

PARTS ENCLOSED DO NOT DISCARD!

POWROLL BORE KIT INSTALLATION

Model _____

Kit Number _____

Kit Displacement _____

Compression Ratio _____

Piston Size _____

KIT REQUIREMENTS

BORING

RE-SLEEVEING

CASE (OR OTHER) MACHINING

WORKS ONLY WITH POWROLL STROKER

Piston to Cylinder Clearance _____

Ring End Gap _____ Or More

FUEL REQUIREMENTS

Rejetting Premium Pump Gas 100+ Octane 108+ Octane

Please read and understand this booklet before beginning your project.

Your Powroll kit requires professional quality boring and installation to work properly. This kit is designed to work with like-new stock parts, and/or other Powroll components. Problems can arise due to variations in parts, worn parts, or use of other aftermarket parts. Carefully check fit and clearance during installation to avoid problems.

More detailed information on the machining processes required for this kit are located on our website in the Tech section.

If you have any questions about these parts or instructions, please contact us.

POWROLL
www.powroll.com
PO Box 920 Redmond, OR 97756
(541) 923-1290

Keep this booklet with your bike. It includes information needed for ordering parts or rebuilding the engine.

ENGINE DISASSEMBLY

After complete disassembly, remove all gasket material and dowel pins. Carefully clean all mating surfaces. Do not sand or file the gasket surfaces. Visually inspect the cylinder to see it is in good condition, without cracks or other flaws, before proceeding with boring or resleeving.

ENGINE ASSEMBLY

CLEAN PARTS

Wash all parts in solvent, then hot soapy water before assembly.

Clean the cylinder just prior to installation. Use hot soapy water, blow dry, or dry in oven at low temp for 1/2 hour. Using a clean, white, lint-free cloth with a small amount of engine oil, wipe the cylinder bore, keep using a clean area of the cloth, wiping until it comes away with no residue.

CHECK PISTON PIN END PLAY

Oil pin liberally. Before installing onto piston, test for correct piston pin end clearance. Lateral pin movement shouldn't exceed .040" between clip grooves or TPR (Teflon Pin Retainer).

RING END GAP

If a machine shop bored your cylinder, rings may already be gapped.

Ring ends must usually be filed before installation, see booklet cover for sizing information. If end gap is not listed, gap using this formula: .0035" x Bore Size (in inches).

Compression & Scraper Rings, One Piece Oil Rings: Position each ring squarely in the cylinder (use the piston to push the rings into the cylinder from the bottom). Using a feeler gauge, measure the gap. File rings to the end gap listed. A little excess gap is not critical – insufficient gap is.

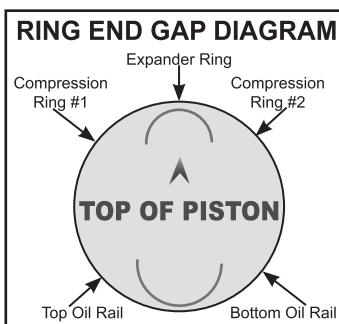
Three Piece Oil Rings: Center (corrugated) piece will not need to be gapped. Check and file rails in the same manner as the compression and scraper rings.

RING INSTALLATION

Many ring sets contain a high performance oil control ring. We recommend using a quality ring compressor to avoid damage to the piston, ring, or cylinder during installation.

Install ring end gaps according to diagram.

1. Place Oil Ring Expander (wavy shaped ring segment) into the oil ring groove with the butted tips of the expander facing the exhaust side of the piston. Be sure tips of the expander are visible and properly butted (see below). Overlap of Oil Ring Expander tips will cause severe smoking and possible engine damage.



2. Oil Rail Rings can be installed either side up. One rail ring below oil expander ring and one above. Locate rail end gap according to diagram.

3. Once rails are installed, be sure the expander tips are still butted and not overlapped.

4. Middle (scraper) ring: Middle ring can be either silver or black. Markings face up.

5. Top (Compression) ring. Usually silver faced. Markings face up. If no markings are evident, ring can be installed with either side facing up.

PISTON INSTALLATION

Pistons have one of the following markings on the top of the piston indicating direction of installation:

➔ Faces exhaust

IN Faces Intake

No Marking Install with larger pocket towards intake (Only if no other markings are visible).

Install piston in cylinder. Rotate crank until piston arrives at TDC. Piston deck area should not protrude above top of cylinder. Make sure piston also clears the crankshaft at BDC.

CLEARANCE CHECK

For high compression pistons, or if you are installing components from various manufacturers, it is HIGHLY RECOMMENDED to check clearance by claying the top of the piston. MINIMUM valve to piston clearances are .040" - .060" Intake, and .060" - .080" Exhaust. Minimum piston to head clearance is .040".

Torque head bolts to OEM specs. Do not over-torque. Re-check head bolt torque after several hours.

Before attempting to start the engine, slowly rotate crank by hand through a complete firing cycle. Carefully listen and feel for any interference.

Check that all timing, valve and cam chain adjustments are correct. Re-jet the carburetor, then begin break-in as outlined in the "General Assembly Tips" brochure.

JETTING

See Powroll "Jetting Recommendations" flier.

Powroll
Phone (541) 923-1290 Fax (541) 923-5637
Email mail@powroll.com
PO Box 920 Redmond OR 97756
www.powroll.com