



Piston Rings

End Gap

1. Using a piston, push a new ring into the cylinder bore 15 – 20 mm (0.6 – 0.8 in) from the bottom.
2. Measure the piston ring end-gap with a feeler gauge:
 - If the gap is too small, check to see if you have the proper rings for your engine.
 - If the gap is too large, recheck the cylinder bore diameter against the wear limits on page 7-13. If the bore is over limit, the cylinder block must be rebored.

Piston Ring End-Gap:

Top Ring

Standard (New): 0.25 — 0.40 mm
(0.010 — 0.016 in)

Service Limit: 0.70 mm (0.028 in)

Second Ring

Standard (New): 0.40 — 0.55 mm
(0.016 — 0.022 in)

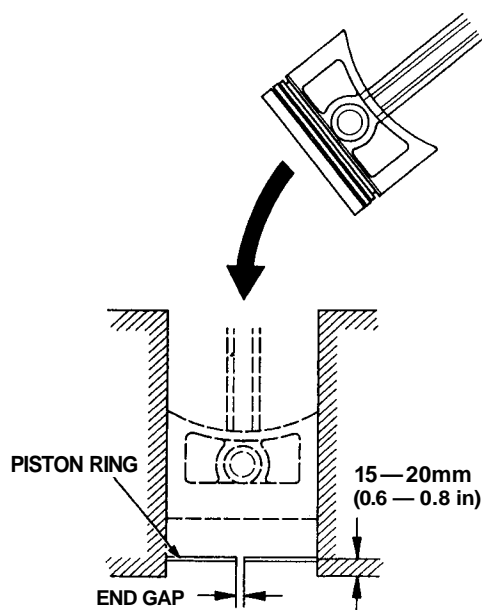
Service Limit: 0.85 mm (0.033 in)

Oil Ring

Standard (New): 0.20 — 0.70 mm
(0.008 — 0.028 in) *1

0.20 — 0.50 mm
(0.008 — 0.020 in) *2

Service Limit: 0.80 mm (0.031 in)



*1: RIKEN manufactured piston ring.

*2: TEIKOKU PISTON RING manufactured piston ring.

Replacement

1. Using a ring expander, remove old piston rings.
2. Clean all ring grooves thoroughly.

NOTE:

- Use a squared-off broken ring or ring groove cleaner with blade to fit piston grooves. File down blade if necessary.
- Compression ring grooves are 1.2 mm (0.05 in) wide and oil ring groove is 2.8 mm (0.11 in) wide.

CAUTION: Do not use a wire brush to clean ring lands, or cut ring lands deeper with cleaning tool.

NOTE: If piston is to be separated from connecting rod, do not install new rings yet.

3. Install new rings in proper sequence and position (page 7-18).

NOTE: Do not reuse old piston rings.

