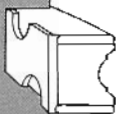
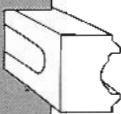


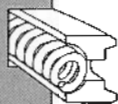
## OIL RINGS



Place expander in ring groove. Install lower steel section, cast iron separator and then upper steel section

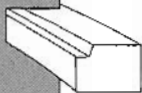


Install either side up.

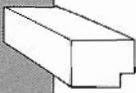


Place spring in groove and join ends with latch wire. Install ring over spring in groove making sure spring end is **NOT** at gap of ring.

## COMPRESSION RINGS



Install with inside groove up.



Install with outside groove down.



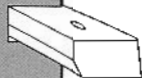
Install with dash mark or word "TOP" up.



Install with flat side down.



Install with inside bevel up.



Install with dash or dot mark up.

If springs are provided with compression rings, they should be installed first behind the rings.



Install with either side up.

1. Remove cylinder ridges before pistons are taken out.
2. Check for cylinder taper and out of round. Surface hone scuffed, scratched or rebored cylinders. Clean thoroughly with detergent and hot water; follow with 10W engine oil.
3. Remove carbon from the ring grooves.
4. Check the end clearance of one (1) new compression ring in the lower, unworn portion of each cylinder. The clearance should be no less than listed below:

<u>Ring Diameter</u>	<u>Minimum End Clearance</u>
Less than 3"	.007"
3" to 3-31/32"	.010"
4" to 4-31/32"	.013"
5" to 6-31/32"	.017"
7" to 8"	.023"

*(Rebored or honed cylinders up to and including .010" oversize, take standard rings.)*

5. Pistons with worn or collapsed skirts should be resized or replaced.
6. Check the top ring grooves for excessive wear.

**RECTANGULAR GROOVES:** If it is possible to insert a .006" feeler gauge between the top side of the ring and the groove, 1/16" into the groove, the top groove should be machined to accommodate a steel spacer above the ring, or the piston should be replaced.

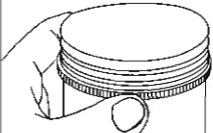

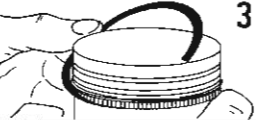
**KEYSTONE AND HALF-KEYSTONE GROOVES:** If it is possible to insert an .006" feeler gauge between the top side of the ring and the groove *while the ring face is held flush with the land*, the piston should be replaced.

7. Check pin fit and connecting rod alignment. Correct if necessary.
8. Check main and connecting rod bearing clearances with Plastigage and correct to manufacturer's specifications.
9. Dip each piston assembly in 30W or heavier engine oil before installing it in the cylinder.
10. Install **Perfect Circle** Valve Seals.



Do not install chrome plated rings in chrome plated cylinders.

### OIL RINGS

 <p>1</p>	 <p>2</p>	 <p>3</p>
<p>Place expander spacer in oil ring groove with ends of spacer above solid portion of groove bottom.</p>	<p>Holding ends of spacer butted, install steel rail at side of spacer. Start rail 2" left of ends of spacer and coil across ends and around into groove.</p>	<p>Install the other rail on the opposite side the spacer. Start 2" right of ends of the spacer. Make sure the ends of the spacer are not overlapped. <b>DO NOT CUT OFF ENDS OF SPACER.</b></p>

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