



# 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 7-12. If the bore is over limit, the cylinder block must be rebored.

### Piston Ring End-Gap:

#### Top Ring

M/T:

Standard (New): 0.20 - 0.30 mm  
(0.008-0.012 in)

Service Limit: 0.50 mm (0.020 in)

A/T:

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

Service Limit: 0.60 mm (0.024 in)

#### Second Ring

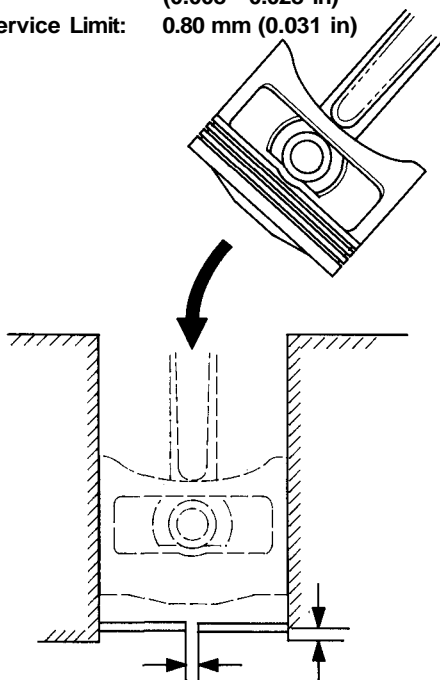
Standard (New): 0.35 - 0.50 mm  
(0.014-0.020 in)

Service Limit: 0.75 mm (0.03 in)

#### Oil Ring

Standard (New): 0.20 - 0.70 mm  
(0.008 - 0.028 in)

Service Limit: 0.80 mm (0.031 in)



## Replacement

1. Using a ring expander, remove the 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.
- Top and 2nd ring grooves are 1.2 mm (0.05 in) wide and the oil ring groove is M/T: 2.5 mm (0.10 in), A/T: 2.8 mm (0.11 in) wide.
- File down the blade if necessary.

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

3. Install new rings in the proper sequence and position (see page 7-16).

NOTE: Do not reuse old piston rings.

