



IPD TECH BULLETIN

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Lower Cylinder Block Bores for 3400, C15, & C18 engines

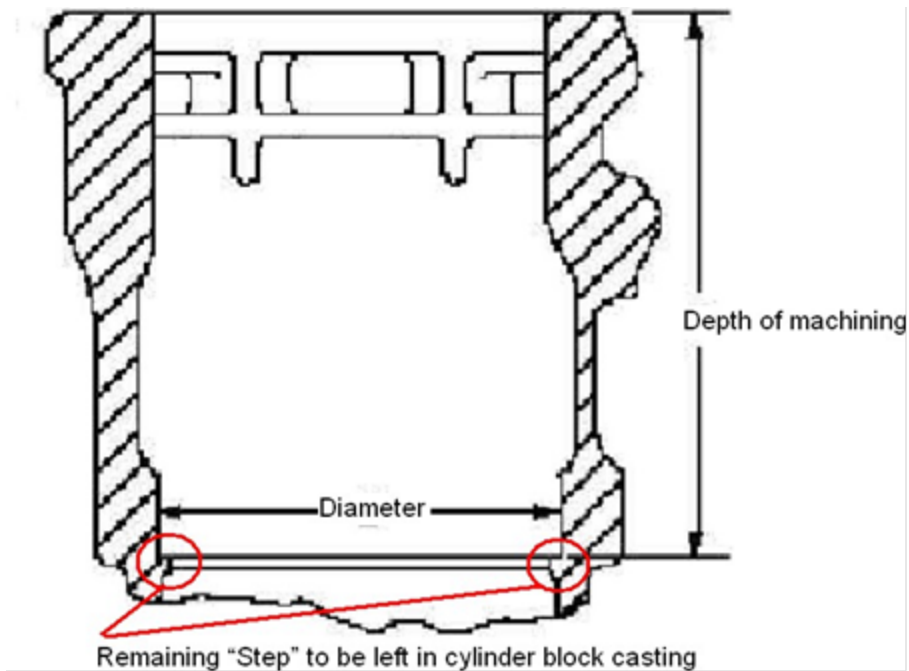
An area on the cylinder block that too often gets overlooked during overhauls is the upper and lower receiver bore areas that supports the cylinder liner. The wear in the photo below is an example of the damage that can result from a worn cylinder block. This cylinder block needs to be repaired prior to installing a new cylinder liner.



With newer engines developing higher cylinder pressures & horsepower, and older engines possibly having been overhauled a few times already, making sure the liner is properly supported is even more important. Some engines are being upgraded from an older aluminum piston to the newer steel piston designs and this can increase the demand for performance of cylinder components as well. Clearances in the newer technology steel pistons are much tighter than those of their older aluminum predecessors, so controlling the liner movement could head off an expensive failure.

Lower Receiver Bore

The process to repair the lower receiver bore is done with a “step” bore machining technique and a 4W6061 lower repair sleeve. To do this the cylinder block is machined to a specific oversized diameter and to a specific depth to create the proper press fit and a step in the block bore. The “Step”, as shown below helps retain the sleeve and creates a good seal when the sleeve bottoms out against it.



The oversized dimensions to be machined into the cylinder block (shown above) to accept the 4W6061 repair sleeve and create the proper press fit are:

Depth of machining is 8.826 +/- .010" (224.19 +/- 0.25mm)

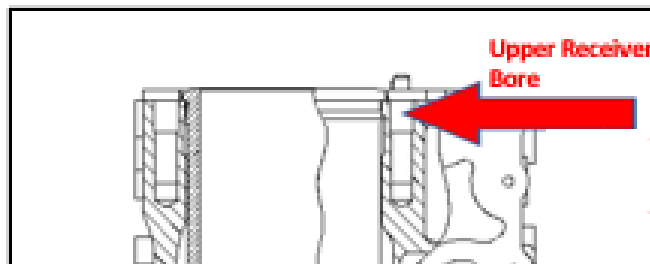
Diameter is 6.2205 +/- .001" (158.00 +/- 0.025mm)

To install the repair sleeve, the block and sleeve must be clean and dry. Apply high strength Loctite® to the block and freeze the repair sleeve. Install the sleeve with the ID taper upward and hold in place until seated. Allow adequate time for the Loctite® to cure before finish machining.

Finish machining the ID of the installed repair sleeve to 6.059 +/- .002" (153.90 +/- 0.05mm)

Upper Receiver Bore

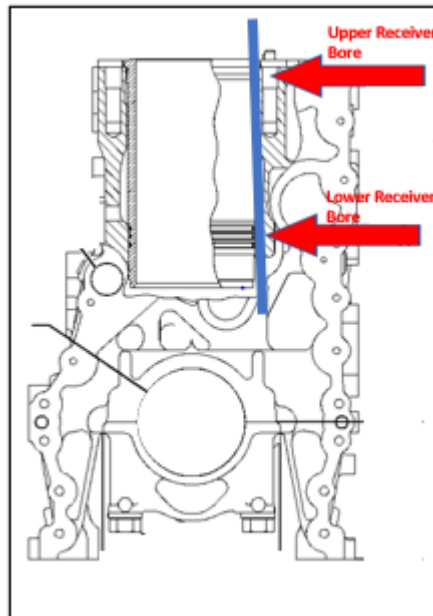
OE service information does not publish a diameter spec for this bore. Based on information from our machine shop customers the max diameter is 6.250"





Upper and Lower Bore Concentricity

Another critical dimension that the OE does not publish is the concentricity between the upper and lower receiver bores. Based on information from our machine shop customers the max variance is 0.002"



As engines evolve and components improve it is always best to use the latest specifications and technical information before beginning the machining processes. These instructions and dimensions are the most current available as of this printing.

On 3400 & C15 series engines you might also consider installing IPD's unique "CreviceSeal" liner to help reduce liner movement. Contact IPD for more information concerning these liners or visit www.ipdparts.com.

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