



## E-STREET CHRYSLER ALUMINUM CYLINDER HEADS for B / RB Big Block Chrysler V8s Part #5090, 5093 INSTALLATION INSTRUCTIONS

Please study these instructions carefully before installing your new cylinder heads. If you have any questions, do not hesitate to contact our **Technical Hotline at: 1-800-416-8628**, 7:00 am - 5:00 pm, Monday through Friday, Pacific Standard Time.

**DESCRIPTION:** Designed for non-emissions 1961-1978 Chrysler B 361, 383 and 400 c.i.d. engines and RB 413, 426 wedge and 440 c.i.d. engines. #5090 features a 75cc combustion chamber which can be used with stock pistons to retain the 9.5:1 compression ratio. #5093 feature an 84cc combustion chamber which allows for near stock compression when using the correct head gaskets. These cylinder heads also feature 210cc intake ports and 70cc exhaust ports. Other outstanding features include phosphor-bronze valve guides, interlocking, ductile iron valve seats and premium one-piece, stainless steel, high-flow 2.140" and 1.810" intake and exhaust valves. Heat-treated, machined steel retainers and valve locks long with heavy duty valve springs work with cams having valve lifts up to .600". These powerful heads use the stock location for intake flange and bolt holes, rocker shafts, and valve cover rails, for compatibility with original equipment and aftermarket parts. Exhaust flange has been extended out .125" in order to provide dry exhaust bolt/stud holes. Exhaust bolt holes feature helicoil thread inserts for added strength and durability. Spark plugs have been re-oriented to a 15-degree angle to improve combustion efficiency.

The complete cylinder heads are assembled with the following components:

- Stainless steel, one-piece, swirl-polished intake and exhaust valves with under-cut stems for increased flow
- 2-ring positive oil control seals
- Edelbrock Sure-Seat valve springs #5792
- Retainers #9644
- Valve keepers #9616
- Valve spring seats #5771

Complete cylinder heads are assembled and prepared for installation right out of the box. **Bare cylinder heads will have valve guides and seats installed, but will require final sizing and a valve job to match the valves you will be using.**

### IMPORTANT NOTES: READ BEFORE BEGINNING INSTALLATION!

For a successful installation, the Edelbrock E-Street Cylinder Heads require some components other than original equipment parts. To complete your installation, you will need the following items:

- Head gaskets; Edelbrock #7325, Fel-Pro #1009, or equivalent (see installation instructions).
- Intake manifold gaskets; Fel-Pro #1214 for B 361-400 c.i.d. and #1215 for RB 413-440 c.i.d. or equivalent. Edelbrock #7225 may be used in either application, when a stock style valley pan is used.
- Exhaust gaskets; Fel-Pro #1414 or equivalent

**NOTE:** Edelbrock Cylinder Head Gasket Set #7366 may also be used in place of individual gaskets. This set contains all gaskets necessary for cylinder head installation, including cylinder head, intake (requires stock type valley pan), exhaust, and valve cover gaskets.

- Edelbrock head bolt kit #8591; (see instructions below)
- Adjustable rocker arm assembly
- Pushrods compatible with adjustable rocker arm assembly stock length - 440 c.i.d.- 9.125" hydraulic flat tappet, 9.250" solid flat tappet 383 c.i.d.- 8.250" hydraulic flat tappet, 8.600" solid flat tappet
- 14mm x 3/4" reach gasketed spark plugs; Champion RC-12YC or equivalent

### CHECKING PISTON-TO-VALVE, PISTON-TO-BORE AND PISTON-TO-HEAD CLEARANCES:

Prior to installation, it is highly recommended that valve-to-piston clearances are checked and corrected to minimum specs, if necessary. These cylinder heads have larger-than-stock valve sizes and may not work with the valve pockets in stock pistons, especially if a high lift cam is used. The use of aftermarket pistons and/or custom machining to your pistons may be required. Actual valve-to-piston clearance should be specified by your camshaft manufacturer. Valve-to-bore clearance should also be checked, and the top of the bore notched for clearance, if necessary.

**SPECIAL NOTE:** Use P/N 60149/60919 (Bare), P/N 60189/60929 (Flat Tappet), or P/N 60185/60925 (Hydraulic Roller) for high compression 440 engines with above deck piston height. (Pistons protrude above the deck on the block). In all cases, you must make sure that there is at least .035" clearance between the piston and any part of the cylinder heads.

**ACCESSORIES:** Although Edelbrock E-Street Cylinder Heads will accept OEM components (valve covers, intake manifold, etc.), we highly recommend that premium quality hardware be used with your new heads:

**Head Bolts or Studs:** High quality head studs or head bolts with hardened washers must be used to prevent galling of the aluminum bolt bosses. Edelbrock head bolt kit #8591 includes all bolts which must be used with these cylinder heads.

**Rocker Arms and Valve Train:** Adjustable rocker arms must be used with cams having greater than stock valve lift. We recommend original equipment or aftermarket adjustable rocker arm assemblies, along with matching pushrods. Use supplied spacer shims as needed to ensure adequate clearance between pushrods and intake port walls. **CAUTION:** Before installing rocker shafts, check for burrs or other obstructions on the machined saddles where the shaft sits. Remove any burrs and clean saddles thoroughly, if necessary.

**Valve Covers:** Edelbrock E-Street cylinder heads accept 1963 and later stock valve covers. They also will accept Edelbrock valve covers #4491.

**Intake Manifold:** Although stock intake manifolds will fit, Edelbrock E-Street Chrysler Cylinder Heads are matched in size and operating range with Edelbrock Performer Intake Manifolds #2186 for B engines and #2191 for RB engines. Edelbrock #7225 intake gaskets (if used with stock style valley pan - "B" or "RB" engines), Fel-Pro intake manifold gaskets #1214 for "B" and #1215 for "RB" engines, and Mopar performance #P4286825 for "B" and #P4286826 for "RB" engines are recommended. Follow the manifold or gasket manufacturer's recommendations for installation.

**Exhaust Headers:** Some headers or exhaust manifolds designed for original equipment heads will have reduced spark plug boot clearance. Check and make sure there is enough header/manifold-to-spark plug clearance BEFORE INSTALLING CYLINDER HEAD ON ENGINE. Exhaust ports are CNC-profiled to match Fel-Pro #1414 exhaust gaskets which are recommended for this application.

**Spark Plugs:** Use 14mm x 3/4" reach gasketed spark plugs. Heat range may vary by application, but we recommend Champion RC-12YC (or equivalent) for most applications. **Use anti-seize on the plug threads to prevent galling in the cylinder head, and torque to 10 ft./lbs. Do not overtighten sparkplugs! If short reach plug is used, poor performance and possible engine damage may occur.**

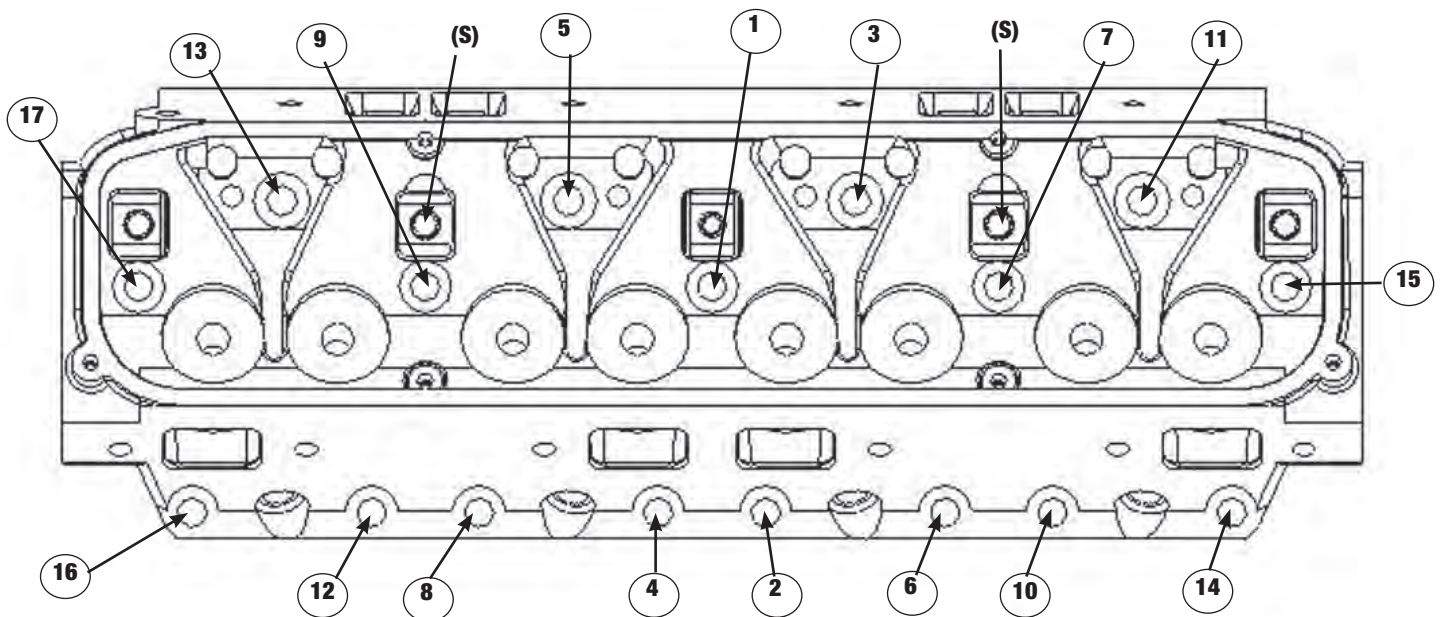
**INSTALLATION:** Installation is the same as for original equipment cylinder heads. Consult service manual for specific procedures, if necessary. Be sure that the surface of the block and the surface of the head are thoroughly cleaned to remove any oily film before installation. Use alcohol or lacquer thinner on a lint-free rag to clean. Apply oil or suitable thread lubricant to head bolt threads and the underside of bolt heads and washers. Torque to 70 ft./lbs. in three steps (40, 55, 70)

following the factory tightening sequence (**see Figure 1**). Apply a continuous 1/8" bead of automotive RTV silicone sealer to end sealing surfaces on block and along bottom of intake ports on cylinder head. Also, apply a thin bead of sealer around intake ports on cylinder head and gasket. Position intake gasket thin valley cover in place and tighten bolts down. Then, place intake manifold in position and torque manifold bolts to 25 ft. lbs.

**Notes:** 1) *Rocker shaft hold-down studs, nuts and washers for 2 places marked (S) in each head are supplied in this kit.* 2) *Double nut both studs and screw them in until they reach the bottom. Install rocker shaft, factory concave washer and hard washer supplied with this kit. Apply 30W oil to fine threads and under nuts and washers and torque nuts to 25 ft./lbs. A head bolt re-torque is recommended after initial start-up and cool-down (allow 2-3 hours for adequate cooling).*

**SPECIFICATIONS:**

Head Bolt Torque:	70 ft./lbs. (in steps of 40, 55, 70)
Rocker Shaft Bolt Torque:	25 ft./lbs.
Combustion Chamber Volume:	#5090 - 75cc #5093 - 84cc
Deck Thickness:	5/8"
Valve Seats:	Interlocking, compatible with any fuel
Valve Size:	Intake- 2.140", Exhaust - 1.810"
Valve Spring Diameter:	1.55"
Valve Spring Installed Height:	1.880"
Valve Spring Seat Pressure:	120 lbs.
Max. Valve Lift:	.600"



**Fig. 1**  
**Diagram Showing Correct Cylinder Head Tightening Sequence**

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