



Service Order Information Form

Please fill this sheet out in its entirety and send to:
Millennium Technologies, 1404 Pilgrim Road, Plymouth, WI 53073
Find us on the web at www.mt-llc.com or on our Facebook page

Personal/Business Information

New Customer Existing Customer Date: _____

Name/Business: _____

Account #: _____ P.O. #: _____ Estimate# _____

Street Address: _____ Unit/Suite/Apt: _____

City: _____ State: _____ Zip: _____

Phone: _____ Day Evening Mobile

Email: _____

Cylinder/Parts Information

Make: _____ Model: _____

Year: _____ Displacement Size: _____ cc

Parts Included With Shipment: Cylinder Cylinder Head Power Valve Assembly
 Piston Complete Motor Assembly

Other: _____

Services Requested

- Strip/Replate/Hone to Finish Size _____ Overbore Cylinder w/Finish Size _____
- or Clearance _____ Repair Thread
- Weld Fix Detonation (Weld and Deck) Fix Broken Skirts (Requires base turning)
- Power Valve Service: Supply gaskets and seals Gaskets and seals included in shipment
- Reassemble Powervalue Assembly

Additional Parts to be Purchased

Piston Kit Quantity: _____ Brand: Wiseco Wossner Vertex JE Pro-X

Top End Gasket Kit Quantity: _____ Top End Bearing Quantity: _____

Other: _____

Please Indicate Payment Method

Note: If a form of payment is not indicated or a credit card number is not given, either on this form or over the phone, the work process could be delayed.

Credit Card Type: _____ Card#: _____ Exp: _____ Sec Code: _____

Billing Address: Same as address above, or: _____

C.O.D. Money Order PayPal My Credit Card is On File Call With Estimate

Please Indicate Preferred Shipping Method

UPS Fed-Ex Ground Next Day Delivery 2 Day Delivery 3 Day Delivery

Thank you for choosing Millennium Technologies. Your business is greatly appreciated.

Your cylinder has been coated with a Nickel-Silicon Carbide (NSC) composite coating. NSC is a premium, long lasting, highly wear resistant surface, and will help your engine operate at lower temperatures. Along with the natural absorbency of Silicon Carbide, honing a crosshatch pattern into the NSC assures that your cylinder walls will retain more oil. Another advantage to NSC is that it can be removed and re-applied to the same cylinder multiple times. So in the event of a future cylinder failure, keep Millennium Technologies in mind. Please note that NSC is NOT Chrome, and is safe to be used with most rings. Feel free to contact us with any questions regarding rings or otherwise.

POROSITY

It is a common question that we receive, "Why does my cylinder have pits in it?" The best answer is that it is porosity. Unfortunately there are a lot of misconceptions about porosity. Some of which include that a ring will catch on it or that it will cause poor ring seal. This is typically not the case. Kept in proper ranges rings will not be negatively affected by porosity. The holes fill up with oil creating a better ring seal and lowering the coefficient of friction. Some of the leaders in honing have gone so far as putting "porosity" in the bore to achieve this. A link to their website is here: <http://www.gehring.de/en/technology/laser-honing/>. We have done extensive testing and have never seen the effects of porosity on a blow by meter or had a coating failure attributed to porosity.

To understand porosity you have to understand what it is. Simply it is trapped gas bubbles from when the aluminum was poured. Most foundries have technologies that reduce this porosity but as a rule the deeper you go in a casting the more porosity you will find. That is why big bores are more susceptible to porosity than stock replates. Welding can also introduce porosity. As a rule, everything is done to eliminate it but, depending on the material or its age, it may not be possible.

Another question is why does it have porosity now when it didn't before? There are two reasons for this. Our plating process chemically removes material to allow the plating process to work. That etching exposes new porosity just under the machined surface of the bore. Our plating fills in most of the porosity but some of the bigger pits may be leftover. Machining tends to hide the surface porosity because it not only cuts the aluminum but also smears it into the surface. The other reasons can be found above, that either we may have needed to do some welding or boring which exposed new porosity.

The most important factor about porosity is why worry about it in the first place. Every OEM has a specification on allowable porosity and we would never send a cylinder out that would not pass this spec. If we would have a cylinder bore beyond this spec then you will receive a call from us before shipping to discuss.

ASSEMBLY & BREAK-IN

Before installing your cylinder, be sure to wash it with hot soapy water. The crosshatch in your NSC surface will trap dirt & grime, so please be very thorough. Less than thorough cleaning could result in scuffing, scoring, irregular wear, or seizure of the piston to cylinder walls. After washing, used compressed air to blow out all orifices and passages in the cylinder to ensure it is completely dry. Always wear eye protection when using compressed air.

Threads should be chased with a tap to ensure proper threading of any thread or bolt. Use compressed air to blow out any debris in thread holes.

Ring end gap clearance should always be checked prior to installation of the cylinder head. Gap clearances will vary from piston size and manufacturer, so always refer to the spec sheet provided with your piston. Place the ring in the cylinder and use your piston top to make sure it is level. Use a feeler gauge to determine the distance between the two ends of the ring. You should feel a light drag when pulling the gauge through the gap.

Upon assembly, make sure all gasket surfaces are thoroughly cleaned to ensure a proper seal. When installing the piston to the connecting rod, be sure to lubricate wrist pin and pin bearing with generous amounts of engine oil. When installing the circlips, face the open end of the clip toward the crankshaft. Also note the arrow on top of the piston and refer to manufacturer specifications to ensure it is facing the proper direction.

Before placing the cylinder onto the piston, it is essential that you lubricate both the piston and the cylinder. Generous amounts of assembly lube or engine oil should be used. After installing the cylinder and you are ready to assemble the head, again make sure that all gasket surfaces are clean. Properly install all gaskets and be sure to follow manufacturer recommendations for torque specs on all bolts.

Finally, be sure to turn the motor over by hand prior to starting. In the event of an increased bore size case modifications may be required. After assuring all these steps have been followed, let engine run at IDLE speed for 10 to 15 minutes. This will ensure proper seating of the piston rings to the cylinder walls. After the break-in period, allow the motor to cool completely and then re-torque cylinder head bolts to manufacturer specifications. After that is complete, you may proceed by following the manufacturers recommended break-in procedures.

- Be sure to use a clean air filter before you start the break-in process.
- Some re-jetting may be required. If your bore size was increased, you will need to jet leaner on the air side and richer on the fuel side to accommodate the increased air supply.
- Low-tension chrome rings are acceptable to run on NSC as well as any rings that are sent with the aftermarket or O.E. kit that you have.
- Always wear proper eye protection when using compressed air.

FUTURE ORDERS

When sending products in the future, there are a few things to include with your order that will ensure efficient and accurate turnaround. **Use our service order sheet, found on the other side of this sheet, or use the printable PDF version found on our website at www.mt-llc.com.** Also, please refer to your customer ID number when sending in future orders. This number can be found on the left side of your invoice just under your address. Another option is to simply write us a note that includes a daytime phone number, your preferred payment method, as well as instructions for work to be done.

WARRANTY

Since the first day we opened our doors, we have used our technical expertise and attention to detail to ensure that our NSC coatings are harder, rounder, and more wear resistant than any other available. We are very proud to stand behind our plating with a limited LIFETIME WARRANTY. Millennium Technologies shall not, under any circumstances, be liable for any special, incidental or consequential damages, including, but not limited to, damage, or loss of equipment, loss of profits or revenue, cost of purchased or replacement goods, or claims of customers of the purchase, which may arise and/or result from sale, installation or use of our product. In the unlikely event of any warranty concerns, you must contact us to obtain a Returned Goods Authorization (RGA) number. Please be sure to call us BEFORE returning any items, as we will not give any warranties without the proper RGA number.