



# Big Block Chevy 409 Aluminum Block Specifications and Instructions

Technical data and specifications for ALUMINUM block part numbers:

<i>Part #</i>	<i>Style</i>	<i>Bore</i>	<i>Bore Finish</i>	<i>Deck Height</i>	<i>Main Caps</i>	<i>Cam Height</i>	<i>Lifter Bores</i>
085575	BBC	4.310"	Unfinished	9.600"	Billet Splayed	STD Cam	Unfinished

**Casting Number:** BMP-409

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

**Block Weights:** BMP BBC Aluminum blocks with main caps, hardware and cylinder sleeves 150lbs

**Deck Height:** 9.600

**Deck Thickness:** .600" minimum

**Camshaft:** Stock big block Chevy location (raised from a 409). Requires a custom camshaft, BBC cam with BBC lobe spacing but 409 lobe positions.

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

**Timing Chain:** Standard big block Chevy

**Timing Chain Cover:** Standard big block Chevy

**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 110 ft. lbs. with oil.

**Rear Main Seal:** Standard Big Block Chevy two-piece rear main seal, Fel Pro # P29182 is used

**Lifter Bores:** Spread .100" which is stock big block Chevy location and indexed 45° angle, .8437" (if using roller lifters, the use of LS Chevy lifters allow for more travel due to taller bodies)

**Cylinder Bores:** 4.290" ±.005" Cylinder bores are of a Siamese design. Sleeves are a replaceable, centrifugal cast ductile steel pressed in with a .001" to .002" fit. 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 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:** A 409 distributor can be used but you must turn down the bottom to BBC dimension or you can use a BBC distributor but it will need a .300" spacer above the manifold.

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

**Stroke Clearance:** Block accepts a std BBC crankshaft. Block will accept up to 4.250" stroke with steel rods.

**Connecting Rods:** Standard BBC

**Pistons:** 409 piston and valve notches with proper pin height.

**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 BBC width) can be clearanced for strokers. BBC Oil pan can be used.

**Cylinder Head Bolt Holes:** The top row of head bolt holes should not in any way be modified and made any deeper. These holes are on an angle that will converge into the cylinder. Any added depth will result in contact with the cylinder sleeve. Also, do not over torque these studs as they can distort the cylinder. ARP Part# 135-4002(6pt), ARP Part# 235-4202(12pt) both have a 1.000" of coarse thread

**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.

**Water Pump:** Standard 409

---

### **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

### **WARRANTY TERMS:**

***No warranties of any nature (expressed, implied, fitness of usage or merchantability) are given on these products. Seller undertakes no responsibility for any product sold. Additional disclaimers are within and are binding upon this contract. Due to the intended usage of products offered, all products are sold on an "as-is" basis, and no warranties of any kind, whether written or oral are made by Bill Mitchell Products., its agents or employees. All implied warranties, including the implied warranties of merchantability and fitness are expressly excluded, and the buyer bears the entire risk as to quality performance and use of these products. Bill Mitchell Products will assume no responsibility of personal injury, labor or other injury arising out of the usage of high performance racing parts or products. Any defective part will be handled between the original manufacturer and the buyer. Bill Mitchell Products reserves the right to change specifications, prices and discontinue parts without notice. Installation of Bill Mitchell Products heads may adversely affect the vehicle manufacturer's warranties, and may violate State and Federal laws when vehicles so equipped are operated other than strictly off-highway. Bill Mitchell Products reserves the right to discontinue any product at its sole discretion and without any liability with respect to similar products already in the field. Some parts are not legal for sale or use on pollution controlled motor vehicles. See website for additional details.***

***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

---

**BILL MITCHELL PRODUCTS**  
1726 Hibiscus Dr. Edgewater, FL 32132  
(386) 957-3009 · Fax (386) 410-4453  
[www.billmitchellproducts.com](http://www.billmitchellproducts.com) Revision 06/26/22