

HONDA ENGINES

OVERHEAD-VALVE ENGINE #37

REVISED FEBRUARY 2007

ENGINE DISTRIBUTORS SERVICE BULLETIN



For Additional Information, Contact:

GX610K1 • GX620K1 • GX670 GXV610K1 • GXV620K1 • GXV670 LOW OIL PRESSURE

SYMPTOM

After the engine reaches operating temperature, oil pressure may drop below 5 psi at idle. In applications where a low oil pressure light is used, the light may come on at idle. This symptom usually happens within the first 5 hours of operation.

If an affected unit has the described symptom, proceed with the *Corrective Action*.

AFFECTED UNITS

Model	Serial Number Range
GX610K1	GCAC-2000001 ~ 2060145
GX620K1	GCAD-2000001 ~ 2160012
GX620K1	GDABM-1000001 ~ 1001648
GX670	GCAM-1000001 ~ 1050042
GX670	GDACM-1000001 ~ 1010162
GXV610K1	GJAC-2000001 ~ 2020045
GXV620K1	GJAD-2000001 ~ 2040294
GXV670	GJAH-1000001 ~ 1020001



Improper seal between the oil pump cover and the engine side cover causes a reduction in oil pressure.



NEW

CORRECTIVE ACTION

The oil pump cover does not effectively seal with the engine side cover; this prevents the oil pump from priming, or causes a reduction in oil pressure. At high engine temperatures, the poor seal allows the oil pressure to bleed off. Affected units with the described symptom should first be inspected to determine if the problem is the result of inadequate maintenance. Proceed to the next page for inspection procedures.

CONSUMER INFORMATION: The information in this service bulletin is intended for use only by skilled technicians who have the proper tools, equipment, and training to correctly and safely service and repair your Honda engine. These procedures should not be attempted by "do-it-yourselfers," and you should not assume that this bulletin applies to your engine, or that your engine has the condition described. To determine whether this information applies, contact an authorized Honda engine dealer.

INSPECTION

Perform the following checks:

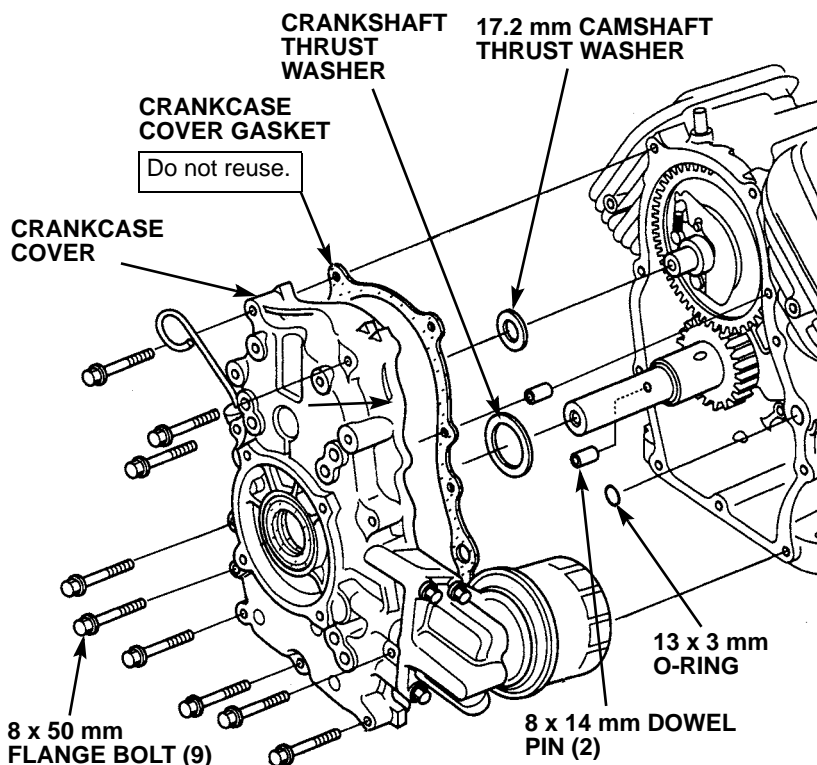
- Inspect the air cleaner, recoil cover, and oil cooler (GX/GXV670) to see if it is packed with dirt or debris.
- Verify that the condition of the oil is consistent with normal maintenance.
- Ensure that oil was present in the engine by looking for oil traces on engine internal components.
- Verify that no foreign objects were ingested into the engine.
- Check the carburetor and intake track for traces of dirt that indicate the engine may have been operated without a functioning air filter.
- Inspect the governor mechanism for tampering or indications that the engine may have operated above its rated speed.

If any of the above signs are present, the engine is not eligible for warranty repair under this bulletin. Once an engine passes all the above checks, it can be repaired. Inspect the engine for other signs of damage and replace any damaged parts as needed. Replace the oil pump as described below.

PROCEDURE

1. Drain the engine oil and dispose of used oil properly.
2. Remove the engine from the OEM piece of equipment (as necessary).
3. Rotate the engine to bring the #1 cylinder to TDC (on the left when facing the engine PTO).
4. Remove the nine 8 x 50 mm flange bolts and the crankcase cover.

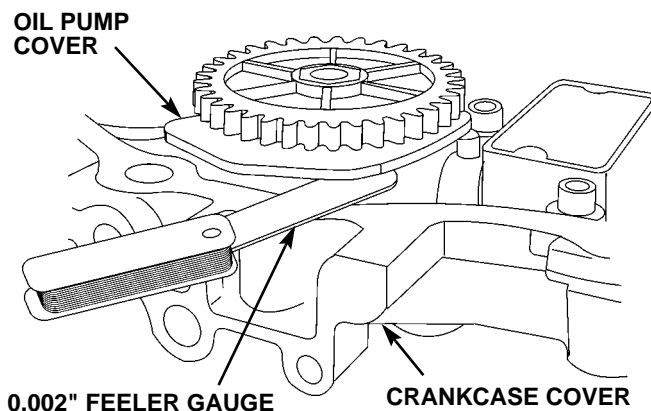
The oil cooler mounting bolts may have to be loosened to remove the case cover (if applicable).



OIL PUMP INSPECTION

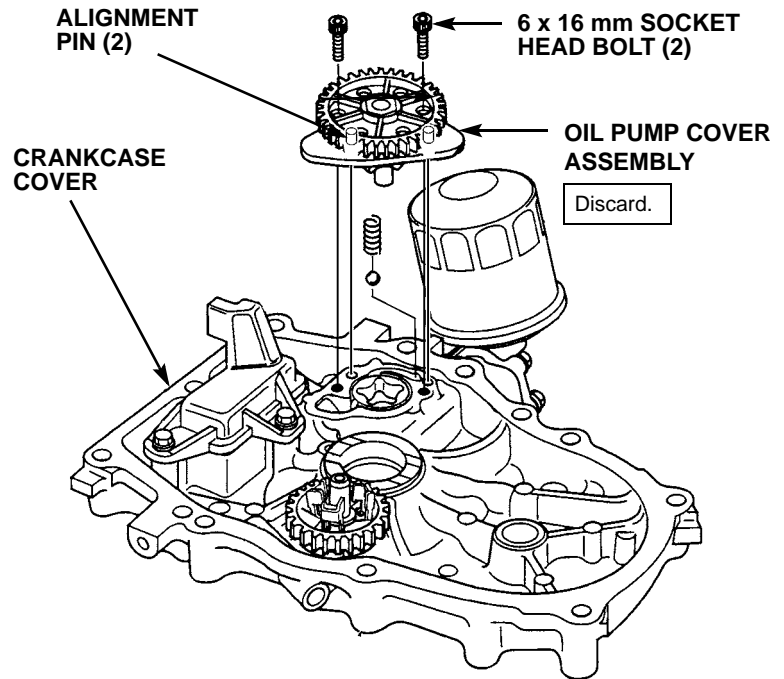
Inspect for a gap between the oil pump cover and oil pump case using a 0.002" feeler gauge.

- If a 0.002" (0.05 mm) feeler gauge fits between the oil pump cover and the crankcase cover, proceed to the REPLACEMENT section (next page).
- If the feeler gauge does not slide between the two surfaces, this bulletin is not applicable.

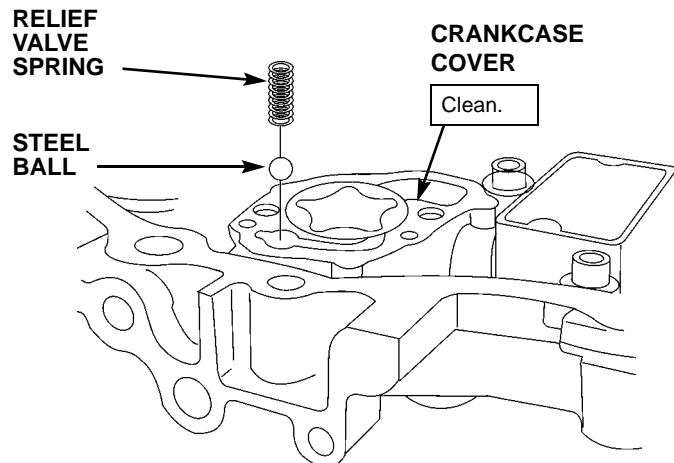


REPLACEMENT

1. Remove the two 6 x 16 mm socket head bolts and remove the oil pump cover assembly, steel ball, and the relief valve spring.
2. Discard the oil pump cover assembly. The old oil pump is not suitable for use.



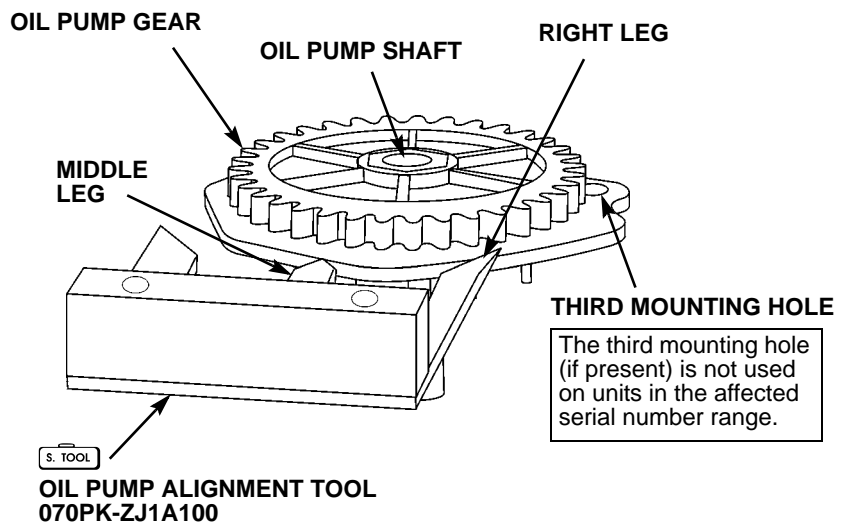
3. Clean the pump contact surface of the crankcase cover.
4. Install the steel ball and the relief valve spring in the crankcase cover as shown.



5. Position the oil pump alignment tool (see page 7) between the oil pump gear and the oil pump cover as shown so that the oil pump cover bolt holes are visible.

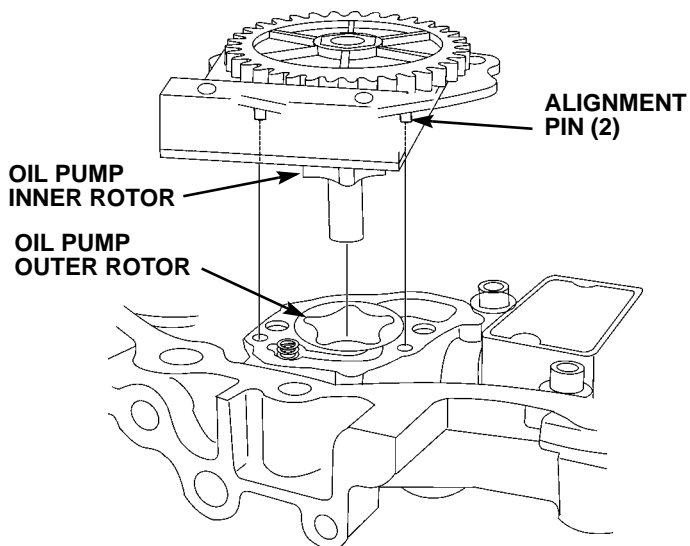
The oil pump shaft should be between the middle and right legs of the special tool.

A third mounting hole may be present on new oil pump cover assemblies. The third mounting hole is not used on units in the affected serial number range.



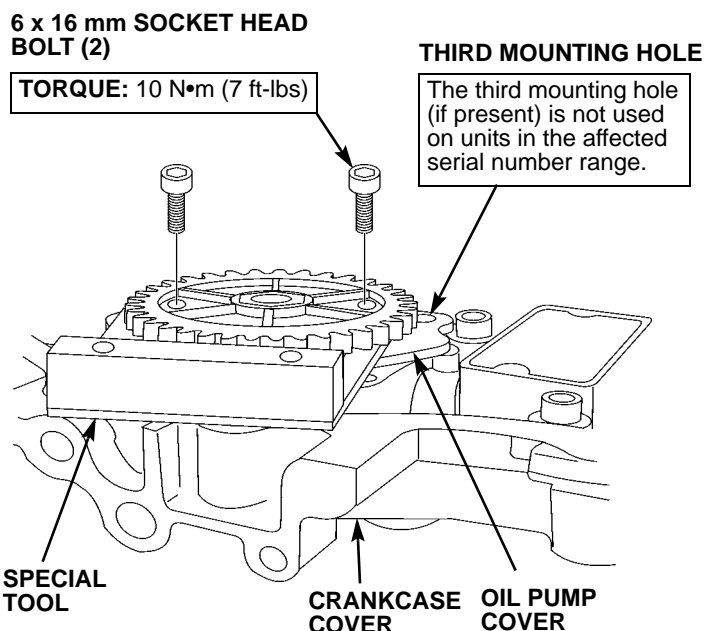
6. Install the cover by aligning the two oil pump cover assembly alignment pins with the two holes in the crankcase cover.

- Rotate the oil pump gear until the oil pump inner rotor aligns with the oil pump outer rotor.
- The oil pump cover should fit snugly over the housing before the bolts are installed. Realign the oil pump cover as needed to obtain proper fit.
- Visually check to make sure the dowel pins are properly engaged and that no gap exists between the pump cover and the oil pump housing. Do not use the bolts to close large gaps between the cover and housing.



7. Loosely install the two 6 x 16 mm socket head bolts.

A third mounting hole may be present on new oil pump cover assemblies. The third mounting hole is not used on units in the affected serial number range.

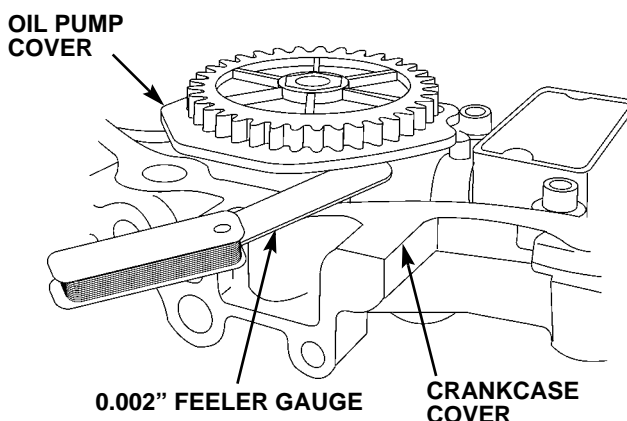


8. Tighten the two 6 x 16 mm socket head bolts to the specified torque, and ensure the pump cover remains in position against the crankcase cover.

TORQUE: 10 N•m (7 ft-lbs)

9. Remove the special tool.

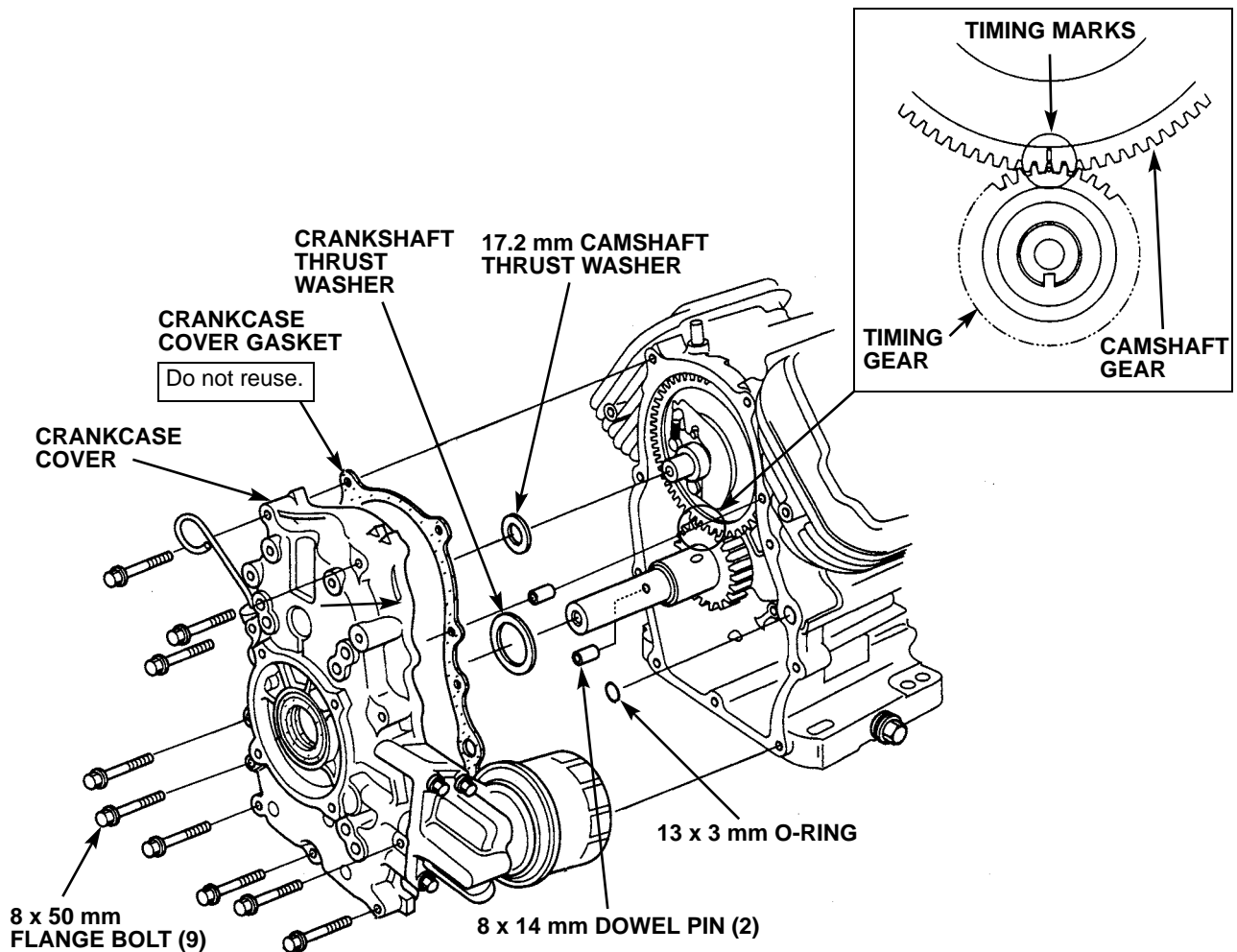
10. Check the clearance between the oil pump cover and the crankcase cover using a 0.002" (0.05 mm) feeler gauge. No gap should be present.



11. Thoroughly clean the crankcase cover and crankcase mating surfaces of all gasket material.
12. Reassemble the engine in the reverse order of disassembly.

Be sure to:

- Install the crankshaft thrust washer over the crankshaft.
 - Install the 17.2 mm camshaft thrust washer over the camshaft.
 - Install the two 8 x 14 mm dowel pins in the crankcase.
 - Install the 13 x 3 mm O-ring on the crankcase.
 - Align the timing marks.
 - Use a new crankcase cover gasket and install it over the two 8 x 14 mm dowel pins.
 - Take care not to damage the crankshaft seal when installing the crankcase cover.
 - Rotate the crankshaft back and forth to get the governor and oil pump gears to engage the crankshaft timing gear.
- Do not apply excessive force when installing the case cover. Use the palm of your hand and tap from side to side to seat the crankcase cover to the crankcase.



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13. Set the nine 8 x 50 mm flange bolts in place, and then tighten them in a crisscross pattern shown to the specified torque.

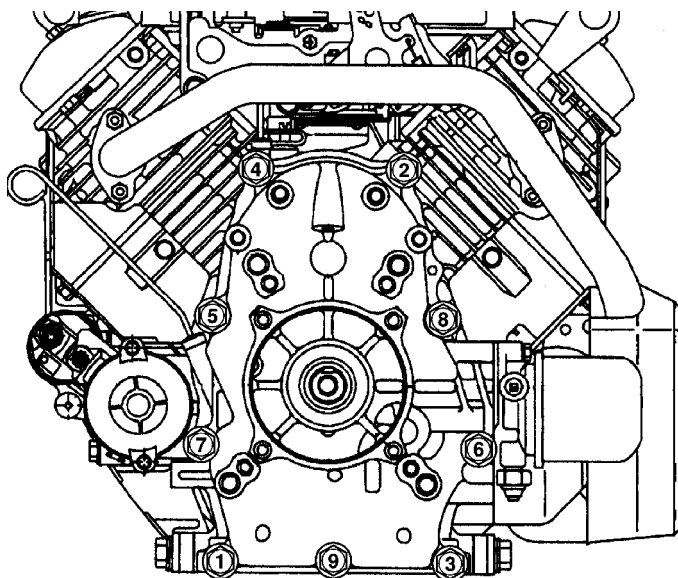
TORQUE: 27 N•m (20 ft-lb)

14. Fill the engine with 10W-30 oil until it reaches the upper mark on the dipstick.

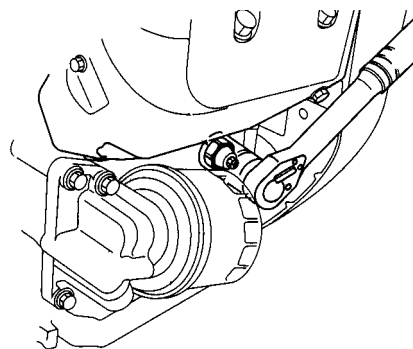
APPROXIMATE REFILL CAPACITY:

1.1 l (1.16 qt) without a new oil filter

1.4 l (1.48 qt) with a new oil filter



15. Remove the oil pressure sending unit (or sealing plug).



16. Install an oil pressure gauge (commercially available).

17. Crank the engine and check the oil pressure rises as the engine starts. With the engine at idle, the minimum oil pressure should be 12 psi (0.84 kgf/cm²).

18. Check the oil pressure at full throttle after the engine has reached operating temperature.

SPECIFIED OIL PRESSURE: 28.4 psi (2.0 kgf/cm²)

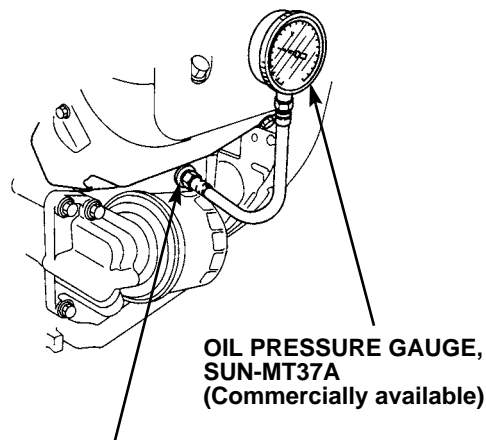
19. Stop the engine.

20. Remove the oil pressure gauge.

21. Apply liquid sealant to the oil pressure sending unit (or sealing plug) and install it.

22. Start the engine and check for oil leaks.

23. Reinstall the engine.



**OIL PRESSURE GAUGE,
SUN-MT37A
(Commercially available)**

**ADAPTER, 1/8 x 28 BSPT,
SUN-AT77AH
(Commercially available)**


NEW

TOOL ORDERING INFORMATION

This service bulletin shows the following tool:

- Special Tool:

Description	Tool Number	Honda Code
Oil Pump Alignment Tool	070PK-ZJ1A100	8318081

These tools are distinguished by the  special tool box icon and normally start with a "07" tool number. They are available through the American Honda Parts Department and ordered by using normal American Honda Parts ordering procedures.

- Commercially Available Tools:

Tool Number	Description
SUNAT77AH	Adapter, 1/8 x 28 BSPT
SUNMT37A	Oil Pressure Gauge

These tools are distinguished by the words (commercially available). They are **not** available through the American Honda Parts Department. Most commercially available tools shown in this bulletin can be ordered through the Honda Power Equipment Tool and Equipment program by calling (888) 424-6857. Refer to the catalog for a complete tool listing.

NEW

PARTS INFORMATION

Description	Qty	P/N	H/C
Oil pump cover assy.	1	15120-ZJ1-000	4209276
Crankcase cover gasket	1	11381-ZJ1-840	6223788

WARRANTY INFORMATION

In warranty: The normal warranty applies.


Out of warranty: Any repair performed after warranty expiration may be eligible for goodwill consideration. Contact Tech Line or your District Service Manager. You must request consideration, and receive a decision, before starting work.

VIN Information

VIN Prefix	Affected Serial Number Range	Model
GCAC	2000001 ~ 2060145	GX610K1
GCAD	2000001 ~ 2160012	GX620K1
GDABM	1000001 ~ 1001648	GX620K1
GCAM	1000001 ~ 1050042	GX670
GDACM	1000001 ~ 1010162	GX670
GJAC	2000001 ~ 2020045	GXV610K1
GJAD	2000001~ 2040294	GXV620K1
GJAH	1000001 ~ 1020001	GXV670

NEW

Be sure the warranty claim contains the following information:

<p> Dealers:</p> <ul style="list-style-type: none"> • Select <i>Service Bulletin</i> claim type. • Enter VIN information. • From the <i>Service Bulletin</i> drop down menu, select EN037 (Engine Service Bulletin #037) for appropriate model and repair.

<p>All others:</p> <p style="text-align: center;">Defect Code: 07406</p> <p style="text-align: center;">Labor Operation Number: 113200</p> <p style="text-align: center;">Flat Rate Time: 0.6</p> <p style="text-align: center;">Failed Part: 15120-ZJ1-000</p>
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