

MMX Drop-In Piston & Rod

Modern Muscle Performance

Installation Instructions





MODERN MUSCLE
PERFORMANCE GROUP

340 Colonel Lee Road
Martinsville, VA 24112
Phone: 276-666-16934

After completely disassembling your engine, keep your engine covered to prevent any dirt, dust, or debris from getting inside the engine.

CLEAN THE CYLINDER WALLS.

A ball hone is a very useful tool for drop in piston installs. MMX recommends Brush Research 320 grit flex hones.

PROPERLY GAP THE RINGS.

Using a ring filer (NOT A GRINDER) carefully file the proper ring end gap on both the top and second ring. Ring end gaps for boosted and nitrous engines are .028 TOP, and .028 2ND. The oil ring rail must have a minimum of .015 gap. Naturally aspirated applications use .022 TOP and .022 2ND for your ring end gaps. Pay attention and setup your ring filer to ensure that the RING END GAP IS SQUARE WITH THE BORE. This will prevent V shaped ring end gaps!

MEASURE ROD BEARING CLEARANCE!

This is extremely important! Using a dial bore gauge and a micrometer, Verify you have NO LESS THAN .0015 OIL CLEARANCE, AND NO MORE THAN .0025 OIL CLEARANCE ON THE ROD BEARINGS. Failure to follow these directions or check bearing clearance CAN RESULT IN IMMEDIATE ENGINE FAILURE!!! At the very minimum, a plastigauge should be used to verify proper rod bearing clearance.

CLEAN THE CONNECTING RODS!

As they come out of the package they are NOT READY TO INSTALL! Parts washer solvent should be used to clean the connecting rods before assembly. This will remove any oil or debris on the connecting rod.

CLEAN THE PISTONS!!!

As they ship from Mahle, they are NOT READY TO INSTALL!! You should thoroughly clean the pistons with hot soapy water to remove any dust or debris before installing them.

INSTALL ONE PISTON PIN WIRE LOCK.

Work the wire lock into its groove in the piston. When you are finished the "Gap" in the wire lock should be pointing down (if the top of the piston is facing up).

INSTALL THE PISTONS ON THE RODS.

PAY ATTENTION. THERE IS ONLY ONE DIRECTION THAT THE CONNECTING ROD GOES ON THE PISTON. When holding the piston in your hand, with the intake valve relief pointing up (away from you) the large chamfer on the big end of the connecting rod should face to the LEFT. This will properly orient the connecting rod when installing the drop in pistons and rods into the engine.



MODERN MUSCLE
PERFORMANCE GROUP

340 Colonel Lee Road
Martinsville, VA 24112
Phone: 276-666-16934

INSTALL THE 2ND WIRE LOCK.

Carefully install the wire lock onto its groove to finish installing the pistons on to the rods. BE SURE BOTH WIRE LOCKS ARE FULLY SEATED INTO THEIR GROOVE BEFORE CONTINUING.

INSTALL THE ROD BEARINGS INTO THE CONNECTING ROD.

If you opted for the premium rod bearing upgrade, you will receive one HX and one H bearing set. PAY ATTENTION. In each box, one rod bearing will be marked "UPPER" and one "LOWER" The LOWER bearing will go into the rod cap side, while the UPPER bearing will go on the connecting rod side. PLACE ONE H BEARING AND ONE HX BEARING IN EACH CONNECTING ROD FOR PROPER BEARING CLEARANCE. ALSO BE SURE TO VERIFY UPPER AND LOWER BEARING HALVES ARE IN THE CORRECT PLACES

INSTALL THE RINGS ONTO THE PISTONS.

Be sure that the "Dot" on the second ring is facing upwards, and the "M" on the Top ring is facing upwards.

DROP THOSE PISTONS IN!

Using a ring compressor, carefully install the pistons and rods into the engine. Pay attention that the chamfer on the connecting rod is facing outwards (The two non chamfered flat sides of the rod should be facing each other for proper rod orientation).

Torque the rod bolts. Drop in rods use a torque value of 30 ft/lbs+60 Degrees. If you do not have a torque angle gauge, 90 foot pounds always gets the bolts within their proper rod bolt stretch specifications. Checking rod bolt stretch is always a good idea to verify you have not over torqued the rod bolt.

CHECK ROD SIDE CLEARANCE.

Rod side clearance of .008-.018 is acceptable for a performance engine build.

DOUBLE CHECK EVERYTHING!!!!

Verify all rod bolts are properly torqued, Large valve relief's on the pistons are facing UP, Connecting rod is on the piston in the the correct orientation, etc. IT IS THE RESPONSIBILITY OF THE PERSON ASSEMBLING TO FOLLOW THESE DIRECTIONS AND VERIFY ALL MEASUREMENTS. Keep in mind, you are assembling a race engine. Use common sense. If something doesn't look right or feel right, it probably isn't. Please give us a call before you ASSUME anything.

Please email byron@modernmuscleperformance.com with any questions regarding drop in piston and rod installs. 276-666-1934