

BORE AND HONE, GUIDING INSTRUCTIONS

SPONSORED BY WISECO PISTON CO.

Cross Hatch Pattern

Maintaining the proper cross hatch angle is important for two reasons:

1) *Oil retention on the cylinder wall.* 2) *The rate of ring rotation.*

Excessively shallow cross hatch angles can hinder or slow down the necessary ring rotation that allows dissipation of heat. It can also leave too much oil on the cylinder wall allowing the rings to skate over the surface leading to excess oil consumption. Too steep of a cross hatch angle may not provide adequate oil retention and can result in dry starts and premature ring wear. A steep pattern angle can also create excessive ring rotation that will accelerate ring and piston ring groove wear.

How to Measure Cross Hatch Angle



Surface Finish

Sunnen® CK® & CV®	Stoner Grit Size	Approx. µRa
EHU-412	150	47-52
EHN-512	220	40-48
JHU-525	220	30-36
JHU-623	280	20-25
JHU-818	400	7-14
C30-C03-81	600	3-5

SAE Specifications

Cast Iron / CK & CV 220 Grit	Moly-Filled 280 Grit	Moly-Filled 400 Grit
70 Grit to $-.003''$	70 Grit to $-.003''$	70 Grit to $-.003''$
220 Grit to size	220 Grit to $-.001''$	220 Grit to $-.0015''$
	280 Grit to size	280 Grit to $-.0005''$
		400 Grit to size

Boring & Honing Instructions

Adherence to proper boring and honing procedure is essential to overall ring performance. To ensure that the bore finish will retain an oil film, it is vital that the guidelines listed below are followed for cast iron bores.

- Install and torque main bearing caps
- Use torque plates. This simulates the distortion that occurs when the cylinder head is mounted to the block. (hint: After boring and honing, leave the torque plates in place and fit/gap the piston rings to their respective cylinders.)

• Allow for a minimum of $.003''$ excess material for use as honing stock.

• Intermediate hone to within $.0005''$ of finished size with #220-#280 grit stones. (With diamond stones use #280-#400 grit.)

• Finish hone with #400 grit stone or higher. (Use #600 grit diamond stone. If using hand operated equipment, set drill speed between 200-450 rpm.)

• Finish with an appropriate stone or tool to achieve desired plateau finish (see below).

Oil Rails & Rail Supports

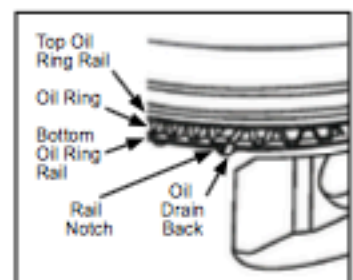
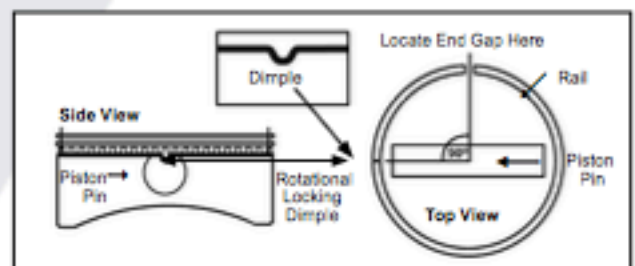
Wiseco oil rail supports feature a special dimple to prevent rotation of the oil rail. This dimple should be positioned directly in line with the piston pin. Keep the rail support gap 90 degrees from the pin bore opening.

When installed in a horizontally opposed engine, rail gaps should be installed as shown to the right.

The rail tab must be installed below the oil ring expander with the tab facing toward the bottom of the ring groove extending into the split oil drain back hole.

Use caution to not install the rail tab into the piston pin oil hole. The gap should be situated to the top of the engine to block oil migration at the bottom of the cylinders.

Ring Sets containing Oil Rails with a tab all end with part #VF.



THE STARTING GRID

YOUR ENGINE MOVES US!