Performance Piston Ring Fitment

The AERA Technical Committee offers the following information on fitting piston rings for performance engines. This information is also supplied and supported by the Mahle-Motorsports company.

PREPARING THE Piston RINGS:
Drop in ring sets typically require no adjustment to end gaps, but MAHLE recommends that the rings be checked for minimum end gap. File fit rings require individual gap adjustments to the top and second rings. This allows you to set the ring gap precisely to your exact needs. The following chart gives suggested minimum ring end gaps for various applications. If running aggressive boost or nitrous applications, it may be necessary to increase end gaps.

PROPER RING GAP MEASUREMENT: (See chart below)
A torque plate is highly recommended to insure correct measurements. The ring should be square in the bore, 1 inch down from the deck. Measure the end gap with a feeler gauge or other measuring device.

Application	Top Ring	Second Ring	Oil Ring Rail
High Performance Street - NA	Bore x 0.0045"	Bore x 0.0040"	Min 0.015"
Circle Track, Drag Racing - NA	Bore x 0.0050"	Bore x 0.0060"	Min 0.015"
Nitrous up to 200HP (25HP/cyl)	Bore x 0.0060"	Bore x 0.0050"	Min 0.015"
Nitrous over 200HP (25HP/cyl)	Bore x 0.0070"	Bore x 0.0070"	Min 0.015"
Turbo/Supercharged up to 15 lbs	Bore x 0.0060"	Bore x 0.0050"	Min 0.015"
Turbo/Supercharged over 15 lbs	Bore x 0.0070"	Bore x 0.0070"	Min 0.015"
Diesel - Turbocharged	Bore x 0.0060"	Bore x 0.0055"	Min 0.015"

OIL CONTROL RING TENSION: It is highly recommended that all wet sump or aluminum block applications use standard tension. Standard tension (3 mm) expander sets are available to supplement the “ML-043” sets which are low tension.

PROPER RING FILING:
The ring gap should be filed using the proper ring gap filing tool. Ring gap should only be filed in an inward direction and square to the ring sides.

PROPER RING ALIGNMENT (See Figure 1)

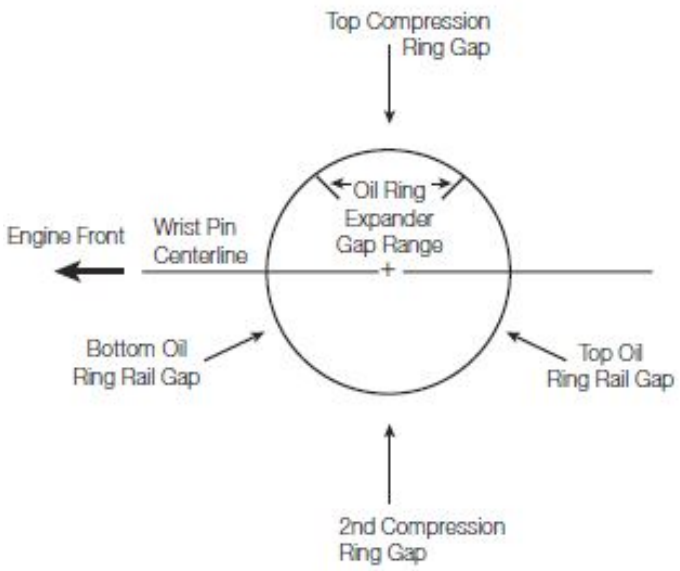

Figure 1. Suggested Ring Gap Alignment

Due to the nature of performance applications, this information should not be considered absolute. Final decisions concerning the installation and use of these products are ultimately the responsibility of the customer, and the customer only.

Warning! Too tight piston ring end-gap may cause engine damage!