



MERLIN IV Cast Iron Blocks

Specifications, Technical Data and Instruction Sheet

Part #	Bore Size	Main Size/Type	Deck Height	Stage of Readiness
091100	4.245	2.750 Nodular	9.800	Bare Block
091101	4.495	2.750 Nodular	9.800	Bare Block
091102	4.595	2.750 Nodular	9.800	Bare Block
091103	4.245	2.750 Nodular	9.800	Bare Block 1 Piece Seal
091105	4.495	2.750 Nodular	9.800	Bare Block 1 Piece Seal
091107	4.595	2.750 Nodular	9.850	Bare Block
091110	4.245	2.750 Nodular	10.200	Bare Block
091111	4.495	2.750 Nodular	10.200	Bare Block
091112	4.595	2.750 Nodular	10.200	Bare Block
091117	4.595	2.750 Nodular	10.250	Bare Block
095000	4.245	2.750 Billet Splayed	9.800	Bare Block
095010	4.495	2.750 Billet Splayed	9.800	Bare Block
095010-55	4.495	2.750 Billet Splayed	9.800	Bare Block
095012	4.595	2.750 Billet Splayed	9.800	Bare Block
095012-55	4.595	2.750 Billet Splayed	9.800	Bare Block
095013-55	4.595	2.750 Billet Splayed	9.500	Bare Block
095100	4.245	2.750 Billet Splayed	10.200	Bare Block
095110	4.495	2.750 Billet Splayed	10.200	Bare Block
095112	4.595	2.750 Billet Splayed	10.200	Bare Block
095112-55	4.595	2.750 Billet Splayed	10.200	Bare Block
095117	4.459	2.750 Billet Splayed	10.250	Bare Block

-55 blocks have a 2.283 cam bore and .904 lifter bore

Block Applications:	The MERLIN III IRON blocks are designed to be a replacement for the Mark IV Big Block Chevy. In applications (either street or race) where the combination is making 1000 plus H.P. normally aspirated or the block is being used in a nitrous or blower application, it is HIGHLY RECOMMENDED to use the Merlin III block with the billet, splayed main caps..
Block Material:	High density Cast iron..
Deck Height:	9.500", 9.800", 9.850", 10.200" or 10.250" (depending on part number)
Deck Thickness:	Approximately .600" minimum
Cam Bearings:	The Merlin IV has a 2.120 cam bore except for the -55 blocks which have a 2.283 cam. Std cam tunnel bearing GMP12 or GMP12LT -55 cam tunnel bearing GMP55T
Main Bearings:	Utilizes Big Block Chevrolet style main bearings. A two-piece rear main seal, Fel Pro # 2918B is used.
Main Caps:	Blocks come with nodular iron or billet steel main caps. The two end caps are of the standard four bolt design, while the center three caps are splayed style. All the main caps use 1/2" thread bolts or studs. Nodular caps use bolts at all locations, while billet caps use studs on the straight locations and bolts on the splayed locations. Caps are register located as well as ring dowel located to eliminate cap walk. Torque spec on main bolts or studs both inner and outer is 110 ft. lbs. with lube.
Lifter Bores:	Indexed. (Lifter bore size is standard Chevy diameter .8437" or .9052" for .903" lifter bores) Lifter valley is drilled and tapped (5/16 fine thread) to accept a lifter valley windage tray. These blocks require a + .300" tall lifter
Maximum Bore:	Merlin III iron blocks can be bored to a maximum of 4.625".
Cylinder Bores:	Cylinder bores are of a siamese design.
Cyl. Wall Thickness:	@ 4.625" bore cylinder wall thickness will be approximately .290".
Water Jackets:	Expanded for better cooling.
Intake Manifolds:	When using 10.200" deck height block, an intake manifold designed for a "Tall Deck" must be used or spacers can be made or bought to adapt a standard deck intake (9.800) to the 10.200 deck height block.
Distributors:	10.200" deck height blocks require a distributor designed for a "Tall Deck", unless using a manifold already cut.
Gear & Belt Drives:	Merlin IV blocks will require clearance work for gear drives and belt drives
Lubrication:	Priority main oiling system. We recommend oils designated SM/SL/SJ, 15W-40 or 20W-50.
Oil System Features:	As is, block is set up for OE style internal oil pump. Block may be converted to a dry sump oiling system.

Oil Restrictors:	MERLIN IV blocks use oil restrictor part # 832665-2.
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. Pan rail is dual drilled for stock oil pans and aftermarket race oil pans.
Clearance:	MERLIN III with a 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 connecting rods. Camshaft Base circle may vary so this must be checked also make sure to degree camshaft prior to checking) with minor clearance. For more piston wall there is .100 inch of material left for those running less stroke.
Camshaft:	Is in the stock location.
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.
Cyl. Head Bolt Holes:	Threads 7/16. Head bolt holes are blind tapped and do not extend into the water jackets. MERLIN IV blocks incorporate an extra row of four head bolt bosses 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 55 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.

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 GM +/- tolerances. Merlin blocks are supplied with the following specs:

Deck Height:	9.805 or 10.205 +/- .005.
Cylinder Bore:	4.240, 4.490 or 4.590 +/- .005.
Main Journals:	2.9375 +/- .0005.
Lifter Bores:	.8437 +/- .0005.
Stroke Notch:	9.800 deck, 4.375. 10.200 deck, 4.750.

It is the responsibility of the engine builder to finish the block to his or the end users preferences. If a 3.000 main journal bore is desired, it can be finished as such. MERLIN III: Freeze plugs, dowel pins, oil galley plugs and cam bearings are not included or installed. MERLIN X: Freeze plugs, dowel pins, oil galley plugs and cam bearings are included or installed. Stock Chevrolet hardware can be used.

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. Make sure block is free of debris. Clean block thoroughly.
3. 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.
4. 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
5. MERLIN III and MERLIN X blocks come with a deck height of 9.800 (standard deck) or a 10.200 deck height (tall deck). If a lower deck height is desired, **PLEASE** measure the deck before any cutting is done. **REMEMBER: MEASURE TWICE AND CUT ONCE.**

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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Rev 05-17