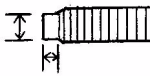
DART Pro Iron Small Block - Technical *Notes*

Deck Height	.....	**9.025"**
Bore	.....	**4.00" or 4.125" unfinished**
Main Bearing Size	.....	**350 (2.45") & 400 (2.65")**
Weight	.....	**175 lbs**
Largest Recommended Bore	.....	**4.165"**
Camshaft Bearing Diameter	.....	**BBC – 2.120"**
Camshaft Position	.....	**Standard SBC**
Cylinder Wall Thickness, min.	.....	**.200" - .230" @ 4.125" bore**
Deck Thickness, min	.....	**.675"**

Torque Specs - Main Caps	**1 - 5**	**7/16" studs**	**65 ft lbs**
	1 & 5	**3/8" studs**	**35 ft lbs**

Early stock SBC 2 hole oil filter adaptor is needed.
Standard SBC timing chain, timing cover, gear or belt drive can be used.
Actual deck height will be .005"- .010" taller for additional machining requirements.
Standard 1980-1985 SBC oil pan can be used with right side dipstick.
Cam bearing OD should be deburred before bearing installation.
When initially removing main caps, the caps & block should be deburred before reinstalling. This will insure that correct main size is maintained.

Standard SBC head studs or bolts may be used.
Head stud holes are blind. They do not go into the water jacket.
A sealant/antiseize *must* be used on the head studs. Loctite # 620 is recommended.
Studs should *NEVER* be torqued into block. They should only be lightly snugged.
It is preferred that a bullet be machined on the end of the head stud where it bottoms in the block to center the stud before tightening.



.350" OD x .150" Deep

Press-in freeze plugs are available 1 5/8" dia.
Press-in cam plug dia. = 2.215" BBC PN# 32520000

Oil pump dowel pins should be .250" OD. Stock GM pins are only .246" OD.

DIPSTICK: Chevy 1980-1985 is required, you will have to cut off the area about 1" below the shoulder.
Dipstick Tube installation: If an oil dipstick tube is used, after installation fill, the engine with oil and remark the dipstick indicator Full mark if necessary. In certain applications you may need to modify or bend the tube to properly install it. The tube is a press fit.

Honing: Hone block to finished size with 220 grit @ 40 amps of load on sunnen hone.
Make 3 strokes on each cylinder with 280 grit @ 20 amps.
Make 3 strokes on each cylinder with 400 grit @ 20 amps.

When re-honing start with 220 grit, get cylinder straight and round or just deglaze. Then do same procedure as above.

OIL PUMP DRIVESHAFT
Standard SBC 350 main oil pump drive shaft.

Note: Be sure to check distributor to oil pump shaft clearance with distributor, intake manifold and oil pump installed on the block.

PRIORITY MAIN OIL SYSTEM:
Oil is directed to the main bearings first, then to the cam bearings.
There are NO provisions for oil restrictors

OIL PUMP:
Melling M55A Standard volume SBC oil pumps are recommended, high volume high pressure oil pumps are NOT recommended.

LIFTERS:
SHP Pro blocks are machined for .904" lifters. When using roller lifters you must use a link bar style lifter +.300" taller than stock. This is due to the taller lifter boss used for the factory hydraulic roller setup.

NOTE: If cast iron solid lifters are used in an SHP Chevy block, the block must be fitted with steel lifter bushings. The SHP blocks are cast from grey iron and cast iron lifters can cause galling in the lifter bores.

NOTE: Due to variations in lifter sizes and clearance preferences, most of our engine builder customers prefer the lifter bores sized on the small end of the specification. Sometimes these bores will need to be lightly honed.

OIL PANS:
1980-1985 Chevy pans are recommended. Please inquire with pan manufacture for fitment for your application. Due to the larger wider main caps it is best to test fit oil pan first to verify clearance on the main caps.

NOTE: The fuel pump pushrod bore is machined for a .500" rod. Be sure to check the clearance because of the inconsistencies in the diameters of push rods.

WARNING: with a multitude of different crank, rod and piston combinations available it is important to check clearance of all moving parts (especially crankshaft counterweight to block) before attempting any type of assembly.
It is good engine building procedure to ALWAYS check the fit of the distributor before any machining or cleaning is done.

L IFTERS
SHP blocks are designed to work with 1987-1995 Factory Hydraulic roller setups. If you choose to run a link bar lifter it will require the .300 taller lifters. This is due to the taller lifter boss used for the factory hydraulic roller setup. If .300"tall lifters are used then you must install them prior to installing the cylinder heads, due to the distance between the lifter boss and head being closer together. They will not fit after the head is installed.

NOTE: If you are using aftermarket cam profiles you must use the correct components for the application.

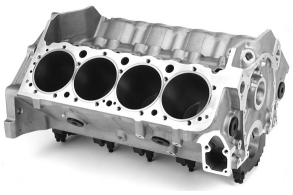
NOTE: If cast iron solid flat tappet lifters are used in the SHP Chevy block, the block must be fitted with bronze lifter bushings or a tool steel lifter should be used. The SHP blocks are cast from grey iron and any iron lifters can cause galling and then seizure in the lifter bores resulting in engine damage.

NOTE: Due to variations in lifter sizes and clearance preferences, most of our engine builder customers prefer the lifter bores sized on the small end of the specification. Sometimes these bores will need to be lightly honed.

Dart SBC SHP Pro Iron Block

Part#	**31161112 4.000” bore 31161212 4.125” bore**
Material:	**Cast Iron**
Bore:	**4.000” or 4.125” unfinished**
Bore & stroke:	**4.165”x 3.875”**
Cam bearing bore ID:	**BBC – 2.120”**
Cam bearings:	**Special coated, grooved, w/3 oil holes PN# 32210010 (Set)**
Cam Bearing O.S.	**+ .010”, +.020”, +.030”**
Cam bearing press:	**.002”**
Cam journal OD:	**Standard BBC – 1.949” Dia.**
Cam Plug:	**Standard BBC – 2.215” cup plug PN# 32520000 (Ea.)**
Cylinder Wall Thickness:	**.200”- .230” @ 4.125”**
Deck Height:	**9.025”**
Deck Thickness:	**.625”**
Fuel Pump:	**Mechanical pump provision**
Fuel Pump Pushrod:	**Standard Length**
Freeze Plugs:	**Press in cup plugs 1 5/8” Dia.**
Lifter Bores:	**.904” Dia.**
Main bearing size:	**2.450” (350) 2.650” (400)**
Main bearing bore:	**(350) 2.6405 – 2.6415 (400) 2.8405 – 2.8401”**
Main Cap Studs:	**#1 7/16” Inner & 3/8” Outer**
	#2, #3, #4 7/16” Inner & Outer Splayed
	#5 7/16” Inner & 3/8” Outer
Main cap press:	**.005”**
Main caps:	**Billet Steel**
Main cap register:	**Deep stepped register on each side (no need for dowels)**
Oil system:	**Wet Sump - Main Priority Oiling (can use dry sump)**
Oil Pump shaft:	**350 main = Stock shaft (.481” OD)**
Oil Restrictors	**No lifter oil galley restriction**
Oil Filter:	**Standard SBC filter uses 2 bolt filter adapter**
Oil Pan:	**Standard SBC oil pan with right side dipstick.**
Rear Main Seal	**350 main - STD 2 piece seal 400 main standard 2 piece seal**
Serial No.	**Left front & Main caps**
Starter:	**Standard SBC**
Stud holes, Head:	**Blind holes**
Timing chain/gears	**Standard SBC components**
Timing Cover:	**Can use stock cover.**
Torque Specs:	**1 - 5 7/16” Studs 65 ft lbs**
	1 & 5 3/8” Studs 35 ft lbs
Weight:	**175 lbs.**

IMPORTANT



This Block should be assembled only by experienced, professional engine builders.

INSPECTION

Upon receiving this block it should be thoroughly inspected for shipping damage.

Prior to machining and assembly please inspect the following items:
Cylinder bores - Oil passages - Deck surfaces - All threads

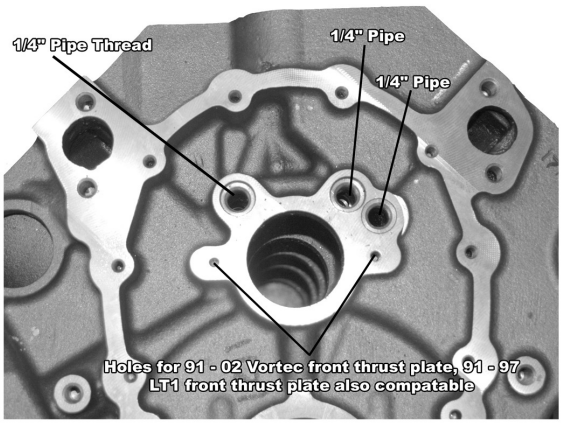
MEASURING & MACHINING

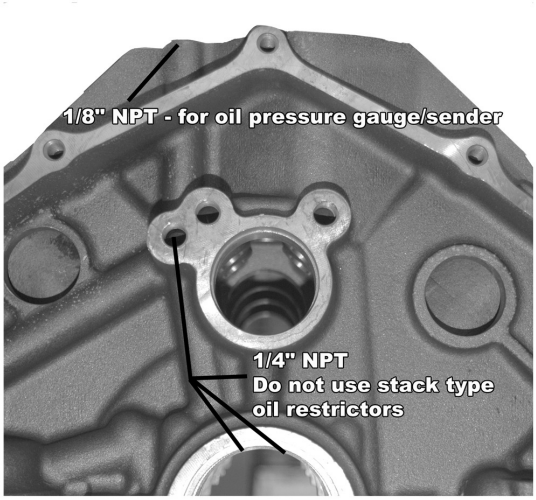
- All initial measuring should be done before any machining has begun.
- Decks are CNC machined to standard deck heights. If you need a particular deck height always measure before machining.
- Main journals are finish line honed to the low to middle of the specification. They should be measured for your preference. If you have need for a different diameter you must realign hone this yourself.
- Crankshaft & rod clearance should always be checked before any machining is started. You need .060" clearance for rotating counterweights and rods.
- Due to variations in OD dimensions of the numerous lifter manufacturers, lifter bores are finish honed on the tight side of the tolerance to leave room for lifters that are larger than the standard.

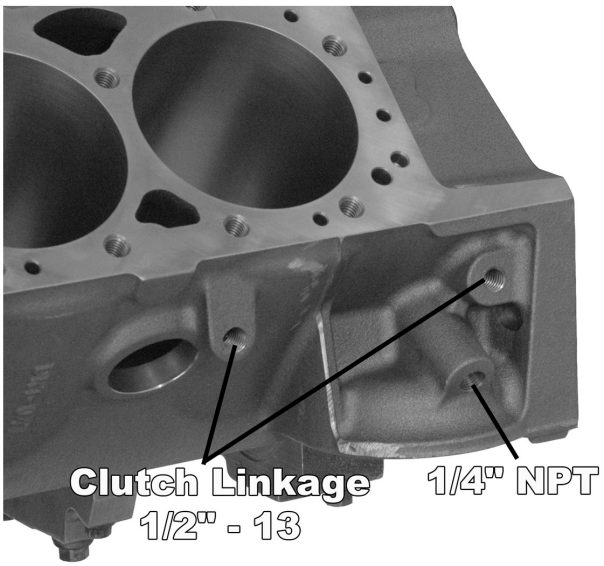
WASHING

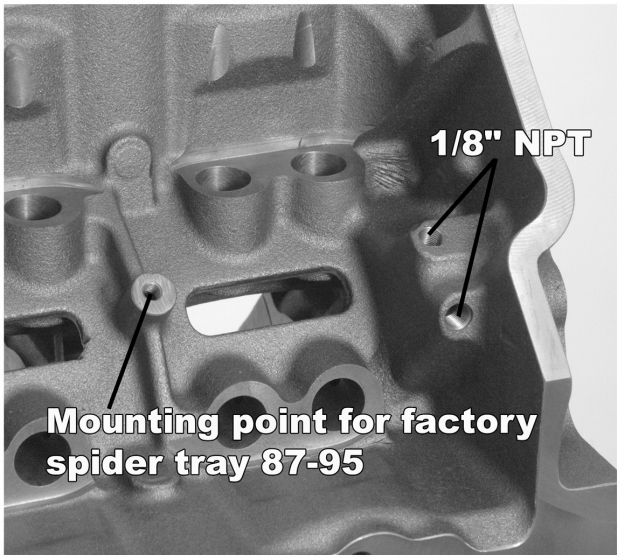
- Final washing should be very thorough, paying particular attention to all oil galleys. Use hot soapy water and rinse with hot water first, followed by cold water which helps reduces rust.

Dart Small Block Chevy
SHP Engine Block





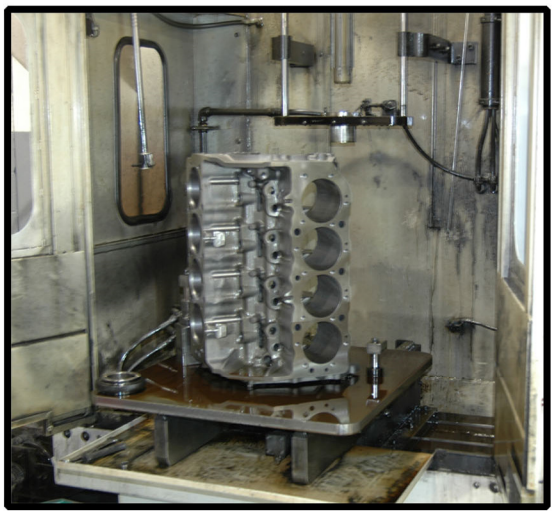




Make Sure You Have Everything You Need For Your New Block!



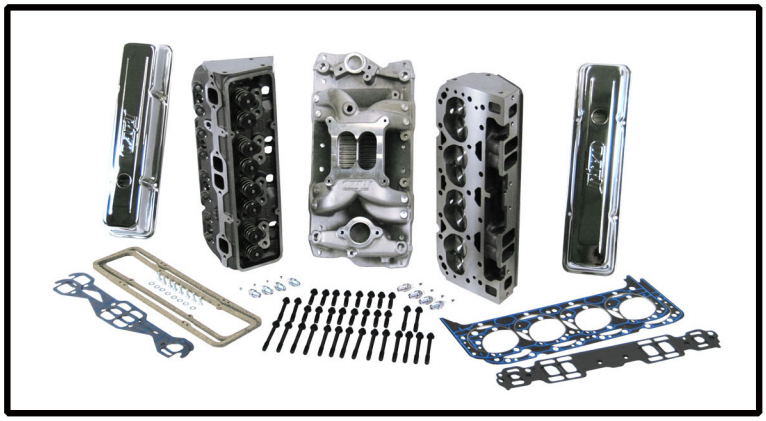
Assembly Lubricant
 # 70000009



Block Prep
Final lifter and hone spec.
Finish machined to your specs.
Final prepped and washed.
Pipe plugs, cam bearings and freeze plugs installed.
 # BLOCK PRP



SBC Block Parts Kit
 # 32000001



SBC Top End Kits
 # 01111111 - 01210004

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