



Small Block Chevy Aluminum Block Specifications and Instructions

Technical data and specifications for BARE ALUMINUM block part numbers:

Part#	Style	Bore	Bore Finish	Deck Height	Main Caps	Cam Height	Lifter Bores	Mains
084510	SBC	3.990"	Unfinished	9.025"	Billet Splayed	Std Cam	Unfinished	350 Mains
084520	SBC	4.115"	Unfinished	9.025"	Billet Splayed	Std Cam	Unfinished	350 Mains
084530	SBC	4.115"	Unfinished	9.025"	Billet Splayed	Std Cam	Unfinished	400 Mains

Casting Number: BMP-041

Block Material: Aluminum 357T6 aluminum alloy

Block Weight: 105lbs w/ caps and sleeves

Deck Height: 9.025" (Standard Chevrolet)

Deck Thickness: .600 minimum.

Camshaft: Standard location. Can be machined for 55mm.

Cam Bearings: 2.000" Cam bore, Durabond DT1T. Can be machined to accept up to a 50mm roller bearing.

Note: When installing, BE SURE the oil hole in the bearings aligns with the oil feed hole.

Main Bearings: Utilizes 350 or 400 Chevrolet style main bearings. (Depending on main size of block) All blocks regardless of main journal size utilize a two piece 400 rear main seal such as a Fel-Pro 2909 or equivalent.

Main Caps: All five main caps are four bolt billet caps with the center three being of the splayed design. The inner row of Studs are ½" inch thread. The outer row of bolts are 7/16 thread. Torque specs on main bolts are: 90-95 ft. lbs. inner & 75 ft. lbs. outer with oil. All BMP blocks (with either the 350 or 400 main size) will have the bolt pattern spread of a 400 block. Most windage trays fit the 350 bolt pattern. Custom fitting of the windage tray may be required.

Lifter Bores: Standard location, Indexed. Lifter bore size is standard Chevy diameter .8437" unfinished.

Cylinder Bores: 3.990" or 4.115" standard. 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 to be a DRY sleeve.

Maximum recommended bore size: 4.165". Sleeve OD size is 4.285"

Cylinder Bore Centers: Stock 4.400".

Freeze Plugs: All aluminum blocks include screw in freeze plugs. Torque to 35lbs with anti seize on threads and o-rings BMP part# 701645.

Distributors: Standard SBC

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

Oil Restrictors: Requires 2 oil restrictors, two in the rear. BMP part # 701804-2 (2pcs).

Filtration: Standard Integral mount for spin on filter.

Oil Pan Rails: Solid (stock width) can be clearanced for strokers. Billet splayed cap blocks may have oil pan interference with the front and rear main caps. It may be necessary to hand fit the oil pan.

Cylinder Head Bolt Holes: Head bolt holes are blind tapped and do not extend into the water jackets. IT IS THE BUILDER'S RESPONSIBILITY TO DETERMINE THAT THE STUDS USED HAVE THE PROPER ENGAGEMENT TO PREVENT STRIPPING THE THREADS.

Stroke Clearance: Will accept a 4.000" stroke crank with steel rods.

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.

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

Bell Housing Pattern: Stock GM

Gear Drives & Belt Drives: To prevent contact between oil galley plugs and belt drive, gear drive covers, it may be necessary to either tap the block deeper or to 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 big hammer and a piece of wood will not assure the seat to be fully seated as this could cause the sleeve to bounce. You may find that after decking and cleaning 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 block. This condition will be corrected with the 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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