



HEMI®/WEDGE RACE ENGINE BLOCKS

Aluminum & CGI Specifications and Instructions

Technical data and specifications for CGI block part numbers:

Casting Number	Part #	Bore Size	Block Type	Engine Mount	Deck Height	Cam	Finish	Lifter Bores	Water Jacket
P5153778C	088225	4.240	Hemi	Hemi	RB	RAISED 60mm	Rough	NO	Short

Technical data and specifications for BARE ALUMINUM block part numbers:

Casting Number	Part #	Bore Size	Block Type	Engine Mount	Deck Height	Cam	Finish	Lifter Bores	Water Jacket
P5153778A	088510	4.240	Hemi	Hemi	RB	STD	Rough	Bushed	Tall
	088515	4.490	Hemi	Hemi	RB	STD	Rough	Bushed	Tall
	088520	4.490	Hemi	Hemi	RB	RAISED	Rough	NO	Tall
	088550	4.310	Wedge	Wedge	RB	STD	Rough	Bushed	Tall
	088555	4.490	Wedge	Wedge	RB	STD	Rough	Bushed	Tall
	088560	4.490	Wedge	Wedge	RB	RAISED	Rough	NO	Tall

Technical data and specifications for PREPPED ALUMINUM block part numbers:

Casting Number	Part #	Bore Size	Block Type	Engine Mount	Deck Height	Cam	Finish	Lifter Bores	Water Jacket
P5153778A	088510-4250	4.250	Hemi	Hemi	RB	STD	Finished	Bushed	Tall
	088510-4280	4.280	Hemi	Hemi	RB	STD	Finished	Bushed	Tall
	088515-4500	4.500	Hemi	Hemi	RB	STD	Finished	Bushed	Tall
	088515-4530	4.530	Hemi	Hemi	RB	STD	Finished	Bushed	Tall
	088550-4320	4.320	Wedge	Wedge	RB	STD	Finished	Bushed	Tall
	088550-4350	4.350	Wedge	Wedge	RB	STD	Finished	Bushed	Tall
	088555-4500	4.500	Wedge	Wedge	RB	STD	Finished	Bushed	Tall
	088555-4530	4.530	Wedge	Wedge	RB	STD	Finished	Bushed	Tall

Block Applications: The RACE blocks are designed to be a replacement for all RB block applications.

Block Material: Aluminum: 357-T6 aluminum alloy. CGI: Compacted Graphite

Block Weight: Aluminum: 142lbs. w/ caps and sleeves. Iron and CGI: 4.240 bore – 294lbs. 4.490 bore – 305lbs.

Deck Height: 10.725"

Deck Thickness: .600"

Cam Bearings: Uses standard MOPAR® cam bearings. Note: When installing cam bearings MAKE SURE the oil hole in the bearings is inline with the oil feed hole in the block. Block can be machined for 60mm bearings.

Main Bearings: Utilizes MOPAR stock main bearings.

Main Caps: RACE blocks come with nodular iron main caps with all five caps being two-bolt style with cross-bolts on the first four positions. All the main caps use a ½ x 13 studs. Torque spec on main studs is 100 ft-lbs. with oil and 45 ft-lbs on the cross bolts.

Rear Main Seal and Retainer: RACE blocks come with the rear seal retainer installed. The rear seal is in the MP kit part # P4271961. Re-torque the seal cap retaining bolts to 30 ft-lbs.

Main Bearing Journals: RACE blocks are machined for 2.943 diameter bearing OD

Lifter Bores: Machined to .905" diameter and 45° angle. Sleeved lifter bosses are semi-finished and need to be honed to final size.

Maximum Bore: ALUMINUM and CGI blocks to 4.530" max. CGI Wedge (when avail, 4.600) Use discretion based on your application.

Cylinder Bores: Cylinder bores are of a siamese design. RACE ALUMINUM sleeves are replaceable, pressed-in liners and have a rubber O-ring near the bottom of the sleeve to keep oil from between the sleeve and block.

Cylinder Wall Thickness: ALUMINUM: Sleeve-.100" per side @ 4.500", .200" parent material.

Water Jackets: Tall or optional short.

Freeze plugs: All ALUMINUM blocks include screw-in plugs. Torque to 35 Lb Ft with anti-seize on threads and O-ring.

Distributors: When using a 10.725 deck height block, use a stock distributor and related drive components. A bronze intermediate shaft bushing is installed in each block and is finished to size.

Raised Cam Blocks: Require a custom front drive system.

Lubrication: We recommend oils designated SM/SL/SJ, 15W-40 or 20W-50.

Oil System Features: Block is set up for stock style internal oil pump. Block may be converted to a dry sump oiling system. Race blocks come with an adapter that accommodates stock oil pick-up tubes. Stock oil pans will also fit. Oil pressure can be drawn from rear of block, at the top of the bellhousing.

If you require additional stroke clearance, you may run an external pickup tube from the block face to the oil pan. An AN-12 boss (1 1/16" x 12 TPI) is machined on the front face of the block which connects directly to the inlet side of the oil pump. An AN-12 fitting can be installed here to connect directly to the oil pickup tube in the oil pan. You must plug the oil pickup tube adapter in the crankcase with a ½" pipe plug when using this modification.



Oil Restrictors: The oil feeds from the deck surfaces which feed the cylinder heads have .040" restrictors installed and should NOT be removed.

Filtration: Integral mount for spin on filter.

Oil Pan Rails: Torque pan attaching screws to 200 in-lbs.

Clearance: RACE Blocks with a 10.725 deck height can handle up to a 4.750" inch stroke without block relieving.

Camshaft: Standard or +.250" raised locations.

Fuel Pump: Uses stock style fuel pump and stock length fuel pump pushrod.

Starter: Starter mounting pad is drilled for stock and popular aftermarket starters.

Motor Mounts: Standard MOPAR.

Cylinder Head Bolt Holes: Blind tapped and do not extend into water jacket. A LONGER THAN STOCK STUD IS NEEDED FOR THE VALLEY ATTACHMENT WITH THIS BLOCK. Torque ALUMINUM heads to 65-70 ft-lbs, IRON heads to 70-75 ft-lbs (with oil). IT IS THE BUILDER'S RESPONSIBILITY TO DETERMINE THAT BOLTS OR STUDS USED HAVE THE PROPER ENGAGEMENT TO PREVENT STRIPPING THE THREADS.

DEFINITIONS AND DIMENSIONS:

Bare Block

Due to a vast difference of opinion among professional builders regarding specifications and procedures, all blocks, when purchased bare, are finished within MOPAR +/- tolerances. RACE blocks are supplied with the following specs:

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Block Weights: HEMI / WEDGE Aluminum 142Lbs (Caps and sleeves).

Deck Height: 10.725 +/- .005.

Cylinder Bore: 4.240, 4.310 4.490 or 4.590 +/- .005.

Main Journals: 2.943"

Lifter Bores: .905"

Stroke Notch: Clearanced for 4.500" stroke. Can be machined for 4.750" stroke with external oil pick-up.

Prepped Block

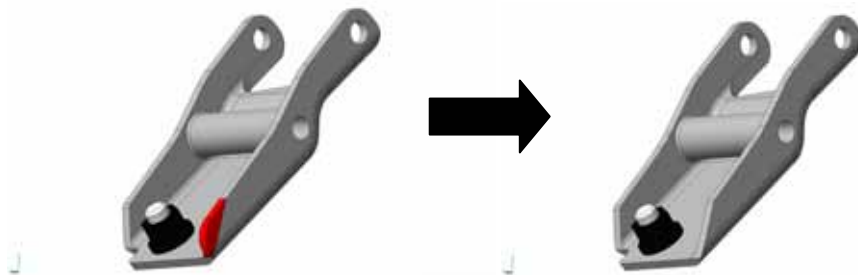
RACE blocks when purchased prepped, will be sized to the above specs with the following exception: Cylinder Bores: 4.250, 4.310, 4.500. All prepped blocks will have dowel pins, freeze plugs and oil galley plugs installed. The block will just need a final cleaning and be ready for assembly.

Before Final Assembly:

1. Before any machine or assembly begins, thoroughly inspect the block for any defects. Remember you are the final inspector. Once machine work has begun, the block is NON-RETURNABLE.
2. Due to the nature of aluminum blocks with ductile iron sleeves we highly recommend that the sleeves be pressed down to ensure that they are bottomed in the block prior to decking. You may find that after decking and cleaning the block that the sleeves may rise .001" to .002" above the deck. You can proceed with assembly as this will not affect the operation of the block. This condition will be corrected by the torquing 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 .905" 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
6. MOPAR blocks come with a deck height of 10.725. PLEASE measure the deck before any cutting is done. REMEMBER: MEASURE TWICE AND CUT ONCE.

Wedge Engine Mount Modification:

The driver side engine mount for Wedge installations must be relieved by grinding as shown. Be sure the mount fits flush to its mounting pad. This only applies to the drivers side mount.



WARRANTY TERMS:

World Products Inc. (World) manufactures parts to meet QS 9000 specifications. In addition, all parts go through several inspection procedures before shipping. However, YOU ARE THE FINAL INSPECTOR. Please note: Inspect all parts before doing any machine work or assembly. Remember the saying "measure twice and cut once." If any defects are found or suspected, call World before proceeding. World will replace or repair at its option any defective part which has not been modified or misused within one year of INVOICE purchase date. Any modification or marine use of parts will void all warranties.

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WARRANTY CLAIMS:

Contact Customer Service to obtain a Return Material Authorization number directly from World Products for any warranty return. DO NOT CONTACT YOUR DEALER. DO NOT RETURN PARTS WITHOUT AUTHORIZATION. Returned product must be shipped prepaid. Collect shipments will be refused. Returned parts must have RMA number on the outside of the package, a copy of original bill of sale inside and a written explanation of the suspected defect. If the item is found defective, World Products will repair or replace it at its discretion and return it freight prepaid. No additional labor claims will be paid. There will be no exceptions to this rule.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

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