

Honing Cylinders

1987 Force 125 Outboard

Watch the video @ <http://reinsmith.net/gallery/boating/boating.aspx>

Or at YouTube @ <http://www.youtube.com/watch?v=9xID8QwRqOo&hd=1>

The process of honing cylinders is important because it removes the glaze that accumulates from running the motor. When the glaze is formed it reduces the amount of oil that sticks to the walls of the cylinder and causes extra friction and wear. It also reduces compression and reduces the power the motor produces.

There are several important things to note about honing.

There are 2 different types of hones. One that has flat stones (like we are using here) and one that is a collection of ball bearings on wires, this is referred to as a "Christmas Tree Hone". You can debate which one is better until the cows come home, but they both do the same job.

Second, you want to perform the honing only when you are immediately ready to begin reassembling the pistons and crankshaft. You don't want much time to pass to allow rust to form. Make sure you coat the pistons with 2 cycle oil once you've honed and cleaned the bores as an additional safeguard against rust.

The next important thing to note is that you don't need to do much with the hone to remove the glaze. In fact you want to be careful not to hone the cylinder too much because you don't want to change the bore size and foul up the fit between the piston rings and the bore. So spin the hone slowly in the drill and don't spend too much time at it. A few seconds is all you'll need, and you'll clearly see the results.

The next thing you want to do when honing is to put a cross-hatch pattern in the "grinding" you are doing. To do this you want to move the hone up and down in the cylinder while it is spinning. You'll see us do this in the video and the resulting cross-hatch. The cross-hatch pattern will allow the oil to channel better in the cylinder while it is running.

The last step may seem trivial, but it isn't, and that is cleaning the cylinders after honing. There is a fine metal dust that results from the honing. You need to clean the bores thoroughly with a gentle soap and water and do the paper towel test to verify there is no residue left. Repeat the process as many times as needed to get them clean. If you don't, you'll be worse off than if you don't hone them at all!

Then finally, again, coat them with 2 cycle oil and get right to reassembling. Don't leave it sit like that for more than a week with re-honing it. Even if you think you don't see any rust, it's probably there and you just can't perceive it.

Good Luck!