8 in)

**PISTON PIN**

**"▲FW" MARK**

**PISTON**

**CONNECTING ROD**

**CONNECTING ROD CAP**

**CONNECTING ROD BOLT (2)**  
12 N·m (1.2 kgf·m, 9 lbf·ft)

**PISTON RINGS**  
**REASSEMBLY:**

- Install with the mark facing upward as shown.
- Do not interchange the top ring and the second ring.
- After assembly, check for smooth movement of the piston ring.
- Stagger the piston ring end gaps 120° apart. Do not align with the piston pin.

**TOP RING (CHROME PLATED)**

**SECOND RING**

**SIDE RAIL SPACER**

**OIL RING**

**PISTON PIN CLIP (2)**  
**REASSEMBLY:**  
Set one end of the clip into the groove in the piston and work the other end around in the groove using a pair of needle nosed pliers. Install so that the end gap does not face the notch in the piston.

**END GAP**

**NOTCH**

## CYLINDER/PISTON ASSEMBLY

**THRUST WASHER**

**TIMING BELT (2)**  
Specified belts: 93HU8 G-200  
**INSTALLATION:**  
Check that the belt is not worn or cracked and do not bend or twist the belt.

**CRANKSHAFT**  
**INSTALLATION:**  
• Be careful not to damage the oil seal.  
• After installation, clean the crankshaft tapered surface.

**6207 RADIAL BALL BEARING**

**CONNECTING ROD BOLT (4)**  
12 N·m (1.2 kgf·m, 9 lbf·ft)

**CONNECTING ROD CAP (2)**  
**INSTALLATION:**  
Do not interchange with the other connecting rod cap.

**CRANKCASE**

**52 x 35 x 8 mm OIL SEAL**

**8 x 14 mm DOWEL PIN (4)**

**No. 1 CYLINDER ASSEMBLY**

**No. 2 CYLINDER ASSEMBLY**

**No. 1 PISTON ASSEMBLY**

**No. 2 PISTON ASSEMBLY**

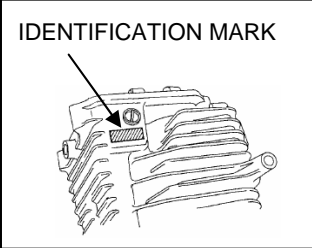
**8 mm FLANGE NUT (8)**  
32 N·m (3.3 kgf·m, 24 lbf·ft)

**6 x 30 mm (2)**  
12 N·m (1.2 kgf·m, 9 lbf·ft)

**GREASE**  
(Apply grease to the lips)

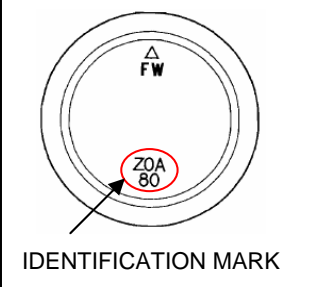
### Identification of AL cylinder type and FC sleeve cylinder type:

<Cylinder>  
AL cylinder:  
• "Z0A0" is stamped at the illustrated position of the cylinder for identification.



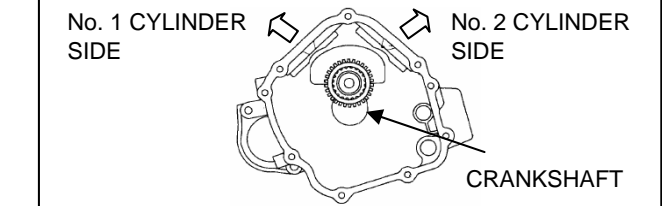
FC sleeve cylinder:  
• "Z0A8" is stamped at the illustrated position of the cylinder for identification.

<Piston>  
AL cylinder:  
• There is not ID mark stamped on the piston head.



FC sleeve cylinder:  
• "Z0A80" is stamped on the piston head for identification.

### Identification of No. 1 cylinder side and No. 2 cylinder side:



## CYLINDER/PISTON ASSEMBLY

### Assembly of No. 1 piston assembly and cylinder:

**No. 1 CYLINDER**

**CONNECTING ROD LONG END**

**"▲FW" MARK**

**FW**

**ALIGNMENT MARKS (On the back side)**

**PISTON RING COMPRESSOR (Commercially available)**

**"▲FW" MARK**

**No. 1 PISTON ASSEMBLY**

**CONNECTING ROD CAP**

**CONNECTING ROD BOLT (2)**

10 mm (0.4 in)

### Assembly of No. 2 piston assembly and cylinder:

**No. 2 CYLINDER**

**CONNECTING ROD LONG END**

**"▲FW" MARK**

**FW**

**ALIGNMENT MARKS (On your side)**

**PISTON RING COMPRESSOR (Commercially available)**

**"▲FW" MARK**

**No. 2 PISTON ASSEMBLY**

**CONNECTING ROD CAP**

**CONNECTING ROD LONG END**

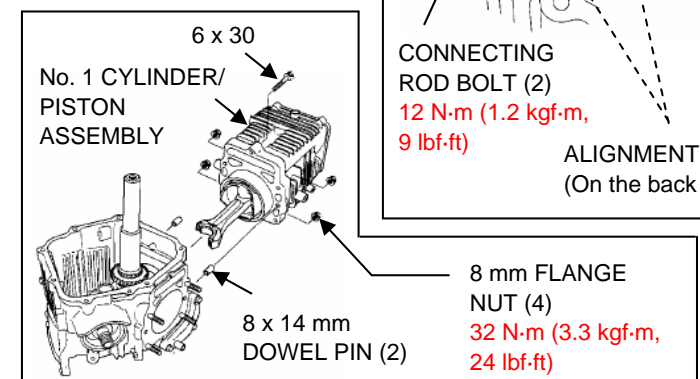
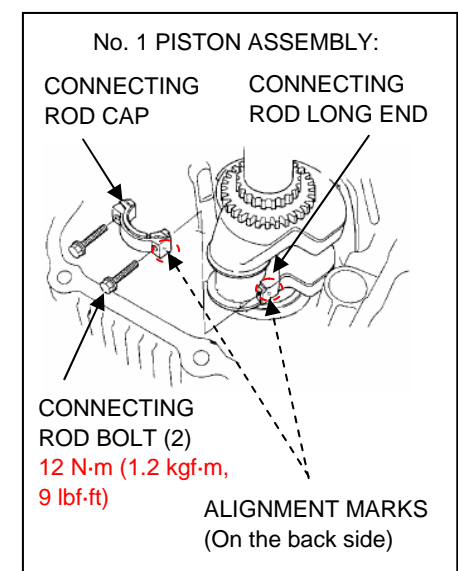
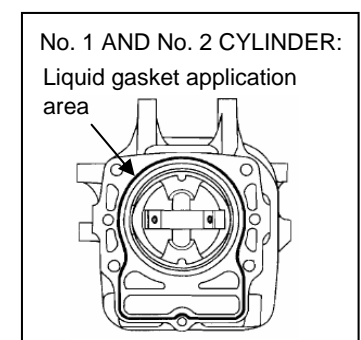
**ALIGNMENT MARKS (On the back side)**

**CONNECTING ROD BOLT (2)**

Set the piston so that the piston end is out from the sleeve end by approximately 10 mm (0.4 in) as shown.

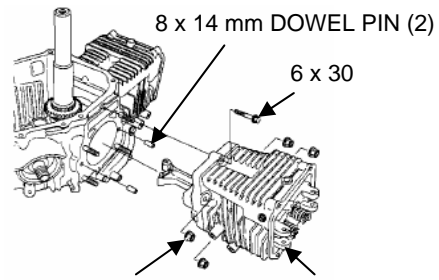
### Installation of No. 1 (No. 2) cylinder/piston assembly:

- Clean the mating surfaces of the crankcase and No. 1 (No. 2) cylinder using a degreasing cleaning agent or a clean shop towel.
  - Apply a bead [ø 1.2 mm (0.05 in)] of liquid gasket (ThreeBond #1207B, Honda Bond #4 or equivalent) to the No. 1 (No. 2) cylinder; specifically, to the mating surface with the crankcase.
  - Take care not to put the liquid gasket on the sleeve of the No. 1 (No. 2) cylinder. Do not apply excessive amount of the liquid gasket to the threaded hole for the 6 x 30 mm flange bolt.
  - Assemble **within 10 minutes** after applying the liquid gasket.
- NOTICE:**  
Take care not to damage the inner wall of the cylinder and crank pin with the connecting rod big end.
- Apply oil to the threaded part and seat of the 8 mm flange nuts and 6 x 30 mm flange bolt. Loosely tighten the nuts and flange bolt against the cylinder.
  - Apply oil to the threaded part and seat of the connecting rod bolts. Tighten the connecting rod bolts to the specified torque.
  - After tightening the connecting rod bolts, tighten the four 8 mm flange nuts and the 6 x 30 mm flange bolt in several steps to the specified torque.



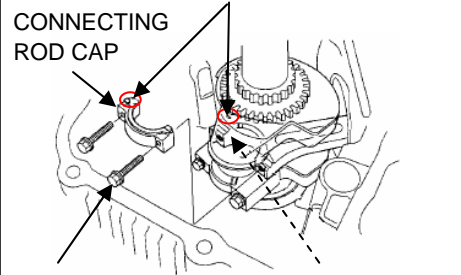


## CYLINDER/PISTON ASSEMBLY



8 mm FLANGE NUT (4) No. 2 CYLINDER/PISTON ASSEMBLY  
32 N·m (3.3 kgf·m, 24 lbf·ft)

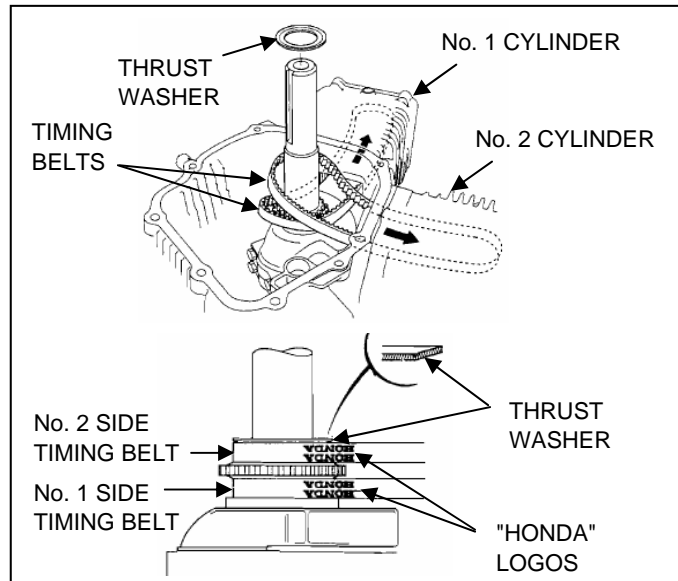
No. 2 PISTON ASSEMBLY: ALIGNMENT MARKS (On your side)



CONNECTING ROD BOLT (2) 12 N·m (1.2 kgf·m, 9 lbf·ft)  
CONNECTING ROD LONG END

### Installation of No. 1 (No. 2) cylinder/piston assembly:

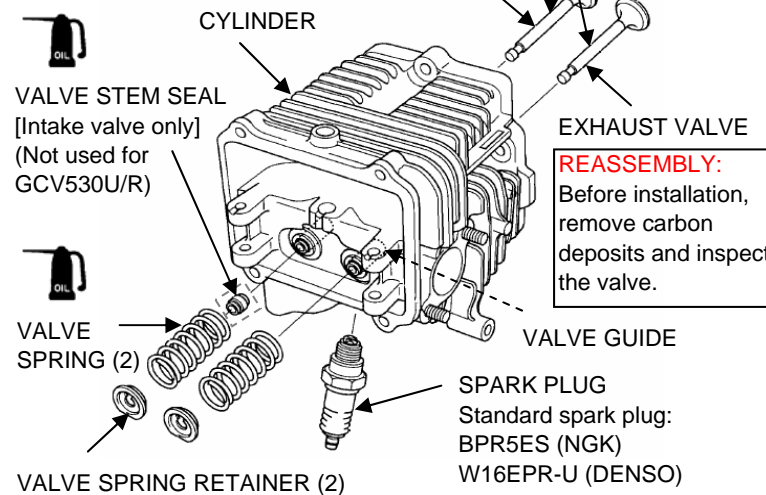
- Set the two timing belts on the timing belt drive pulley so that the "HONDA" logo on each timing belt is upside down as shown.
- Pass the lower belt on the timing belt drive pulley in the No. 1 cylinder, and pass the upper belt on the pulley in the No. 2 cylinder.
- Set the thrust washer on the crankshaft as shown.
- After installing the No. 1/No. 2 piston/cylinder, install the respective cam pulleys.



## CYLINDER/VALVES

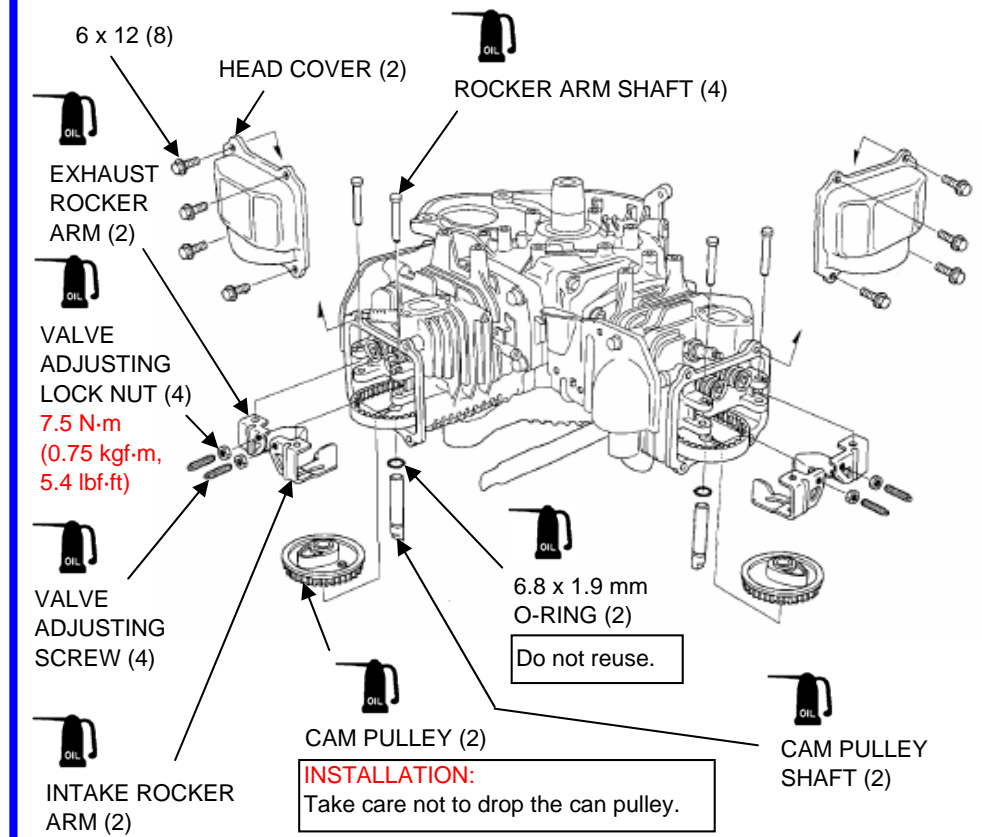
### INTAKE VALVE

**REASSEMBLY:**  
Do not interchange with the exhaust valve.  
VALVE HEAD DIAMETER  
IN: 30 mm (1.2 in) EX: 26 mm (1.0 in)



**DISASSEMBLY:**  
Push down and slide the retainer to the side, so the valve stem slips through the hole at the side of the retainer.  
**NOTICE:**  
Do not remove the valve spring retainer while the piston is installed, or the valves will drop into the cylinder.

## CAM PULLEY

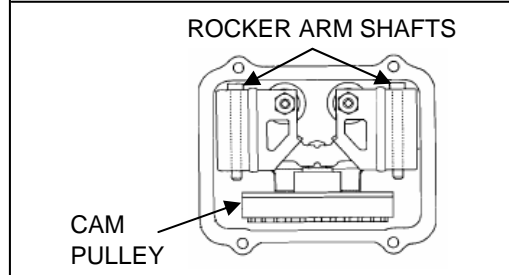
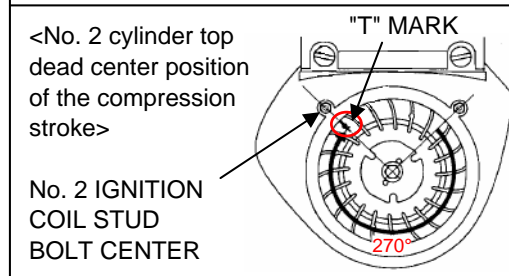
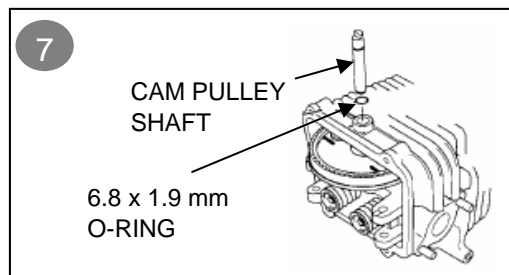
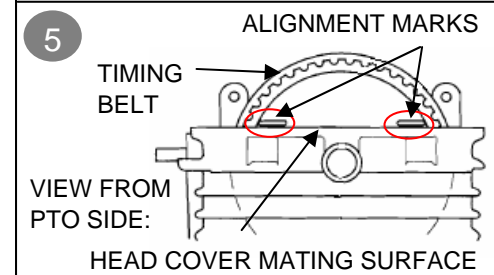
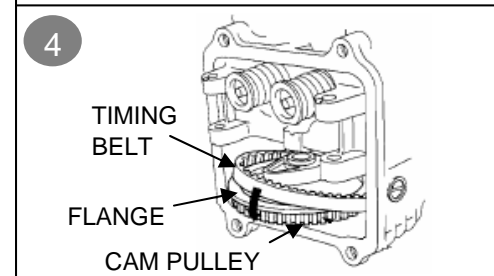
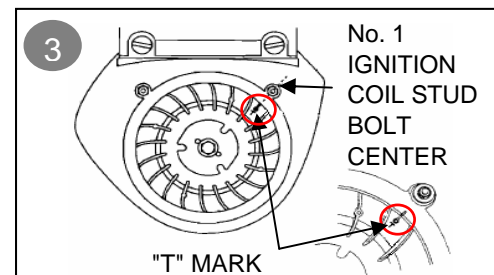


**INSTALLATION:**  
Take care not to drop the cam pulley.

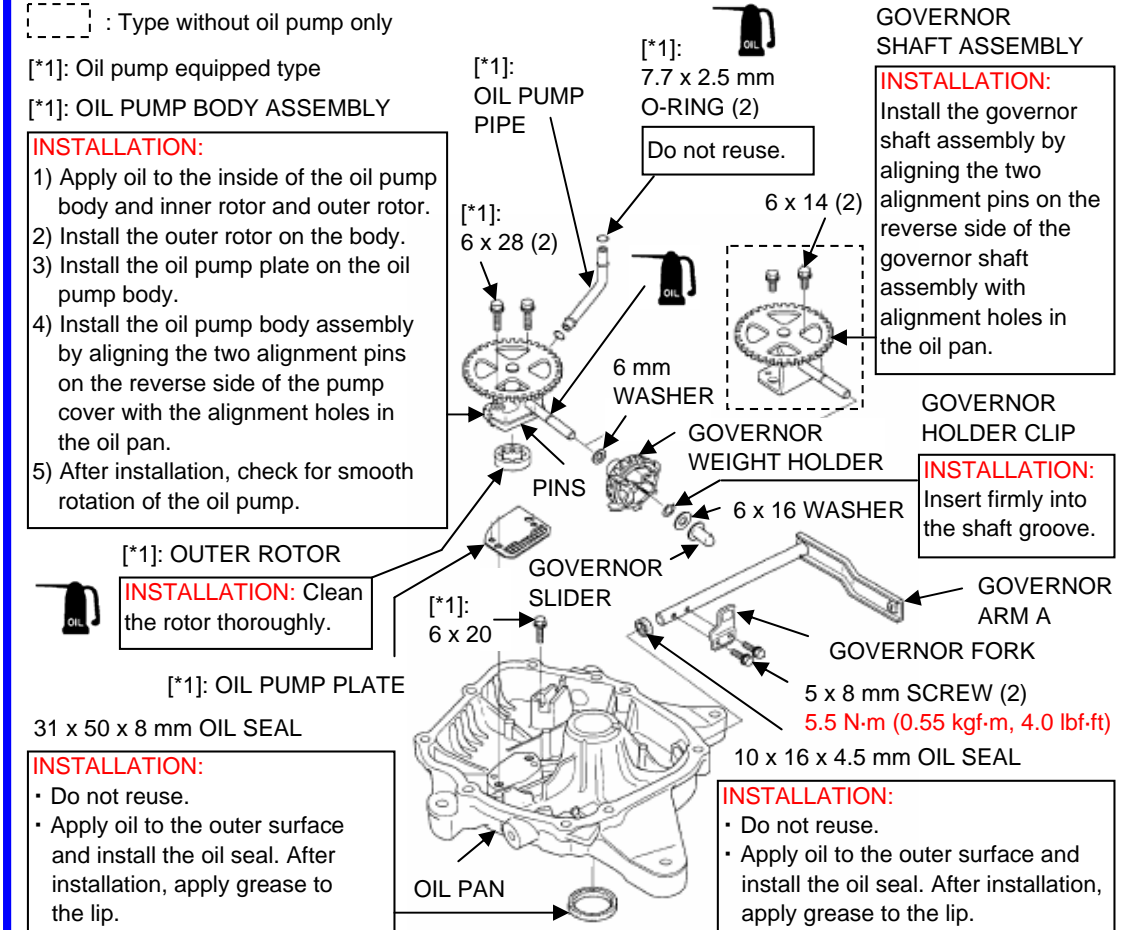
## CAM PULLEY

### Installation of cam pulley/rocker arm shaft:

- <No. 1 cylinder>
- 1) Set the engine upright (i.e. with the carburetor toward up).
  - 2) Remove the spark plugs.
  - 3) Rotate the flywheel clockwise until the "T" mark on the cooling fan aligns with center of the stud bolt of the No. 1 ignition coil. (This alignment point is the top dead center of the No. 1 cylinder.)
  - 4) Set the timing belt on the cam pulley from the flange side of the cam pulley.
  - 5) Align the alignment marks on the cam pulley so that they are in line with the head cover mating surface. The top dead center of the compression stroke is in the position where the head cover mating surface is in line with the cam pulley alignment marks. Be careful to avoid turning the crankshaft when installing.
  - 6) Apply oil to the 6.8 x 1.9 mm O-ring and install it on the cam pulley shaft.
  - 7) Install the cam pulley shaft in the cylinder.
  - 8) Holding the cam pulley alignment marks in line with the head cover mating surface, check again where the piston is at top dead center of the compression stroke.
  - 9) If the alignment marks and the head cover mating surface are out of alignment or if the piston is not at top dead center of the compression stroke, repeat the procedure from the step 3.
- <No. 2 cylinder>
- Rotate the crankshaft 270° to put the No. 2 cylinder at top dead center of its compression stroke.  
Be sure that the No. 2 cylinder is at top dead center of the compression stroke. Repeat the operation of the step 4 through step 9 explained above at the No. 2 cylinder, and install the cam pulley.
- <Rocker arm shaft>
- Install the rocker arm shaft from the opposite side of the cam pulley as shown.



## OIL PUMP [Equipped type only]

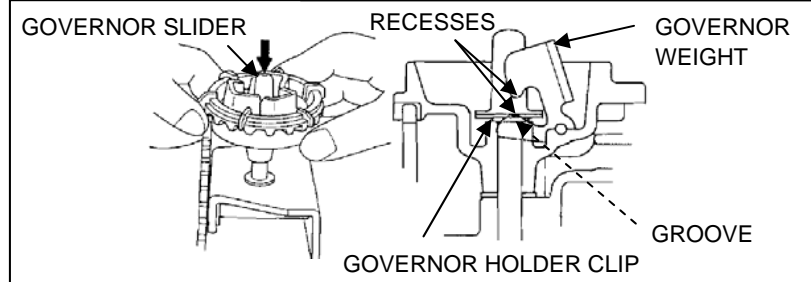
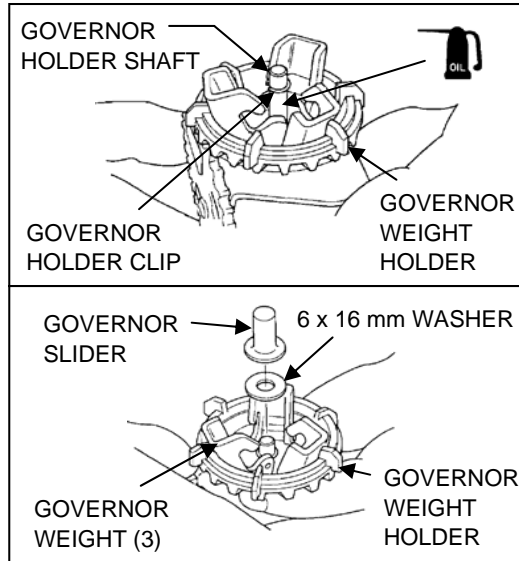




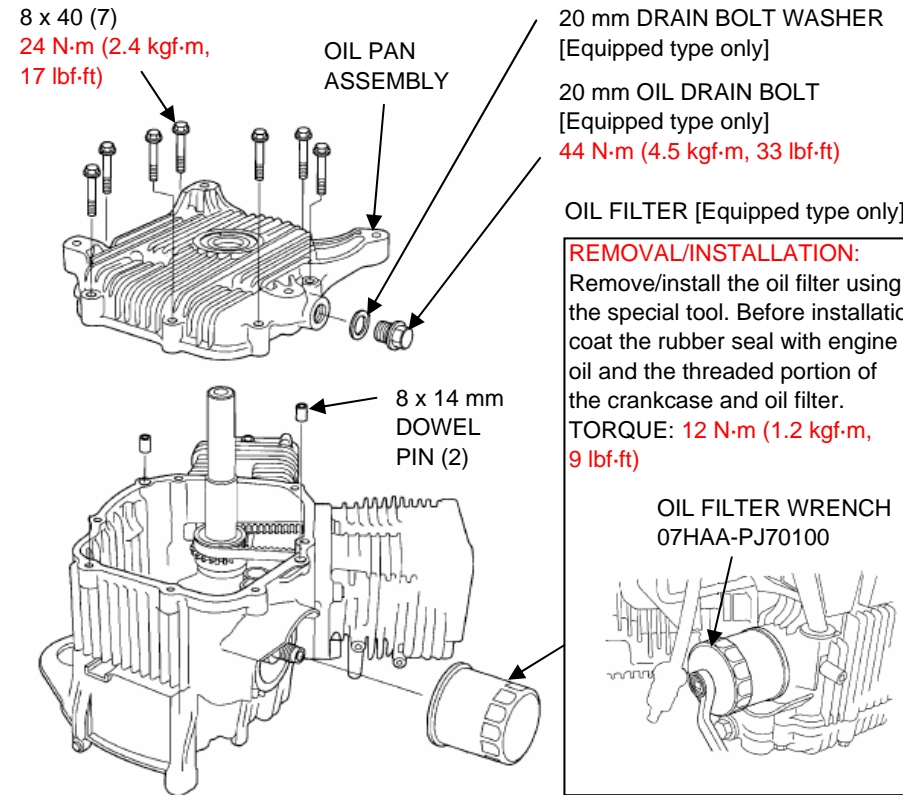
## GOVERNOR

### Installation of governor weight holder/clip/governor slider:

- 1) Apply oil to the governor holder shaft and install the 6 mm washer and governor weight holder shaft.
- 2) Set the clip at the end of the governor holder shaft.
- 3) Raise the governor weight holder toward the clip.
- 4) Holding the governor weight open, set the 6 x 16 mm washer and governor slider on the governor holder shaft.
- 5) Check that the washer and slider are securely set in recesses in the governor weight. Push in the governor slider and set the clip securely in the groove in the governor holder shaft.
- 6) After assembly, check that the governor weight and governor slider operate smoothly.



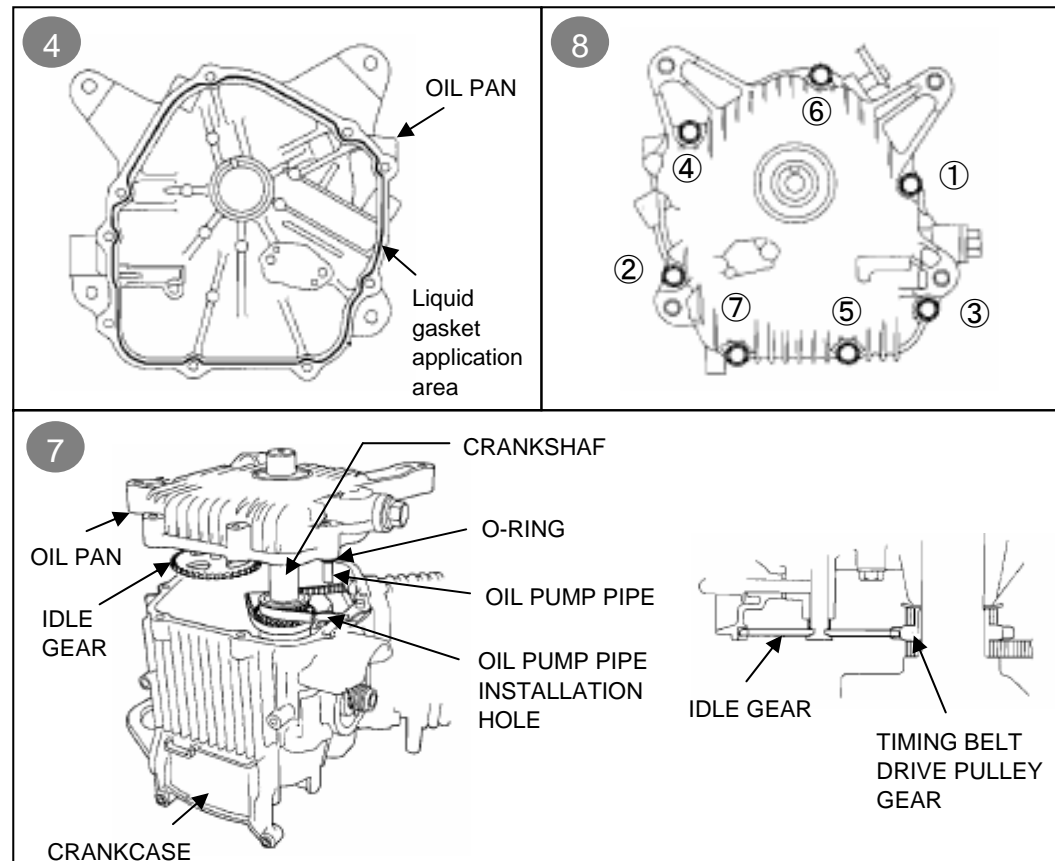
## OIL PAN ASSEMBLY



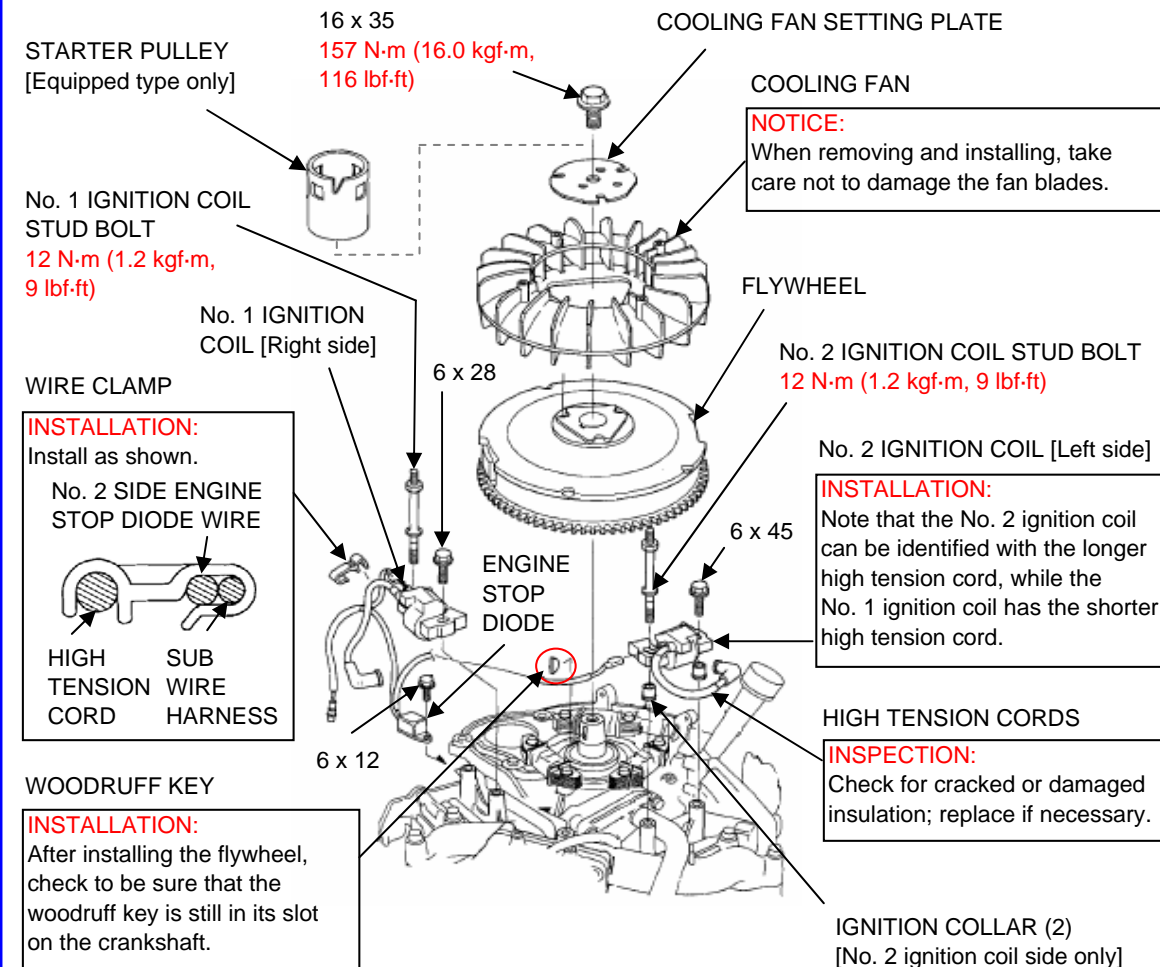
### Installation of oil pan:

- Check that the thrust washer is set on the crankshaft properly.
- 1) Install the cam pulley on the timing belt of the No. 1/No. 2 cylinder.
  - 2) Clean the mating surfaces of the crankcase and oil pan using a degreasing cleaning agent or a clean shop towel.
  - 3) Set the two 8 x 14 mm dowel pins on the crankcase.
  - 4) Apply a bead [ø 1.2 mm (0.05 in)] of liquid gasket (ThreeBond #1207B, Honda Bond #4 or equivalent) to the oil pan; specifically, to the mating surface with the crankcase. Assemble **within 10 minutes** after applying the liquid gasket.
  - 5) Apply grease to the 31 x 50 x 8 mm oil seal lip and set the oil pan on the crankshaft.
  - 6) Apply oil to the oil pump pipe O-ring. Align the end of the oil pump pipe with the pipe installation hole in the crankcase (Oil pump equipped type only).
  - 7) Align the mating surfaces of the oil pan and crankcase securely by turning the crankshaft and tapping on the oil pan with the hand. Turn the crankshaft until the oil pan and crankcase mate with each other securely.
- NOTICE:**  
Do not tighten the bolt without aligning the mating surfaces. It can damage the idle gear and/or timing belt drive pulley gear.
- 8) Loosely tighten each 8 x 40 mm flange bolts, then tighten to the specified torque in the numbered sequence.  
**TORQUE: 24 N-m (2.4 kgf-m, 17 lbf-ft)**
  - 9) Wait for **approximately 20 minutes** after assembly before filling oil and starting the engine.

## OIL PAN ASSEMBLY



## COOLING FAN/FLYWHEEL/IGNITION COILS



### Installation of cooling fan/flywheel:

- 1) Clean the taper on the crankshaft and the tapered hole in the flywheel, then install the flywheel.  
**NOTICE:**  
The flywheel may push the key out of its slot; check after installation.
- 2) Attach by aligning the three lugs on the rear side of the fan with the small holes in the flywheel.
- 3) Align the three cutouts in the cooling fan setting plate with the three projections on the cooling fan, and install the cooling fan setting plate with the projection on the cooling fan toward the flywheel. Attach by aligning the two lugs on the rear side of the starter pulley with the small holes in the cooling fan cover (Equipped type only).
- 4) Apply oil to the seat and the threaded part of the 16 x 35 mm flange bolt.
- 5) Install the 16 x 35 mm flange bolt using a commercially available strap wrench.
- 6) Tighten to the specified torque.  
**TORQUE: 157 N-m (16.0 kgf-m, 116 lbf-ft)**

