

FORD XR-6 PISTON INSTALLATION INSTRUCTIONS

Important - Before balancing, please check to make sure that you have the correct components. Used or altered parts are non-returnable.

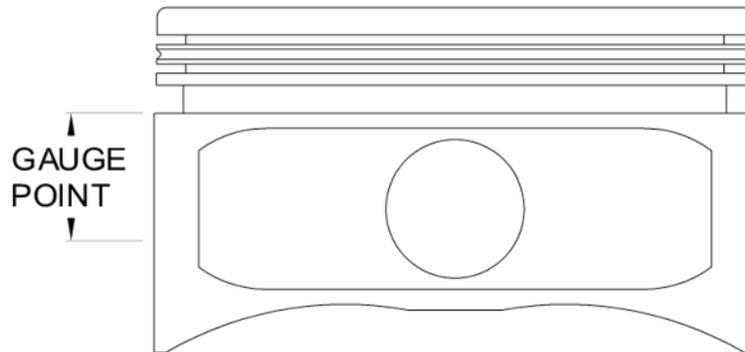
PISTON TO CYLINDER WALL CLEARANCE

Although piston to wall clearance preferences vary somewhat among engine builders, we recommend the following:

	<u>Gauge Point</u>	<u>Uncoated Skirt</u>	<u>Coated Skirt</u>
	<u>Distance</u>		
Ford XR-6	.850"	-----	.0030"

Piston diameter must be measured at a gauge point, which is measured from the bottom of the oil ring. (See Fig. 1) Clearance is built into the piston based upon the finished bore size of the cylinder.

Fig. 1



PISTON WRIST PIN OFFSET

Some Manley pistons are designed with offset wrist pins to reduce connecting rod angularity; such as the Chevrolet LS-1, Ford Modular 4.6L, 5.4L, Chrysler Hemi 5.7L and Sport Compact pistons. Please note the arrow on the top of each piston. This arrow **MUST** point to the front of the block. Also certain applications are marked with either a "D" or a "P". If marked with a "D", install on the driver side of the motor and a "P" is installed on the passenger side of the motor.

SPIRAL LOCKS AND ROUND WIRE LOCKS

Manley pistons are designed to retain the wrist pin with either single spiral locks (2 per piston), dual spiral locks (4 per piston), or round wire locks (2 per piston); depending on the application. Proper installation of locks is critical!

SPORT COMPACT PISTONS

We recommend using a correctly sized tapered ring compressor tool during piston/ring installation.

Please consult a professional engine builder or contact Manley Performance if you have any questions.

RECOMMENDED RINGS

DUE TO DISCREPANCIES IN RADIAL DEPTHS OF PISTON RINGS IN THE FIELD FROM VARIOUS MANUFACTURERS, WE ADVISE USING MANLEY PERFORMANCE PISTON RINGS ON ALL MANLEY PERFORMANCE PISTONS ENSURING MAXIMUM PERFORMANCE.

FORD XR-6 PISTON RING INSTALLATION INSTRUCTIONS

AP PREMIUM STEEL RING SETS GENERAL GAPPING RECOMMENDATIONS

APPLICATION	FUEL	TOP RING	SECOND RING	OIL RING RAIL
Street, Strip, Circle	Gas, Alky, E85	Bore x .0045"	Bore x .0045"	Min. .015"
Nitrous up to 150HP	Gas, Alky, E85	Bore x .0055"	Bore x .0055"	Min. .015"
Nitrous 150-350HP	Gas, Alky, E85	Bore x .0065"	Bore x .0065"	Min. .015"
Nitrous 350HP+	Gas, Alky, E85	Bore x .008"	Bore x .008"	Min. .015"
Mild Boost up to 15lb	Gas, Alky, E85	Bore x .0055"	Bore x .0055"	Min. .015"
Medium Boost 15-30lb	Gas, Alky, E85	Bore x .007"	Bore x .007"	Min. .015"
High Boost 30lb+	Gas, Alky, E85	Bore x .008"	Bore x .008"	Min. .015"

Disclaimer: These are general gapping recommendations and are not to be considered absolute. State of engine tune, operating environment and personal experience must also be considered.

1. File fit ring sets require filing of the top and 2nd rings to achieve the correct end gap. To properly measure the ring gap, the ring should be square in the bore 1" down from the deck. Measure the ring end gap with a feeler gauge or equivalent device. Calculate the recommended ring end gap from the chart above. (Bore size measured in inches)

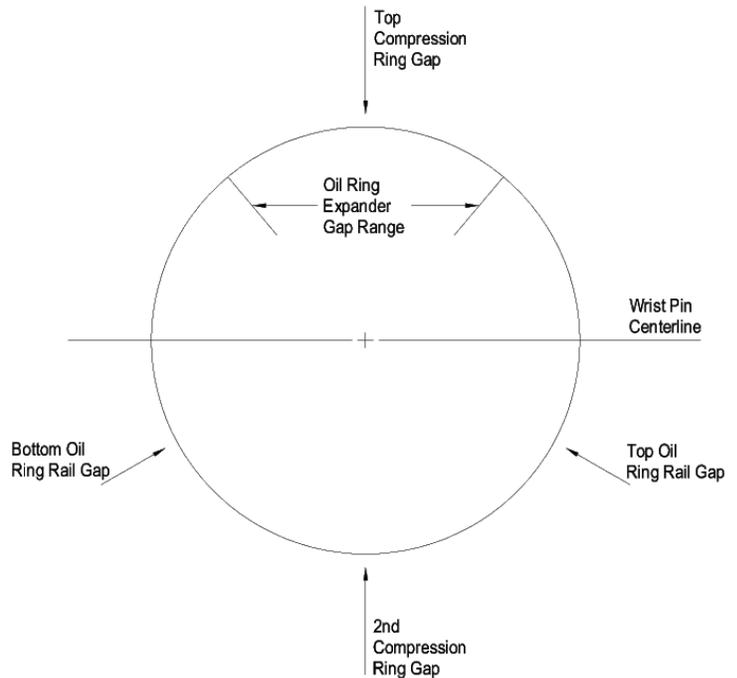
2. A proper ring gap filing tool must be used. Ring filing should be done in an inward direction and square to the sides of the ring. Must de-burr all edges after filing.

3. Correct ring installation is critical. The top ring will have a shiny gray edge. When the top and 2nd ring has a dot, install dot side up. Unmarked top rings with an inner bevel install with bevel up. Unmarked 2nd rings with inner bevel install with bevel down. Narrow rings (1.0/1.2mm) that aren't marked or beveled can be installed with either side up. Do not overlap the ends of the oil ring expander. See orientation diagram.

4. Ring to piston groove back clearance should be a minimum of .005" deeper than the radial wall dimension of the piston ring. The piston ring should not stick out of the groove by any amount. Ring groove side clearance should be a minimum of .0015" to a maximum of .0030".

5. When included, the oil rail supports are installed on the bottom of the oil ring groove underneath the oil rail. The oil rail supports feature a special protruding dimple

to prevent rotation of the oil rail support and the protruding dimple should be installed facing the bottom of the piston. This dimple should be positioned directly in line with the piston pin. Keep the oil rail support gap 90° from the piston pin bore



Ring Seating

When first starting your engine to ensure proper ring seating, do not allow the engine to idle for long periods at a time. It is a good idea to mildly load the engine as soon as you can. Highway driving is a good way to properly seat the rings quickly. Do not idle the engine as idling does not break in any engine. Manley DOES NOT recommend the use of synthetic oils during break-in. After 2000-3000 miles on the street, or one night racing on the track, the rings should be adequately seated so that any oil you prefer can then be used.

Engine Preparation - Iron Cylinders

Finish hone cylinder walls with torque plates installed if available. Recommended hone grit specification: moly-face or cast iron top ring 280-320 grit. Chrome face top ring: 220-280 grit. Finished hone with a 22-24 degree cross-hatch pattern off horizontal axis, resulting in a 44-46 degree included angle. For factory OEM honed blocks, we recommend a flex hone with 240-320 grit. This won't alter bore size and creates a better surface finish for performance ring sets.