

## ZZ572/620 (12499190) and ZZ572/720R (12498825) Short Block Specifications

Specifications Part Number 88962927

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This publication provides general information on components and procedures that may be useful when installing or servicing a ZZ572 short block assembly. Please read this entire publication before starting work. Also, please verify that all of the components listed in the Package Contents section below were shipped in the kit.

The information below is divided into the following sections: package contents, torque information, ZZ572/620 and ZZ572/720R short block assembly specifications, and a service parts list.

The ZZ572 short block assembly incorporates modern technology in a package that can be installed in applications where 366cid and larger displacement Big Block Chevrolet (BBC) V-8s were originally used. This short block is assembled using brand new, premium quality components. Due to the wide variety of applications in which a ZZ572 short block assembly can be used, some procedures and recommendations may not apply to specific applications.

The ZZ572 short block assembly in an all new Gen VI Tall Deck Bow Tie Cylinder Block manufactured on new production tooling; consequently you may encounter dissimilarities between the ZZ572 tall deck BBC short block assembly and previous versions of the BBC V-8. In particular is the fact that the ZZ572 tall deck BBC short block assembly in a %Tall Deck+, meaning the distance from the crankshaft centerline measured perpendicular to the deck surface is 10.2" or .400" greater than a %Short Deck+BBC (9.8"). This increase may cause interference in some applications where a short deck BBC was previously installed. Also, the ZZ572 engines are internally balanced and only should be used with internally balanced flywheel, flexplates, and harmonic dampers. In general, items such as motor mounts, bell housing, starters, etc. can be transferred to this ZZ572 tall deck BBC short block assembly when it is installed in a vehicle originally equipped with a BBC V-8 engine. However, such items as intake manifolds, headers, push rods, etc. are different. These differences may require modifications or additional components not included with this ZZ572 tall deck BBC short block assembly. When installing a ZZ572 tall deck BBC short block assembly in a vehicle not originally equipped with a BBC V-8 it may be necessary to adapt or fabricate various components for the cooling, fuel, electrical, accessory drive system and exhaust systems.

It is not the intent of these specifications to replace the comprehensive and detailed service practices explained in the GM service manuals.

For information about warranty coverage, please contact your local GM Performance Parts dealer.

Observe all safety precautions and warnings in the service manuals when installing a ZZ572 tall deck BBC short block assembly in any vehicle. Wear eye protection and appropriate protective clothing. Support the vehicle securely with jackstands when working under or around it. Use only the proper tools. Exercise extreme caution when working with flammable, corrosive, and hazardous liquids and materials. Some procedures require special equipment and skills. If you do not have the appropriate training, expertise, and tools to perform any part of this conversion safely, this work should be done by a professional.

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ALL INFORMATION WITHIN ABOVE BORDER TO BE PRINTED EXACTLY AS SHOWN ON 8 1/2 x 11 WHITE 16 POUND BOND PAPER. PRINT ON BOTH SIDES, EXCLUDING TEMPLATES.  TO BE UNITIZED IN ACCORDANCE WITH GMSPO SPECIFICATIONS.	DATE	REVISION	AUTH
	07OC03	Initial Release - Shawn Smith	
	16FE07	Revised - Rusty Sampsel	

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**Legal and Emissions Information**

This publication is intended to provide information about the ZZ572 engine and related components. This manual also describes procedures and modifications that may be useful during the installation of a ZZ572 engine. It is not intended to replace the comprehensive service manuals and parts catalogs which cover General Motors engines and components. Rather, it is designed to provide supplemental information in areas of interest to do-it-yourself+enthusiasts and mechanics.

This publication pertains to engines and vehicles which are used off the public highways except where specifically noted otherwise. Federal law restricts the removal of any part of a federally required emission control system on motor vehicles. Further, many states have enacted laws which prohibit tampering with or modifying any required emission or noise control system. Vehicles which are not operated on public highways are generally exempt from most regulations, as are some special interest and pre-emission vehicles. The reader is strongly urged to check all applicable local and state laws.

Many of the parts described or listed in this manual are merchandised for off-highway application only, and are tagged with the Special Parts Notice+reproduced here:

**Special Parts Notice**

This part has been specifically designed for Off-Highway application only. Since the installation of this part may either impair your vehicle's emission control performance or be uncertified under current Motor Vehicle Safety Standards, it should not be installed in a vehicle used on any street or highway. Additionally, any such application could adversely affect the warranty coverage of such an on-street or highway vehicle.

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**Package contents:**

<u>Item</u>	<u>Description</u>	<u>Quantity</u>	<u>GM Part Number</u>
1	Short Block Assembly (ZZ572/620)	1	12499190
	OR		
1	Short Block Assembly (ZZ572/720R)	1	12498825
2	Short Block Instructions	1	88962927

**Caution**

This engine assembly needs to be filled with oil and primed. You should add the specified oil (see start-up instructions) to your new engine. Check the engine oil level on the dipstick and add accordingly.

**Start-up and Break-in Procedures**

1. After installing the engine, ensure the crankcase has been filled with 20w50 racing motor oil (non-synthetic) to the recommended oil fill level on the dipstick. Also check and fill as required any other necessary fluids such as coolant, power steering fluid, etc.
2. The engine should be primed with oil prior to starting. Follow the instructions enclosed with the tool. To prime the engine, first remove the distributor to allow access to the oil pump drive shaft. Note the position of the distributor before removal. Install the oil priming tool, GM part number 12368084. Using a 1/2" drill motor, rotate the engine oil priming tool clockwise for three minutes. While you are priming the engine, have someone else rotate the crankshaft clockwise to supply oil throughout the engine and to all the bearing surfaces before the engine is initially started. This is the sure way to get oil to the bearings before you start the engine for the first time. Also, prime the engine if it sits for extended periods of time. Reinstall the distributor in the same orientation as it was removed.

After the engine has been installed in the vehicle, recheck the oil level and add oil as required. It is also good practice to always recheck the ignition timing after removal and reinstallation of the distributor. See step 4 or engine specifications for the proper timing information.

3. Safety first. If the vehicle is on the ground, be sure the emergency brake is set, the wheels are chocked and the car cannot fall into gear. Verify everything is installed properly and nothing was missed.
4. Start the engine and adjust the initial timing. If using the deluxe engine configuration, set the ignition timing to 15° before top dead center (BTDC) and the engine idle to 950 RPM (ZZ572/620) or 1200 RPM (ZZ572/720R) with a timing light and the vacuum disconnected and plugged. Rotate the distributor counterclockwise to advance the timing. Rotate the distributor clockwise to retard the timing. Leave the vacuum advance disconnected.
5. When possible, you should always allow the engine to warm up prior to driving. It is a good practice to allow the oil sump and water temperature to reach 180°F before towing heavy loads or performing hard acceleration runs.
6. Once the engine is warm, set the total advance timing to 36° at 4000 RPM if using the deluxe engine configuration.
7. The engine should be driven at varying loads and conditions for the first 30 miles or one hour without wide open throttle (WOT) or sustained high RPM accelerations.
8. Run five or six medium throttle (50%) accelerations to about 5000 RPM and back to idle (0% throttle) in gear.
9. Run two or three hard throttle (WOT 100%) accelerations to about 5000 RPM and back to idle (0% throttle) in gear.
10. Change the oil and filter. Replace with 20w50 racing motor oil (non synthetic) and a PF35L AC Delco oil filter. Inspect the oil and the oil filter for any foreign particles to ensure that the engine is functioning properly.
11. Drive the next 500 miles under normal conditions or 12 to 15 engine hours. Do not run the engine at its maximum rated engine speed. Also, do not expose the engine to extended periods of high load.
12. Change the oil and filter. Again, inspect the oil and oil filter for any foreign particles to ensure that the engine is functioning properly.
13. Do not use synthetic oil for break-in. It would be suitable to use synthetic motor oil after the second recommended oil change and mileage accumulation. In colder regions, a lower viscosity oil may be required for better flow characteristics.

**ZZ572/620 and ZZ572/720R High Performance Engine Torque Specifications:**

**Note: See Deluxe Specifications for additional torque values not included here.**

<b>Fastener</b>	<b>Torque (lb.ft.)</b>	<b>Torque (Nm)</b>	<b>Thread Treatment</b>	<b>Notes</b>
Main bolt (inner/outer)	110	149	30 weight oil	Torque sequence
Windage tray studs	110	149	30 weight oil	. -
Galley plug, 1/8" NPT	15	20	Teflon pipe sealant	For cast iron
Galley plug, 1/4" NPT	20	27	Teflon pipe sealant	For cast iron
Galley plug, 1/2" NPT	40	54	Teflon pipe sealant	For cast iron
Oil filter adapter	50	68	Blue Loctite	. -
Connecting rod bolt	80	109	30 weight oil	. -
Coolant plug, 3/4" NPT	55	75	Teflon pipe sealant	For cast iron

**ZZ572/620 and ZZ572/720R High Performance Engine Assembly Specifications:**

Displacement:	572 cubic inches
Bore x Stroke:	4.560 inch x 4.375 inch
Deck Height	10.2" from crankshaft centerline
Block:	Cast iron, four-bolt intermediate mains with splayed outers
Crankshaft:	4340 forged steel with a one-piece rear seal design. Internally balanced.
Connecting Rods:	6.535" center to center. Forged 4340 steel. H-beam style, shot peened
Pistons:	Forged aluminum with full floating wrist pins
Piston rings	Plasma-moly rings
Oil Pressure (Normal):	55 psi @ 1500 RPM
Recommended Oil	20w50 synthetic racing (after break-in)
Firing Order:	1-8-4-3-6-5-7-2

Information may vary with application. All specifications listed are based on the latest production information available at the time of printing.

**Starter:**

The starter recommended by GM is a high-torque mini starter. It is a compact starter that delivers plenty of torque in a small package which offers increased clearance for extended oil pans and exhaust systems. It is available either black, GM part number 12361146, or chrome, GM part number 12363128.

**ZZ572/620 Service Parts List:**

<u>Part Number</u>	<u>Quantity</u>	<u>Name</u>
12499190	1	Engine Asm, Partial
25534368	1	Block Asm, Eng
455005	5	Bolt/Screw, Cr/Shf Brg C (Long)
15651246	10	Bolt/Screw, Cr/Shf Brg C (Short)
88962212	1	Bearing, Cr/Shf
88961556	8	Bearing, Conn Rod (Kit)
88961554	1	Crankshaft
12499434	1	Bearing Kit, Cam/Shf
88962926	8	Rod Asm, Conn
6264902	1	Seal-Cr/Shf #5 Brg Cap Oil
10101164	1	Seal Asm-Cr/Shf Rr Oil
12499212	8	Ring Kit, Pstn
88962925	8	Piston Asm (W/Pin)

**ZZ572/720 Service Parts List:**

<u>Part Number</u>	<u>Quantity</u>	<u>Name</u>
12498825	1	Engine Asm, Partial 572
25534368	1	Block Asm, Eng
455005	5	Bolt/Screw, Cr/Shf Brg C (Long)
15651246	10	Bolt/Screw, Cr/Shf Brg C (Short)
88962212	1	Bearing, Cr/Shf
88961556	8	Bearing, Conn Rod (Kit)
12499434	1	Bearing Kit, Cam/Shf
12508998	5	Bearing-Camshaft
88961554	1	Crankshaft
88963227	8	Piston Asm, (W/Pin)
12499212	8	Ring Kit, Pstn
88962926	8	Rod Asm, Conn Kit