



# Big Block Chevy Aluminum Block Specifications and Instructions

Technical data and specifications for ALUMINUM block part numbers:

Part #	Style	Bore	Bore Finish	Deck Height	Main Caps	Cam Height	Lifter Bores
085500	BBC	4.240"	Unfinished	9.800"	Billet Splayed	STD Cam	Unfinished
085501	BBC	4.490"	Unfinished	9.800"	Billet Splayed	STD Cam	Unfinished
085510	BBC	4.240"	Unfinished	10.200"	Billet Splayed	STD Cam	Unfinished
085511	BBC	4.490"	Unfinished	10.200"	Billet Splayed	STD Cam	Unfinished

**Casting Number:** BMP-016

**Block Material:** 357-T6 aluminum alloy.

**Block Weights:** BMP BBC Aluminum blocks with main caps, hardware and cylinder sleeves 130lbs

**Deck Height:** 9.800" or 10.200"

**Deck Thickness:** .600" minimum

**Camshaft:** Is in the stock location.

**Cam Bearings:** Accepts Standard Big Block Chevy Cam bearings. Can be machined for a 55mm bearing

**Main Bearings:** Utilizes Big Block Chevrolet style main bearings.

**Main Caps:** Billet steel main caps. Center three caps have splayed studs. The front and rear caps are a straight studded design. All the main caps use a 1/2" thread. Torque spec on main bolts both inner and outer is 95-100 ft. lbs. with oil. BMP# 701420.2

**Lifter Bores:** Indexed. Lifter bore size is standard Chevy diameter .8437"

**Cylinder Bores:** 4.240" or 4.490". ±.005" Cylinder bores are of a Siamese design. Sleeves are a replaceable, centrifugal cast ductile steel pressed in with a .001" to .002" fit. The block. Sleeves do not protrude into the water and are considered a dry sleeve.

**NOTE:** It is very important that you draw down each and every sleeve to assure that it is seated prior to decking the block. Beating with a big hammer and a block of wood is not acceptable due to the chance of sleeve bounce.

**Maximum Recommended Bore Size:** 4.560". Sleeve OD size is 4.285"

**Cylinder Bore Centers:** Stock 4.840".

**Freeze Plugs:** All aluminum blocks include screw in freeze plugs. Torque to 35 ft lbs with anti seize on threads and o-rings

**Distributors:** When using a 10.200 deck height block, a distributor designed for a "Tall Deck" must be used unless using a manifold already cut.

**Oil System Features:** Priority main oiling. As is, block is set up for OE style internal oil pump. Block may be converted to a dry sump oiling system.

**Stroke Clearance:** 9.800" deck height can handle up to a 4.375" inch stroke without block relieving. Blocks with a 10.200" deck height can handle up to a 4.750" inch stroke (with steel or titanium connecting rods and a stock base circle cam) with minor clearancing. Sleeves are left long due to varying needs of engine builders.

**Water Jackets:** Expanded for better cooling. O-ringed freeze plugs, screw-in style, BMP part # 701645. (supplied with all new blocks)

**Oil Restrictors:** Blocks use oil restrictor part # 701802-2.

**Filtration:** Integral mount for spin on filter. The oil filter mounting boss has been relocated to clear kickout style oil pans.

**Oil Pan Rails:** Solid (stock width) can be clearanced for strokers. Oil pan rail is dual drilled for stock oil pans and aftermarket race oil pans.

**Cylinder Head Bolt Holes:** Head bolt holes are blind tapped and do not extend into the water jackets. BMP blocks incorporate an extra two head bolt bosses per side in the lifter valley area. This allows certain race heads that have 18 to 20 head bolts to be installed on the block without modification. **SPECIAL NOTE:** THE TORQUE VALUE USED ON THE FASTENERS FOR THESE BOSSES IS NOT TO EXCEED 35 LB.FT. DO NOT IGNORE THIS SPECIFICATION. Standard Big Block heads with 16 head bolts can be used by not employing the extra 4 head bolt bosses. IT IS THE BUILDER'S RESPONSIBILITY TO DETERMINE THAT BOLTS OR STUDS USED HAVE THE PROPER ENGAGEMENT TO PREVENT STRIPPING THE THREADS.

**Fuel Pump:** Uses stock style fuel pump and stock length fuel pump pushrod. When using a billet aluminum fuel pump block off plate you may need to modify it slightly for fit due to overall size.

**Starter:** Starter mounting pad is drilled for both straight across and stagger bolt patterns.

**Bell Housing Pattern:** Stock GM

**Motor Mounts:** Drilled and tapped for side and front mounts in OEM locations.

**Gear Drives & Belt Drives:** To prevent contact between oil galley plugs and belt drive or gear drive covers, it may be necessary to tap the oil galley holes in the block deeper so the oil galley plugs will sit flush with the block, or you can use shorter plugs.

### **Before Final Assembly:**

1. Before any machine or assembly begins, thoroughly inspect the block for any defects including all oil passages to assure they have been drilled completely. Remember you are the final inspector. Trial fit of the rear main seal is highly recommended to assure a nice fit. Once any machine work of any sort has begun, the block is NON-RETURNABLE. We do our very best in quality control but is not impossible for something to slip by.
2. Due to the nature of aluminum blocks with ductile iron sleeves we highly recommend that the sleeves be pressed down (not hammered) to ensure that they are completely seated in the block prior to decking. Hammering down with a big hammer and a piece of wood will not assure that the sleeves are fully seated as this could cause the sleeve to bounce. You may find that decking and cleaning of the block in the hot tank that the sleeves may rise .001" to .002" above the deck. This is completely normal and you can proceed with assembly as this will not affect the operation of the engine. This condition will be corrected with installation of the cylinder heads.
3. Make sure block is free of debris. Clean block thoroughly.
4. Lifter bores are machined to the factory spec of .8437. Lifter diameters vary by manufacturer. Slight honing of the lifter bores may be needed for proper lifter to lifter bore clearance.
5. Long rod and stroker applications need to be dry assembled and checked for connecting rod to block interference. Grinding of the oil pan rail may be necessary. Clearance needs to be kept at a .050 minimum

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***While our products are used in many applications using super-chargers, Turbos or Nitrous successfully, please be aware that there is a greater potential for engine damage due to the possibility of tuning errors.***

PLEASE DO NOT CALL THE DEALER FROM WHICH YOU PURCHASED YOUR PARTS. If you have any questions, please contact BMP customer service.

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