TOP RING
The top ring is a steel compression ring that has been gas nitrided so that it is compatible with Nikasil and cast iron bores. This scuff resistant gas nitrided ring allows it to operate at maximum efficiency without blemishing up the bore. The nitriding ensures extended life and protection under extreme conditions.

SECOND RING
The second ring is a cast iron with a taper underhook groove face. The THG ring acts as a wiper and pushes the oil back away from combustion. This type of ring allows you to run a lower tension oil ring.

OIL RING
The oil ring is made up of two gas nitride rails with a low-tension expander. Because of the miniflex vent design, there is less friction on the cylinder wall, which increases the performance and efficiency of the engine.

These ring sets are high strength and low tension, resulting in maximum sealing with minimum drag.
CP PISTON RING RECOMMENDATIONS

Failure to check ring gap can result in severe engine failure. The following end gap recommendations are general guidelines. The best ring gap for any particular engine and application varies. Increased clearance is generally needed for forced induction, nitrous, filled blocks, endurance racing and other extreme applications. The final end gap suitable for the engine is the full responsibility of the engine builder. If you have any questions, please call 949-567-9000 for technical support.

**RING GAP MEASURING PROCEDURES**

1. A torque plate should be installed on engine (if applicable) and torqued to same specifications as machine shop.
2. Piston ring should be below and square to the deck.
3. Measure ring end gap with a feeler gauge.

**Ring End Gap Chart**

<table>
<thead>
<tr>
<th>APPLICATION</th>
<th>TOP RING</th>
<th>SECOND RING</th>
<th>OIL RING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street / Hi Performance</td>
<td>Bore x .0045&quot;</td>
<td>.004&quot; - .008&quot; Bigger than top ring</td>
<td>Min .015&quot; Do not file</td>
</tr>
<tr>
<td>Drag Racing</td>
<td>Bore x .005&quot;</td>
<td>.004&quot; - .008&quot; Bigger than top ring</td>
<td>Min .015&quot; Do not file</td>
</tr>
<tr>
<td>Road Racing</td>
<td>Bore x .005&quot;</td>
<td>.004&quot; - .008&quot; Bigger than top ring</td>
<td>Min .015&quot; Do not file</td>
</tr>
<tr>
<td>Nitrous/Turbo</td>
<td>Bore x .0055&quot;</td>
<td>.004&quot; - .008&quot; Bigger than top ring</td>
<td>Min .015&quot; Do not file</td>
</tr>
<tr>
<td>Supercharged</td>
<td>Bore x .0055&quot;</td>
<td>.004&quot; - .008&quot; Bigger than top ring</td>
<td>Min .015&quot; Do not file</td>
</tr>
</tbody>
</table>

**Ductile Moly Rings**

To identify a moly top ring look for a silver-grey plated finish with black phosphated top and bottom surfaces. If there is a dot on the flat side of the ring, make sure it faces up. Rough hone cylinders to within .003, intermediate hone to within .0005 with 220 grit and final hone with a 400 grit and a 10 to 12 RA finish with a 20º to 22º crosshatch.

**Chrome Rings**

To identify a chrome top ring the face will have chrome plating, the top and bottom of the ring will be a reddish-brown. Chrome on any of the rings is not advisable with nikasil bores. These instructions must be followed for maximum ring seal. A torque plate must be used unless the bolt holes are not part of the cylinder. The first stone is a 525 (220 grit) stone, honed until there is .001" left from final bore. The bore must be round to .0002", checked 360 degrees from the bottom to the top of the bore. Then switch to a 625 (280 grit) stone, 50% load until .0002" is left from final bore. Then use the 625 stone at 20% load to final bore size.

**ALL RINGS**

The honing must be done slow to minimize heat build-up. No hand honing. Final bore needs to be less than plus or minus .0002" out of round, checked 360 degrees around the bore from the bottom to the top of the cylinder. This should be checked with a dial bore gauge. The expertise of your machine shop is critical to the proper finish on your block bore. When you receive the block back from the machine shop it will appear clean, the block still needs to be cleaned. There could be material trapped in the honing grooves of the block that are not visible. Failure to clean the block could lead to premature ring wear and blow-by.

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