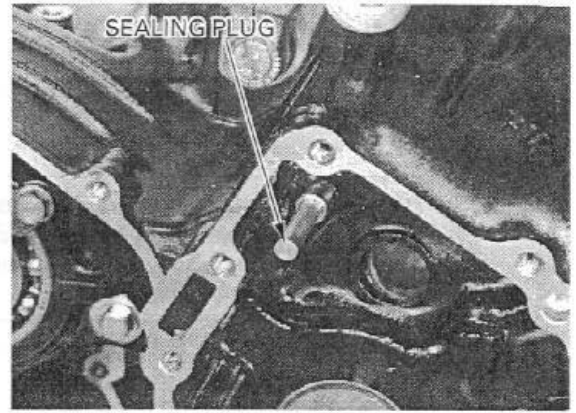


CRANKCASE SEPARATION

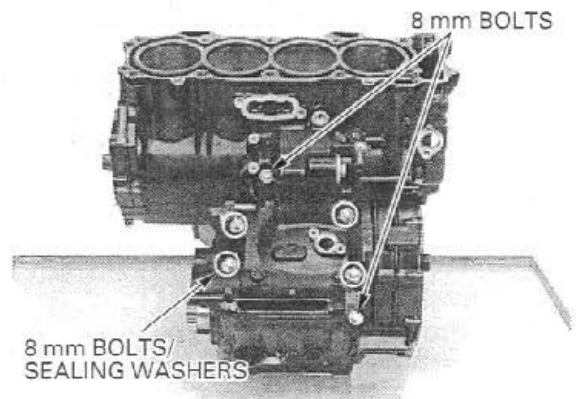
NOTE:

Refer to Service Information (page 11-1) for removal of necessary parts before separating the crankcase.

Remove the sealing plug and O ring.

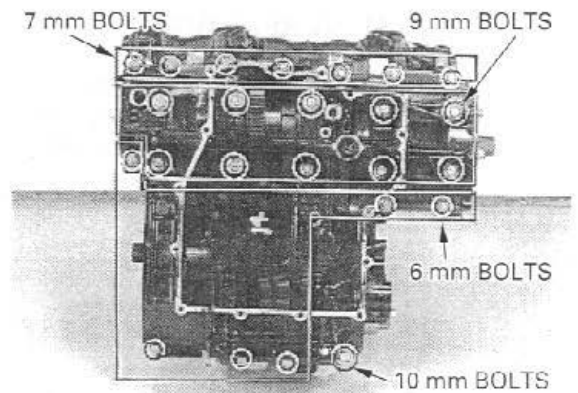


Remove the upper crankcase 8 mm bolts/sealing washers.

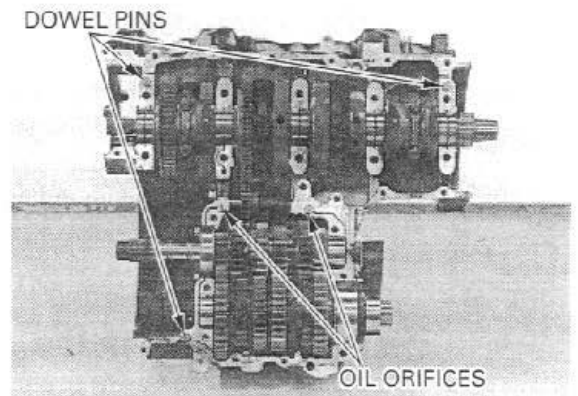


Remove the lower crankcase 6 mm bolts (six), 7 mm bolts (seven) and 10 mm bolt. Loosen the ten lower crankcase 9 mm bolts in a crisscross pattern in 2-3 steps, then remove the bolts and sealing washers.

Separate the lower crankcase from the upper crankcase.



Remove the dowel pins and oil orifices.



PISTON/CONNECTING ROD

PISTON/CONNECTING ROD REMOVAL

CAUTION:

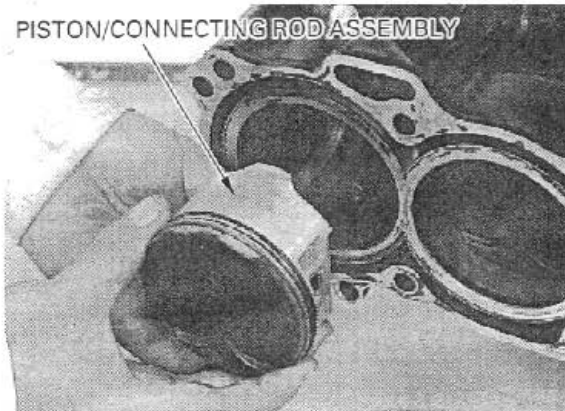
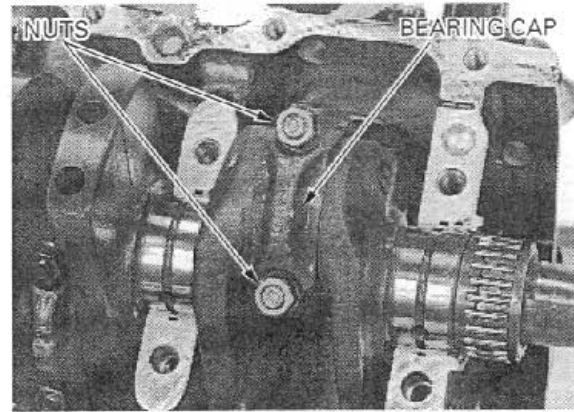
Do not interchange the bearing inserts. They must be installed in their original locations or the correct bearing oil clearance may not be obtained, resulting in engine damage.

NOTE:

Mark all parts during removal so they can be replaced in their original locations.

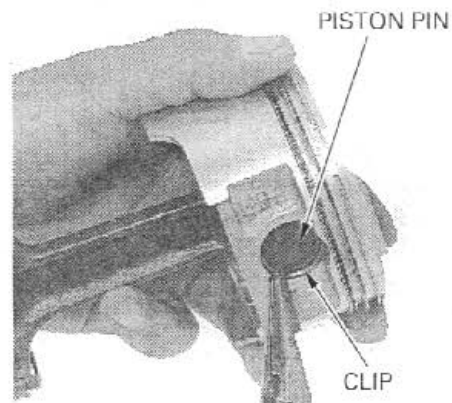
Remove the nuts and connecting rod bearing cap.

Remove the piston/connecting rod assembly from the top of the cylinder.



PISTON REMOVAL

Remove the piston pin clip with pliers.
Press the piston pin out of the piston and remove the piston from the connecting rod.

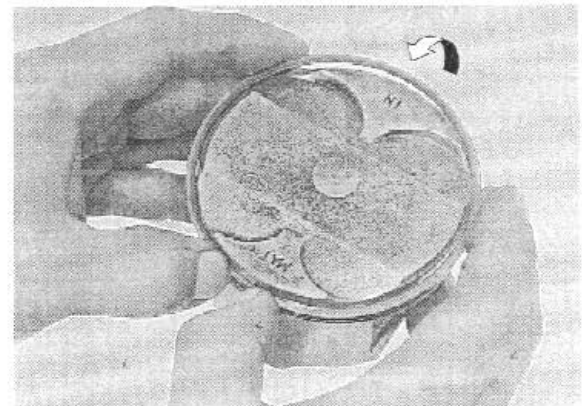


PISTON DISASSEMBLY

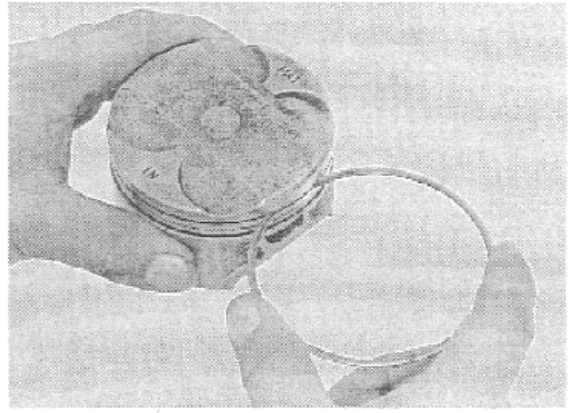
Remove the piston rings.

NOTE:

Do not damage the piston rings during removal.



Remove any carbon deposits from the piston ring grooves, using an old piston ring as shown.



PISTON INSPECTION

Temporarily install the piston rings to their proper position with the mark facing up.

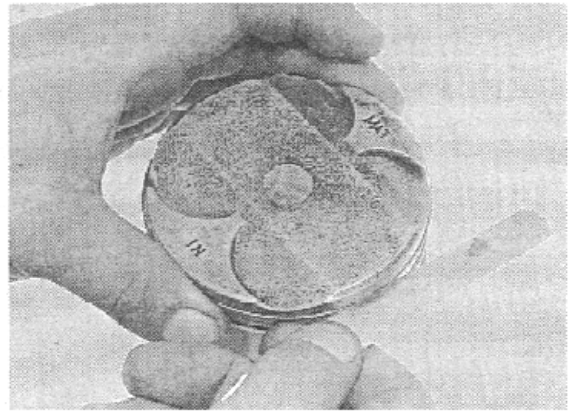
Measure the piston ring-to-ring groove clearance with the rings pushed into the grooves.

SERVICE LIMITS:

Top: 0.08 mm (0.003 in)

Second: 0.06 mm (0.002 in)

Inspect the piston for wear or damage.



Insert the piston ring squarely into the bottom of the cylinder and measure the ring end gap.

NOTE:

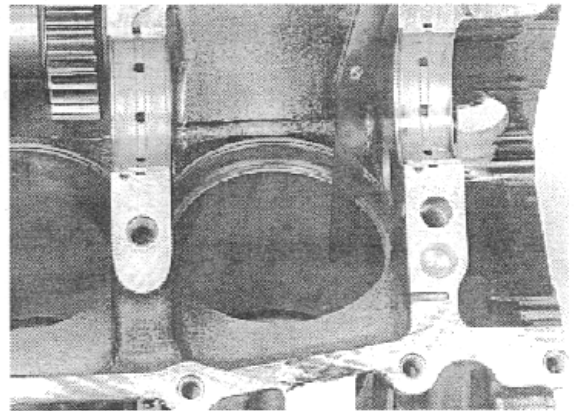
Push the rings into the cylinder with the top of the piston to be sure they are squarely in the cylinder.

SERVICE LIMITS:

Top: 0.5 mm (0.02 in)

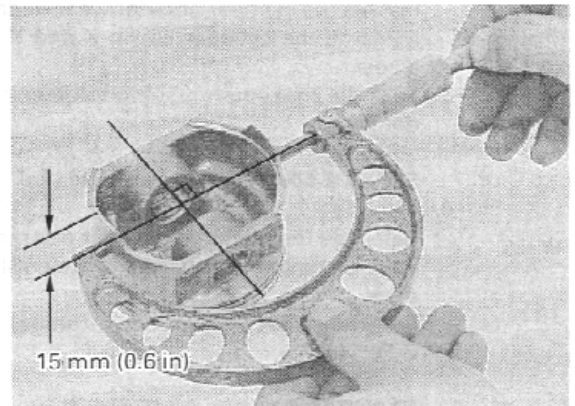
Second: 0.7 mm (0.03 in)

Oil (side rail): 1.0 mm (0.04 in)



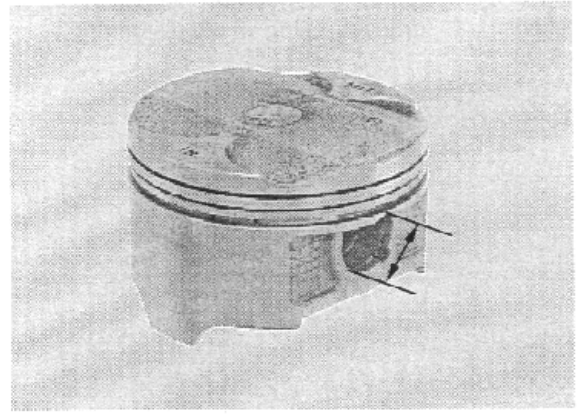
Measure the diameter of the piston at 15 mm (0.6 in) from the bottom and 90 degrees to the piston pin hole.

SERVICE LIMIT: 78.90 mm (3.106 in)



Measure the piston pin bore.

SERVICE LIMIT: 19.03 mm (0.749 in)

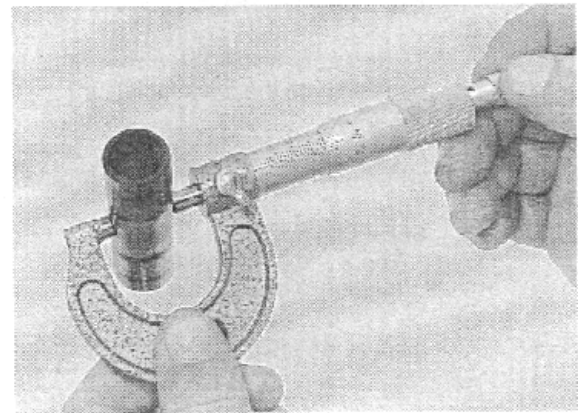


Measure the O.D. of the piston pin.

SERVICE LIMIT: 18.984 mm (0.7474 in)

Calculate the piston-to-piston pin clearance.

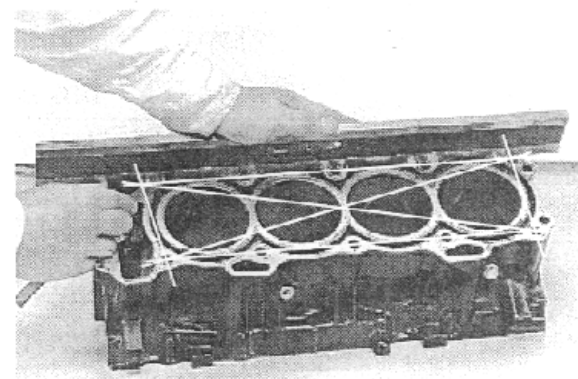
STANDARD: 0.002–0.014 mm (0.0001–0.0006 in)



CYLINDER INSPECTION

Inspect the top of the cylinder for warpage.

SERVICE LIMIT: 0.05 mm (0.002 in)

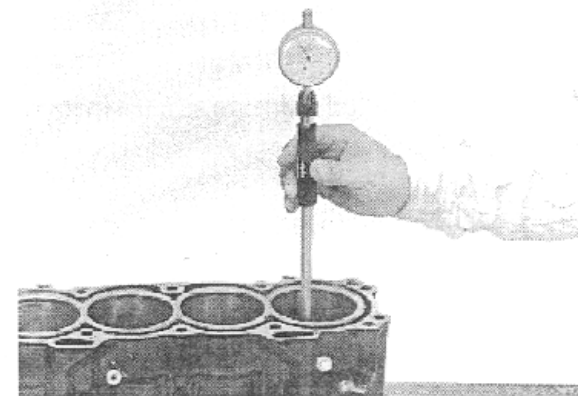


Inspect the cylinder bore for wear or damage.
Measure the cylinder I.D. in X and Y axis at three levels.
Take the maximum reading to determine the cylinder wear.

SERVICE LIMIT: 79.10 mm (3.114 in)

Calculate the piston-to-cylinder clearance.
Take a maximum reading to determine the clearance.
Refer to page 11-5 for measurement of the piston O.D.

STANDARD: 0.010–0.045 mm (0.0004–0.0018 in)



Calculate the taper and out of round at three levels in X and Y axis. Take the maximum reading to determine them.

SERVICE LIMITS:

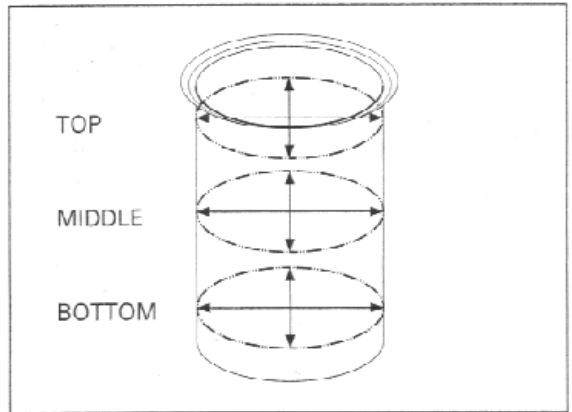
Taper: 0.10 mm (0.004 in)

Out of round: 0.10 mm (0.004 in)

The cylinder must be rebored and an oversize piston fitted if the service limits are exceeded.

The following oversize pistons are available:
0.50 mm (0.020 in)

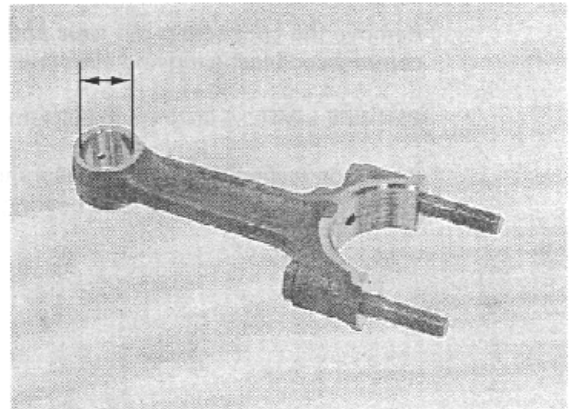
The piston to cylinder clearance for the oversize piston must be: 0.015–0.050 mm (0.0006–0.0020 in).



CONNECTING ROD INSPECTION

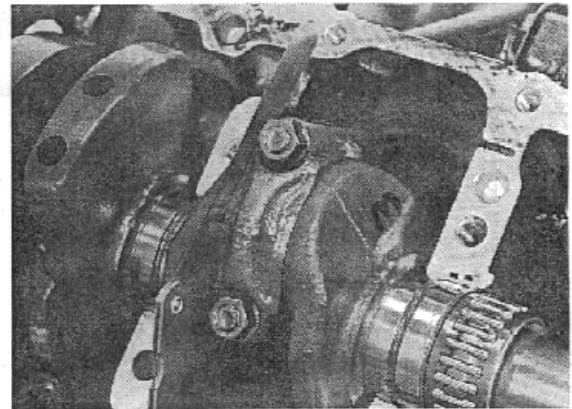
Measure the connecting rod small end I.D.

SERVICE LIMIT: 19.061 mm (0.7504 in)



Temporarily install the connecting rod to the crankshaft.
Install the bearing inserts and bearing cap, and tighten the bolts.
Measure the connecting rod side clearance.

SERVICE LIMIT: 0.30 mm (0.012 in)



CRANKPIN BEARING INSPECTION

Wipe all oil from the bearing inserts and crankpins.
Put a piece of plastigauge on each crankpin.

NOTE:

- Do not put the plastigauge over the oil hole in the crankpin.
- Do not rotate the crankshaft during inspection.

