

Cylinder Preparation

Cast Iron Sleeved Cylinders

To ensure proper ring seal, it is necessary to hone the cylinder with a rigid or brush hone. DO NOT install a new piston without honing the cylinder to break the glaze. Finish hone with a 280 grit. Crosshatch is necessary to ensure proper ring seal and adequate lubrication.

If the cylinder is in good condition, simply honing the cylinder may be enough to restore the bore to an acceptable condition. However in some cases, boring may be necessary to insure the cylinder bore is within the tolerances outlined in the service manual.

Plated Cylinders

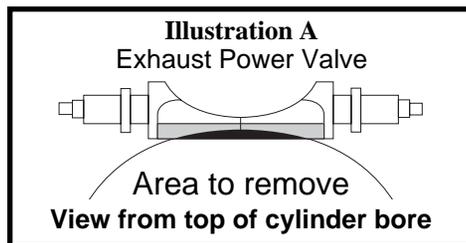
Includes nickel ceramic coatings (Nikasil), chrome, Electrofusion, and boron composite. If the plated cylinder is in good condition, honing may not be necessary. If deglazing is necessary, DO NOT use a ball hone. Use a rigid or brush type diamond hone. Plated cylinders cannot be bored oversize without replating or resleeving.

Any time a cylinder is bored or honed, all ports must be chamfered. The top of the cylinder should be deburred, and the bottom should be generously chamfered for ease of piston and ring installation. When boring a cylinder with an exhaust bridge, the face of the bridge must be relieved .002"-.004" to allow for bridge expansion. *Without proper bridge clearance, engine damage could occur.*

IMPORTANT: After honing, the cylinder must be washed with warm soapy water to remove all honing grit. Be sure to wash away any grit that may have traveled into the transfer and exhaust ports during honing. The cylinder is NOT clean until you can wipe the cylinder wall with a clean, oil dampened cloth, and it does not pick up any honing grit. Lightly oil the cylinder bore to prevent oxidation and assist with piston installation.

Exhaust Power Valves (2-cycle engines)

When boring cylinders with exhaust power valves, the exhaust power valve must be inspected to ensure it does not extend into the cylinder. The exhaust power valve must have approximately .015" clearance from the cylinder bore. ***Without proper clearance, the exhaust power valve could contact the piston and engine damage could occur.*** If machining the exhaust power valve is necessary, remove metal *only in the area that extends into the cylinder bore.* (See illustration A)



M-Series Piston Installation



Wiseco "M Series" pistons are designed to run at a specific piston to cylinder clearance, and are manufactured under controlled conditions for a specific bore size. Finish hone the cylinder to achieve the recommended piston to cylinder clearance, which can be found on the label on the piston box.

NOTE: Additional bore clearance may be necessary for modified engines. (May include head or cylinder work, aftermarket pipe, or ignition modifications)

Always use new gaskets for assembly. No head gasket material should extend into the cylinder bore. When installing a piston that exceeds the OEM overbore sizes, it is recommended that you use an over bore gasket kit. (Most models available from Wiseco)

Install the piston rings as outlined in the ring installation instructions.

IMPORTANT: Always check the rings for proper end gap.

Place a shop towel over the engine case opening to avoid dropping any components into the engine. Install the piston with rings onto the connecting rod. The arrow on the dome **MUST** point toward the exhaust side of the cylinder. Install the cylinder as outlined in the service manual, using proper assembly methods and torque specifications.

A break in procedure is necessary for proper ring seal. Refer to the service manual for proper break in procedures, air filter service, and oil pre-mix ratios.

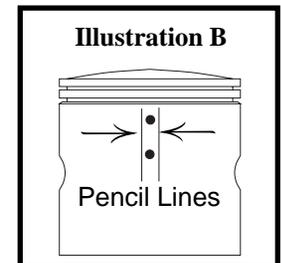
IMPORTANT – Piston pin retainers must be installed with care. Wire type retainers and snap-ring type retainers must not be collapsed smaller than the piston pin-hole diameter when being installed into the piston.

CAUTION - If the piston pin retainers are damaged, crimped, bent, or over-collapsed upon installation, the piston pin retainers may fail as the result of this damage. If piston pin retainers become damaged upon installation, it is recommended to contact Wiseco Piston Inc. for replacement retainers.

Lubrication holes (2-cycle engines)

If the cylinder has an exhaust bridge, the piston should contain lubrication holes on the skirt where it contacts the exhaust bridge. If the piston does not have the lubrication holes on the skirt, follow these steps to drill the lubrication holes.

1. Install the piston and wrist pin on the connecting rod using one circlip.
2. Slide the cylinder over the piston and align it to its normal position on the crankcase.
3. Slowly turn the engine over until the bottom ring groove is at the top of the exhaust bridge.
4. Reach through the exhaust port with a pencil, and mark a vertical line on the piston on both sides of the exhaust skirt.
5. Remove the cylinder and piston, and drill 2 holes (.060 - .090" diameter), .375" apart, starting .300" below the bottom ring, and between the pencil lines. (See illustration B)
6. Remove all burrs from the lubrication holes, and clean the piston thoroughly.



WISECO PISTON, INC. , LIMITED WARRANTY

WISECO warrants this product will be free from defects in material and workmanship for thirty (30) days following date of original purchase. If the product is found by WISECO to be defective, such products will, at WISECO'S option, be replaced or repaired at cost to WISECO. All products alleged by Purchaser to be defective must be returned to WISECO, postage prepaid, within thirty (30) days warranty period.

This limited warranty does not cover labor or other costs or expenses incidental to the repair and/or replacement of products or parts.

This limited warranty does not apply to any product which has been used in a hi-performance application, or racing or is subject to misuse, mishandling, misapplication, neglect (including but not limited to improper maintenance), accident, improper installation, modification (including but not limited to use of unauthorized parts or attachments), or adjustment or repair performed by anyone other than WISECO.

The parties hereto expressly agree that the purchaser's sole and exclusive remedy against WISECO shall be for the repair or replacement of the defective product as provided in this limited warranty. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as WISECO is willing and able to repair or replace defective goods.

THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE NOT EXPRESSLY SET FORTH HEREIN. ANY PRODUCT WHICH MAY BE SOLD BY WISECO BUT WHICH IS NOT MANUFACTURED BY WISECO IS NOT WARRANTED BY WISECO, BUT IS SOLD ONLY WITH THE WARRANTIES, IF ANY, OF THE MANUFACTURERS THEREOF.

WISECO'S liability (whether under the theories of breach of contract or warranty, negligence or strict liability) for its products shall be limited to repairing or replacing parts found by WISECO to be defective, or at WISECO'S option, to refund the purchase price of such product. In no event shall WISECO be liable for incidental or consequential damages arising out of or in connection with the product. Consequential damages shall include, without limitation, loss of use, income or profit, or losses sustained as the result of injury (including death) to any person, or loss of or damage to property.

Any claim by purchaser regarding this product shall be deemed waived by the purchaser unless submitted in writing to WISECO within the earlier of (i) fifteen (15) days following the date Purchaser discovered, or by reasonable inspection should have discovered, any claimed breach of this limited warranty, or (ii) thirty (30) days following the date of original purchase. Any cause of action for breach of this limited warranty shall be brought within six months from the date the alleged breach was discovered or should have been discovered, whichever occurs first.

This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

WISECO PISTON COMPANY, INC. 7201 Industrial Park Blvd. Mentor Ohio 44060

WISECO PISTON

M-SERIES PISTON INSTALLATION INSTRUCTIONS



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Printed in U.S.A.