CYLINDER/PISTON

GENERAL

- Be careful not to damage mating surfaces when removing the cylinder. Do not tap the cylinder too hard during removal.
- Take care not to damage the cylinder wall and piston.
- Clean all disassembled parts with clean solvent and dry them using compressed air before inspection.
- When removing the piston, clean carbon and sludge from the top of the cylinder.

TROUBLESHOOTING

Compression too low, hard starting or poor performance at low speed
- Worn, stuck or broken piston ring
- Worn or damaged cylinder and piston
- Bent connecting rod
- Cylinder head/valve problem

Compression too high, overheating or knocking
- Excessive carbon build-up on piston head or on combustion chamber

Excessive smoke
- Worn cylinder, piston or piston ring
- Improper installation of piston rings
- Scored or scratched piston or cylinder wall
- Cylinder head/valve problem

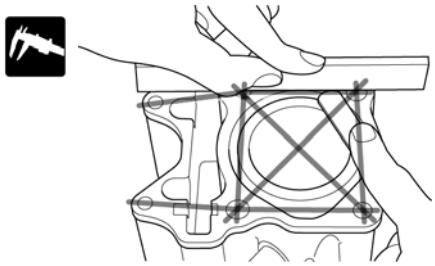
Abnormal noise
- Worn piston pin or piston pin hole
- Worn connecting rod small end
- Worn cylinder, piston or piston rings

Piston ring sticking/scuffing, bearing damage
- Clogged oil gallery or oil strainer screen
- Internal oil leak
- Not using recommended engine oil

CYLINDER/PISTON

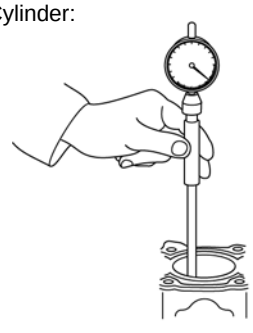
INSPECTION

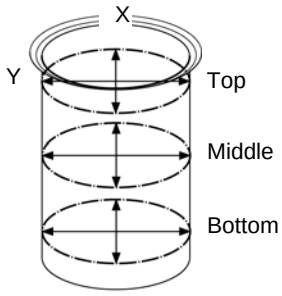
Cylinder:



Cylinder warpage
(using straight edge and feeler gauge)

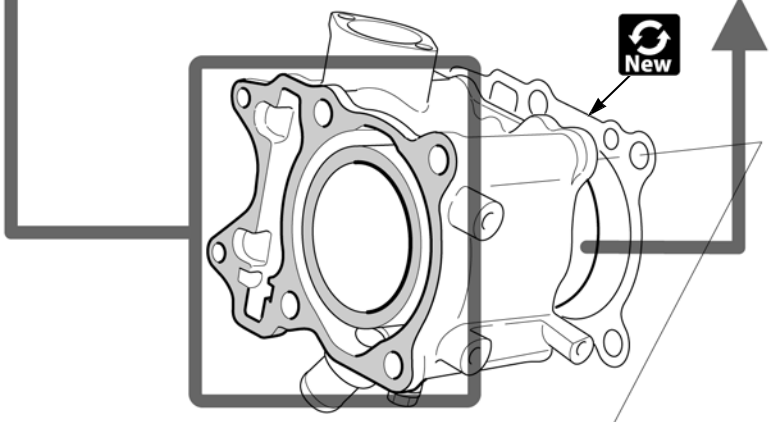
Cylinder:

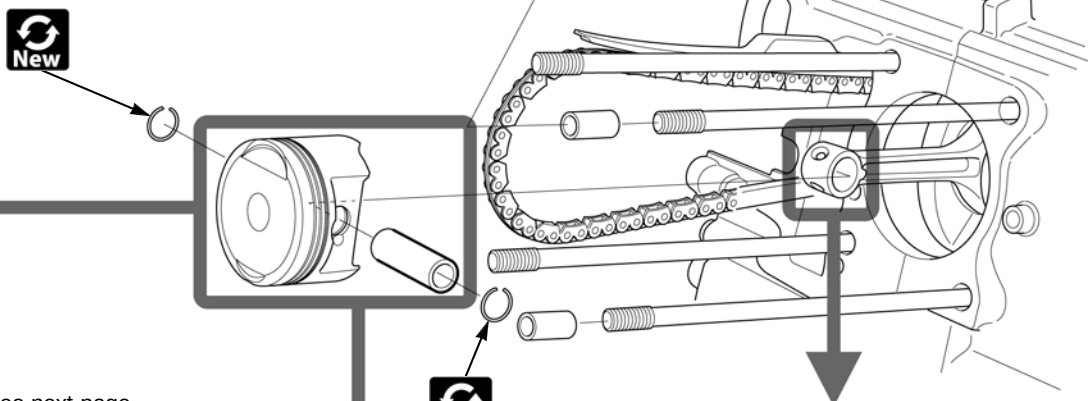




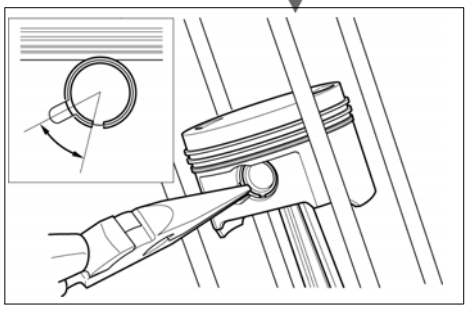
Cylinder I.D. (X and Y axis at three levels)

Cylinder bore for wear or damage

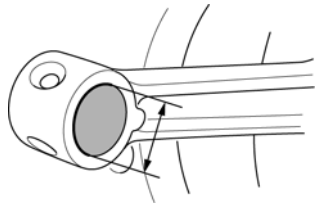




For inspection, see next page

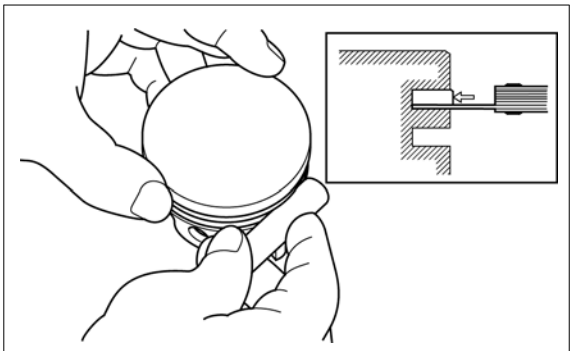


Connecting rod:



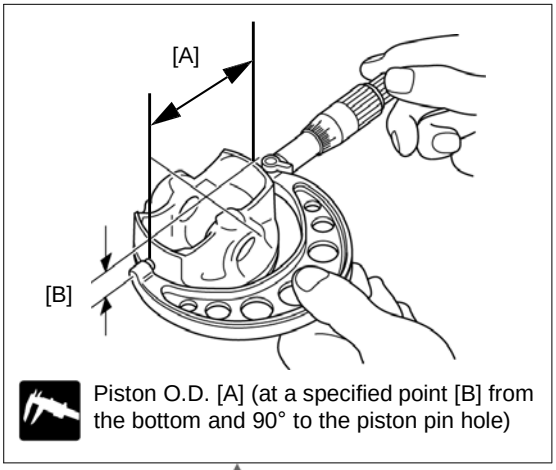
Connecting rod small end I.D.

Piston And Piston Pin:

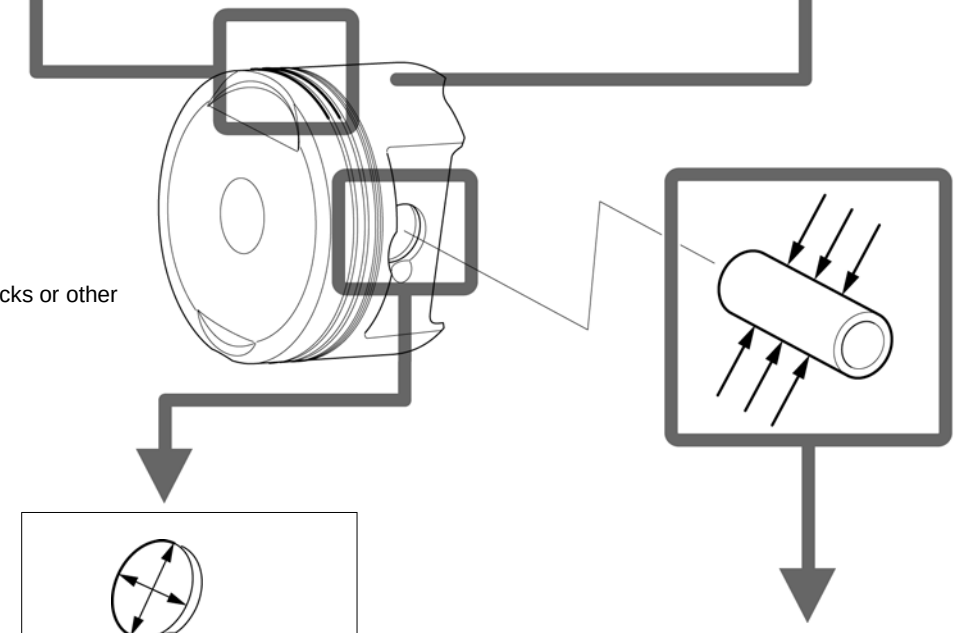


Piston ring-to-ring groove clearance

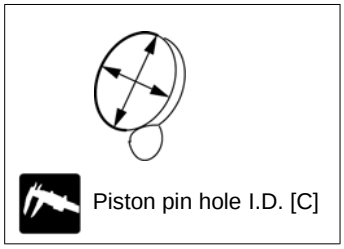
Ring grooves for excessive wear and carbon build-up



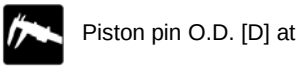
Piston O.D. [A] (at a specified point [B] from the bottom and 90° to the piston pin hole)



Piston for cracks or other damage



Piston pin hole I.D. [C]

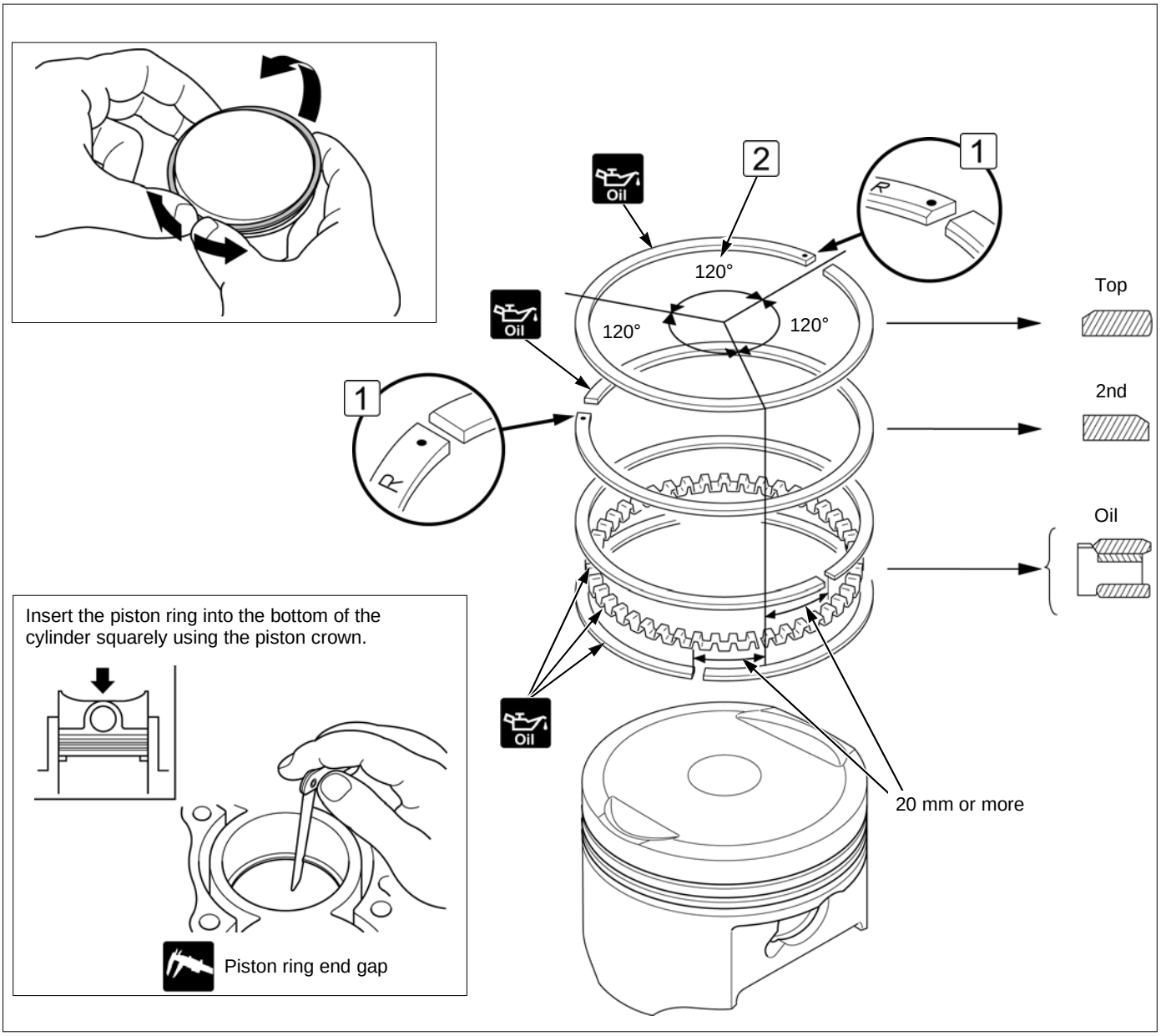


Piston pin O.D. [D] at three points

Cylinder-to-piston clearance = Cylinder I.D. – [A]

Piston-to-piston pin clearance = [C] – [D]

Piston Ring:



- Carefully install the piston rings into the piston ring grooves.
- [1] Markings facing up
- [2] Stagger the piston ring end gaps 120° apart from each other.