

# BluePrint Muscle Series™ Cylinder Heads

## Installation Instructions

### 195cc S/B Chevy Aluminum Cylinder Heads

**IMPORTANT:** Read the following instructions thoroughly before installing cylinder heads.

A part specification sheet was supplied with your new BluePrint Muscle Series™ cylinder head. The engine builder/installer is responsible for referring to this part specification sheet when planning your build. You must first determine piston volume and shape and cam profile. It is standard practice to always check piston-to-chamber clearance when using a dome piston and piston-to-valve clearance for all piston designs. Blueprint Engines will not assume any responsibility for a poorly designed engine.

Your new cylinder heads were washed and prepared for installation prior to packaging. However, be sure to inspect them thoroughly for any possible shipping damage prior to installation. Be sure to also inspect each head carefully for possible shipping debris-and remove any debris if present.

**ROCKER STUDS AND GUIDE PLATES ARE INSTALLED FOR SHIPPING PURPOSES ONLY! THE STUDS MUST BE SEALED AND TORQUED DOWN BEFORE RUNNING THE ENGINE!**

**Cylinder Head Gaskets:** We recommend Fel-Pro® #1003 cylinder head gaskets for all engines using up to a 4.100 bore. Fel-Pro® #1034 gaskets should be used for 4.100 or larger bore. Applications requiring steam holes should use the Fel-Pro® #1014 gasket. Late Model LT-1 reverse cool applications use GM or Fel-Pro® #1074 gaskets.

**Intake Gaskets:** Fel-Pro® #1205 or #1206 intake gaskets can be used depending on your intake manifold choice. A small amount of silicone is recommended around the water ports and on the bottom of the intake ports. It is recommended you follow the torque specs provided by your intake gasket manufacturer. We recommend discarding the cork gaskets on the ends of the intake and using a good silicone sealer.

**Exhaust Gaskets:** Fel-Pro® #1404 gaskets or their equivalent are recommended for the exhaust gaskets.

**Valve Cover Gasket:** Fel-Pro® #VS12869T silicon-molded rubber with steel core gasket is recommended for the valve cover gasket.

**Cylinder Head Bolts and Studs:** A quality relief ground bolt or stud is preferred. You must use a washer between the head and the fastener to prevent galling. All aluminum cylinder heads should be torqued to 65ft/lbs. This should be done in the proper General Motors sequence in 10-ft/lb increments beginning at 40ft/lbs. Moly lube should be applied between fasteners, washers and areas around head bolt to prevent galling and improper torque values. All high compression, supercharged, turbocharged & nitrous engines should receive a re-torque after the first run-in and complete cool down. A good general-purpose sealer like Permatex should be applied to all threaded areas that penetrate the block water-jacketing.

**Pushrod Guide Plates:** Pushrod guide plates are supplied with each cylinder head. Studs should be torqued to 45ft/lbs. Silicone sealer must be used where the stud hole intersects the intake port. For proper alignment of the rocker arms over the center of the valve, simply loosen the rocker studs and shift the guide plate back and forth until the proper alignment is achieved, then torque to 45ft/lbs.

**Pushrods:** Chrome Moly heat-treated pushrods with a 5/16" wall should be used to avoid wear of the pushrod from contact with the guide plate. It is recommended you use a checking, adjustable-length pushrod to determine the correct pushrod length for correct valve train geometry.

**Rockers and Rocker Arms:** Offset rockers are not required. Clearance between rocker arms and the retainers should be checked. If using a posi-lock, be sure to check clearances from the inner rocker body to the posi-lock at maximum lift. See Pushrod Guide Plates section for proper alignment.

**Intake and Exhaust Valve Seats:** Both intake and exhaust valve seats are heat-treated and compatible with unleaded fuels.

**Spark Plugs:** A 14mm x 3/4" gasket-style spark plug must be used, not a tapered-seat style. For race applications, Champion C59YC Autolite 3910 or 51, A/C R41 CXLS & NGK R5672A-9 are a good starting point. For street applications, use AC FR3LS, AC 41629, or Champion RC9YC spark plugs or their equivalent.

Plug selection is based on several factors, including rpm level, compression ratio and type of fuel. All of the above plugs are a starting heat range. Blowers or nitrous applications usually require plugs that are one to two heat ranges colder. See ignition manufacturer recommendations to determine spark plug gap. Important: Apply anti-seize to all spark plugs to ensure a long thread life. Refer to the plug manufacturer's specifications for proper torque.

**Antifreeze:** A 50/50 mix of antifreeze in the cooling system is recommended to prevent corrosion of aluminum heads. Be sure to use distilled/purified water in the mix, available in most supermarkets. Do NOT use tap water.

**Accessory Drive Brackets, Holes and Bolts:** For late model vehicles with one-piece accessory drive brackets that bolt to the block and cylinder heads (alternator, air conditioner, etc), you may find it necessary to elongate the holes in the brackets to obtain proper alignment. Many factors determine the location of the accessory holes on the ends of the heads. It is always recommended to use an anti-seize lubricant on accessory bolts.