



EDELBROCK E-STREET ALUMINUM CYLINDER HEADS

For Small Block Ford V8s

Part #5023 & 5025

INSTALLATION INSTRUCTIONS

DESCRIPTION: The Edelbrock E-Street Cylinder Heads are designed for street use on small block Ford 289, 302 and 351W engines. They are sold in pairs, both bare and assembled, with either 1.90" or 2.02" intake valves. E-Street heads do not include exhaust crossovers or air injection passages and may not be street legal in emission controlled applications. Edelbrock cylinder heads offer "out-of-the-box" bolt-on performance with no additional porting required. The performance range is from idle to 5500 rpm for great throttle response as well as top-end horsepower. These cylinder heads are assembled with the following components: Stainless steel one-piece intake and exhaust valves; 2-ring positive oil controls seals; 3/8" rocker studs and 5/16" guideplates. Complete cylinder heads are assembled with hardened valve spring seats and prepared for installation right out of the box. The intake and exhaust ports are CNC machine "matched" and have been designed for maximum flow velocity when matched with either the Performer or the Performer RPM intake manifold, Performer-Plus cam kit and Performer or Thunder AVS Series Carburetors. ***P/N 5023 & 5025 are designed for Flat Tappet Camshafts Only. Please consult your camshaft manufacturer for recommended valve spring specifications.***

IMPORTANT NOTE: E-Street Cylinder Heads are equipped with 1.25" diameter valve springs that have been tested to 5,500 rpm with an Edelbrock Performer camshaft. **DO NOT EXCEED 5,500 RPM WITH THESE SPRINGS.** Higher operating speeds may induce valve float which can cause severe engine damage. Performer RPM heads are recommended for higher engine speeds. Check the spring specs for your camshaft before installing these heads.

- **Head Bolts or Studs:** High quality head bolts or head studs with hardened washers must be used to prevent galling of the aluminum bolt bosses. Recommended head bolts are ARP #254-3708 for engines with 7/16" head bolt holes (289 and 302). **These heads are designed to use 1/2" head bolts. On 289-302 engines with 7/16" head bolts, you must use Edelbrock head bolt bushings with integral washers #9680 and Edelbrock head bolt kit #8552 or stock 7/16" head bolts.** Engines with 1/2" diameter head bolts (351W and 302 SVO) use Edelbrock Head Bolt Kit #8553 or stock 351W bolts with high quality head bolt washers such as ARP #200-8533. **NOTE:** It is recommended that 289-302 engines producing 380 or more horsepower (or with nitrous oxide) be converted to accept 1/2" diameter head bolts by a qualified machine shop to ensure maximum head gasket durability.
- **Rocker Arms:** Edelbrock E-Street Cylinder Heads are designed to work with stud-mounted rocker arms only. If your engine is equipped with late model pedestal mount rocker arms you will need to purchase and install stud mounted rocker arms, such as Edelbrock Rocker Set #77780. The valve springs supplied will accommodate valve lifts up to .550", which is much higher than stock rocker arms will allow. Roller rocker arms will be required if your camshaft has more than .480" lift. Stock rockers may require longer-than-stock pushrods to clear the valve springs. **WILL NOT ACCEPT RAIL ROCKERS.**
- **Valve Covers:** Because most roller rockers are physically larger than stock rockers, taller valve covers are usually required to clear them. Use Edelbrock Signature Series chrome valve covers #4260, or cast aluminum Classic valve covers #4160 for a matching fit and finish.
- **Intake Manifold:** Although stock intake manifolds will fit, the Edelbrock E-Street Cylinder Heads are matched in size and operating range with Edelbrock Performer and Performer RPM intake manifolds. Please note that E-Street cylinder heads are not compatible with Performer RPM camshafts. If these manifolds are too tall to fit under your hood, you may use the Edelbrock Torker II manifold (#5021 or #5081).
- **Exhaust Headers:** Any header or manifold designed for original equipment heads will fit the Edelbrock E-Street Cylinder Heads. Exhaust ports are CNC-profiled to match Edelbrock #7227 or Fel-Pro #1415 exhaust gaskets, which are recommended for this application. For maximum performance, the opening of exhaust header flange should match an Edelbrock #7227 or Fel-Pro #1415 gasket.

- **Spark Plugs:** Use 14mm x 3/4" reach gasketed spark plugs. Heat range will vary by application. Champion RC12YC is the recommended plug to start with for most applications, modifying the heat range from there as needed. **Use anti-seize on the plug threads to prevent galling in the cylinder head, and torque to manufacturer's specification for aluminum heads.**
- **Head Gaskets:** Edelbrock head gaskets #7313 are recommended for use with E-Street heads. Edelbrock Cylinder Head Gasket Set #7364 may also be used. This gasket set includes all gaskets necessary for installation of Edelbrock cylinder heads, including cylinder head, intake manifold, exhaust and valve cover gaskets. **NOTE:** Certain Ford SVO Performance blocks include additional blind cooling provisions on the exhaust side of the deck surface. These holes may line up with a tooling point on the deck surface of the cylinder head (identifiable as a rough low spot), which could prevent the head gasket from sealing properly. Using the gasket as a template, verify that the head will compress the gasket above any such hole before drilling. Use a small set-screw to block this passage if necessary, on blocks in which the hole has already been drilled. **NOTE:** If using Fel-Pro Print-O-Seal, or any silicone beaded gasket, you must apply a small strip of silicone to both the deck flange of the cylinder head, as shown in **Figure 1** on the next page, and the at same location on the surface of the block to prevent coolant from contaminating the oil.



Figure 1 - Silicone Strip

INSTALLATION: Before final installation of the cylinder heads, several things need to be checked to assure proper engine operation:

1. Check the upper deck to see if you have an early or late model block (not needed with 351W): a) Late model 289-302 blocks have the water passages located next to the head bolt location on the deck of the block (This block **will not** require drilling). b) Early 289-302 blocks will have the water passages located directly over the cylinder upper deck area and will require drilling 1/8" steam holes as seen in **Figure 2**.
2. **Piston to Valve Clearance** - Minimum intake valve clearance should be .080". Minimum exhaust valve clearance should be .110". The point of minimum intake valve to piston clearance will usually occur somewhere between 5° and 20° ATDC during valve overlap. The point of minimum exhaust valve to piston clearance will usually occur 20° to 5° BTDC during valve overlap. **Cylinder heads #5025 may require re-machining of the piston top eyebrows with some pistons.** Heads with 1.90" intake valves (#5023) should be compatible with stock pistons in engines that have the stock or recommended camshafts.
3. **Proper Hydraulic Lifter Pre-Load and Rocker Geometry** - Hydraulic lifter pre-load is easily adjustable due to the stud/guideplate design. Rocker geometry should be checked making sure that the contact point of the roller or pad on a stock rocker remains properly on the valve tip and does not roll off the edge. Visual inspection of the rockers, valve springs, retainers, and pushrods should be made to ensure that none of these components come into improper contact with each other. If problems with valve train geometry occur, simple changes such as pushrod length may be required.

OTHER ASSEMBLY TIPS:

- When installing the sparkplugs and exhaust manifolds, be sure to use a high temperature anti-seize compound on the threads to reduce the possibility of thread damage in the future.
- **Do not exceed a torque of 16-18 ft/lbs on the intake manifold bolts and lubricate the bolt threads prior to assembly.**
- If pushrod to cylinder head contact is a problem, loosen rocker studs and re-position guideplate as needed for clearance.
- Installation is the same as for original equipment cylinder heads. Consult service manual for specific procedures, if necessary. Head gasket recommendations are listed in the head gasket section. 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 moly-oil mixture to head bolt threads, washer, and area under head bolt to prevent galling and improper torque readings. Torque to 70 ft./lbs. for 7/16" bolts (289/302) or 100 ft./lbs. for 1/2" bolts (351-W) in three or four steps following the factory tightening sequence (**see Figure 3**), then tighten the long (upper) head bolts to 80 ft./lbs. (7/16") or 110 ft./lbs. (1/2"). A re-torque is recommended after initial start-up and cool-down (allow 2-3 hours for adequate cooling).
- E-Street cylinder heads are assembled with valve springs that are compatible with both Edelbrock Performer and stock flat tappet camshafts (See **Specifications** table). If any other camshaft is used, check with the camshaft manufacturer for recommended spring pressures and maximum valve lift. **NOTE:** If valve springs are changed to achieve more spring pressures it will be necessary to also change rocker studs.

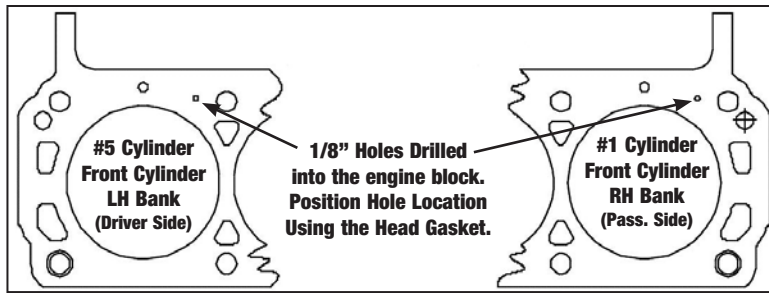


Figure 2 - Steam Hole Locations for Early 289 & 302 Blocks

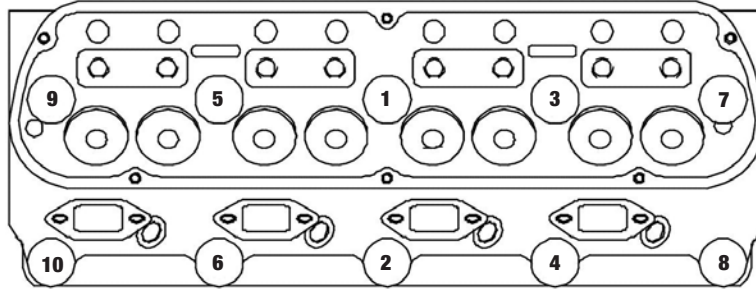


Figure 3 - Head Bolt Tightening Sequence

SPECIFICATIONS

Head Bolt Torque:	7/16" bolts - 70/80 ft./lbs. (short/long) 1/2" bolts - 100/110 ft./lbs. (short/long)
Intake Bolt Torque:	16-18 ft./lbs.
Rocker Studs:	3/8"
Rocker Stud Torque:	45 ft./lbs. (7/16"-14)
Combustion Chamber Volume:	58-60cc
Intake Port Volume:	170cc
Exhaust Port Volume:	60cc
Deck Thickness:	5/8"
Valve Seats:	Hardened, interlocking ductile iron, compatible with unleaded fuels
Valve Size:	
#5025:	Intake - 2.02", Exhaust - 1.60"
#5023:	Intake - 1.90", Exhaust - 1.60"
Valve Locks:	11/32" x 7° (#9611)
Valve Spring Retainers:	7° 4140 steel
Valve Spring Diameter:	1.45"
Valve Spring Installed Height:	1.750"
Valve Spring Seat Pressure:	125 lbs.
Valve Spring Open Pressure:	325 lbs. @ .550" lift
Max. Valve Lift:	.550"
Pushrod Guideplates:	5/16" Hardened steel
Rocker Arms:	stock (except rail style) or aftermarket roller type
Pushrods:	5/16" hardened pushrods are required for use with guideplates
Spark Plugs:	14mm x 3/4" reach gasketed seat
Recommended Intake Gasket:	Edelbrock #7220
Recommended Exhaust Gasket:	Edelbrock #7227