

# Eliminator Performance Products

## Block Tech Sheet (Rev 5)

On behalf of Eliminator Performance Products we would like to thank you for your purchase of an Eliminator 460 Performance block. Carefully read this tech sheet prior to any machining or assembly.

### SPECIAL NOTE #1: CLEARANCING FOR CRANKSHAFT, CONNECTING RODS AND PISTONS

- Since there is a wide selection of crankshafts, pistons and connecting rod components for numerous engine displacement combinations, we strongly recommend checking clearances of all moving parts. We feel that it is very important to check the clearances of the crankshaft counter weights, connecting rods and pistons to the oil pan rail and bottom of the cylinder bores and main bearing bulkheads. Additional material was added to bulkheads, the bottom of the cylinder bores and other areas to increase the structural integrity of the block. The cylinder length is about 6.30” and we currently machine an additional .705” of bulkhead material below the cylinder length. This additional clearance allows the piston to move lower into the bore without interference but WE STILL RECOMMEND THAT ALL CLEARANCE BE CHECKED PRIOR TO FINAL ASSEMBLY.

### SPECIAL NOTE # 2: CYLINDER BORE MACHINGING AND HONING

- Please note that there is an additional .705” of clearance from the bottom of the cylinder bore to the top of the bulkhead. This is designed to provide additional rigidity to the bottom of the bore and the bulkhead in high output and longer stroke applications. Because of this design the boring and honing process will take a little more time than a production stock block. We recommend you consult a veteran machinist or follow the below outlined process. Below is the recommended boring and honing process for an Eliminator block.
  1. **First**, machine the cylinder bore to approximately 0.005” under the final finished dimension. *This means that the boring tool must be adjusted to top of the bulkhead **WITHOUT** coming in contact with the bulkhead.*
  2. **Second**, begin rough honing the block with a standard 4 inch longer roughing stone until the bore is approximately 0.001 under the finished dimension. *This means that the honing tool must be adjusted to reach the bulkhead **WITHOUT** coming in contact with the bulkhead.* Normally, the bottom ½ inch of the bore will develop a 0.0005 taper because the roughing tool could not be extended well beyond the bottom of the cylinder bore. We recommend installing a short set of finishing stones (see Sunnen catalog) and dwell hone the bottom of the cylinder

bore to the desired finished dimension which will now give the desired over stroke clearance.

3. **Third**, install the lower 4 inch finishing stones and hone the cylinder bore to the finished dimension along with blending the bottom of the bore. Most veteran machinist has come across this issue in the past and may have another method to bore and hone the cylinder bores.

### **SPECIAL NOTE #3: CLEANING, DEBURRING AND WASHING THE BLOCK**

- Prior to the final washing and assembly, please deburr all edges. This includes the camshaft journal (before cam bearing installation), around the main bearing caps and bottom of the cylinder bores. Inspect all other edges and file any sharp edges. When washing the block, pay close attention to all oil feed holes and water passages. Core sand may still exist in any of the water jackets so rinse the water jackets thoroughly.

### **BLOCK DIMESIONS:**

Bore diameter	4.485" Unfinished
Deck height	10.315" Finished
Bore wall thickness	0.180" Nominal at 4.700" bore
Deck thickness	0.850" Nominal at 10.315"
Weight	272 lb. (Premier)
Cam journal	2.500" Finished
Lifter bore diameter	0.8755" Finished

### **OIL PAN:**

Standard Ford 460 mounting flange

### **MAIN BEARINGS:**

Standard Ford 460 upper grooved bearing

### **CAM BEARINGS:**

The cam bearing bores are machined to 2.500" diameter to accept the Jesel cam bearing to accept the 60mm diameter cam journal, or the INA (Ford SVO / Ford Motorsport) roller cam bearings for the standard Ford 2.124" diameter journal.

### **MAIN BEARING FASTENERS: USE FASTENER MOLY LUBE**

Please apply moly lube to the threads on all threaded fasteners. Install the studs into the block until the fastener's counter bore bottoms out. DO NOT TORQUE the studs into the block.

### **Chrome Moly Fasteners (standard on Premier blocks)**

TORQUE ALL ½" studs to 95 to 110 lb-ft (caps # 1 thru #5) inside

TORQUE ALL ½" bolts to 85 to 95 lb-ft (caps #2 thru #4) outside

TORQUE ALL 7/16" bolts to 60 to 70 lb-ft (caps #1 and #5) outside

**Non Chrome Moly Fasteners (non Premier blocks-Sportsman, HP Billet and Ultra)**

TORQUE ALL ½” studs to 90 to 100 lb-ft (caps # 1 thru #5) inside

TORQUE ALL ½” bolts to 60 to 70 lb-ft (caps #2 thru #4) outside

TORQUE ALL 7/16” bolts to 40 to 50 lb-ft (caps #1 and #5) outside

**BRONZE DISTRIBUTOR CAM GEAR LUBRICATION:** When using a bronze distributor gear it is especially important to lubricate it. We recommend that a small 0.040” hole be drilled into the 3/8” NPT pipe plug at the front of the block located closest to the distributor. This would be on the left side of the block from the rear face.

**FRONT FACE OF BLOCK 3/8” NPT PIPE PLUGS THAT ARE INSTALLED ON THE RIGHT SIDE (FROM REAR FACE) AT 2 LOCATIONS:**

We recommend that the pipe plug that is inserted into the priority oil hole be ground from the rear side with a total material removal of .125” to .150” so as to NOT restrict the oil flow to the main bearing.

**OIL RESTRICTION: Note manufacturing Date  
(Blocks machined prior to December 1, 2007)**

If mechanical lifters and roller rocker arms are to be installed the oil supply to the lifter oil feed hole can be restricted. In the front of the block there are three oil galleries that are tapped for a 3/8” NPT plug (supplied). The upper oil galley on the right side of the block has also been internally tapped for a ¼” NPT pipe plug. By drilling a minimum of a 0.125" hole in a ¼” NPT pipe plug and installing the plug in the ¼” tapped hole, oil flow will be restricted to the lifter galley.

**NOTE #1:** Not recommended when bronze lifter bushings are installed

**NOTE #2:** Oil pressure taken from upper rear of block may show lower pressure due to the restrictor. Normal oil pressure can be obtained if taken from the front of the block.

**(Blocks machined after December 1, 2007)**

If mechanical lifters and roller rocker arms are to be installed the oil supply to the lifter galleries can be restricted. In the front of the block there are three oil galleries that are tapped for a 3/8” NPT plug (supplied). The upper oil galley on the right side of the block has also been internally tapped for a ¼” NPT pipe plug. It is also tapped at the rear of the block. This allows the use of a ¼" NPT pipe plug to be installed at the front face of the block. At the rear face of the block, drill a minimum of a 0.125" hole in a ¼” NPT pipe plug and install the plug in the ¼” tapped hole, oil flow will be restricted to the lifter galley.

**NOTE #1:** Not recommended when bronze lifter bushings are installed

**NOTE #2:** Oil pressure taken from upper rear of block may show lower pressure due to the restrictor. Normal oil pressure can be obtained if taken from the front of the block.

**FRONT COVER:**

Standard Ford 460 front cover

**OIL FILTER (WET PUMP):**

Standard oil filter pad

**OIL PUMP:**

Standard oil pump (this will have clearance to the 4 bolt main caps)

**REAR MAIN SEAL:**

Ford two piece type

As you look over this block, you will notice many design features that will enhance your engine's reliability and performance. Some of these features are, 18 bolt cylinder head mounting, main journal oil groove, reinforced lifter valley, thicker walls, four bolt main caps at all 5 main journals, machined for roller cam bearings, reinforced engine mount pads, thicker material around cam journals, very beefy bulkheads, superior cast iron alloy, and state of the art CNC machining by LSM; just to name a few. If you have any questions or issues, please call or e-mail us and thank you again for choosing *Eliminator Performance Products*.

Kindest Regards,

The Eliminator Team

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