



PERFORMER ALUMINUM CYLINDER HEADS

FE Ford V8s 390-427-428

#6005, #6006, #6007, & #6008

INSTALLATION INSTRUCTIONS

Please study these instructions carefully before installing your new cylinder heads. If you have any questions or problems, please call our **Technical Hotline at: 1-800-416-8628**, 7:00 am – 5:00 pm, Pacific Standard Time, Monday through Friday or e-mail us at edelbrock@edelbrock.com.

DESCRIPTION: The Edelbrock Performer RPM FE Cylinder Heads are designed for street high performance use, and are interchangeable with original equipment FE Ford cylinder heads. Edelbrock Ford cylinder heads offer “out of the box” bolt-on performance with no additional porting required. **(The 390 GT exhaust manifolds will not fit Edelbrock Cylinder heads).** The performance range is 1500-6500 rpm for great throttle response throughout the power band as well as top-end horsepower. The intake and exhaust ports are CNC machine “matched” and have been designed for maximum flow velocity when matched with the Performer RPM intake manifold, Performer RPM cam kit, and Performer Series Carburetors. In general, the #6005-#6008 heads are most similar in design to the Ford 427 Medium Riser cylinder heads. The deck, intake flange, exhaust flange, and valve cover flange are all in the stock locations. The intake and exhaust port flange openings are the same as a 427 Ford Medium Riser head. Specific gasket recommendations are given later. The intake flange is compatible with Edelbrock Performer RPM FE intake manifold #7105, the Victor #2936 and #2937 as well as 427 Medium Riser and 428 CJ/SCJ/Police Interceptor intake manifolds or intake manifolds with a stock port exit not larger than 1.94" x 1.24". It is not compatible with 427 High Riser, Low Riser, and Tunnel Port intake manifolds or any manifold with a stock port exit larger than 1.94" x 1.24". The spark plug location and angle is in the stock location.

IDENTIFICATION: These heads are available in pairs, either bare or assembled, for the following applications:

➤ **Performer RPM Ford head #6005 (bare) or #6006 (complete)**

The #6005/6006 head is a Performer RPM aluminum cylinder head for 1960-1976 390 and 428 c.i.d. Ford FE engines with a 4.05" or 4.13" bore. It is manufactured with the 428 CJ valve sizes (2.09" intake and 1.66" exhaust). This head also uses the 16-bolt 428 Cobra Jet exhaust flange bolt pattern. The 390GT exhaust manifolds will not fit these cylinder heads. The combustion chamber is as-cast with a volume of 72cc.

➤ **Performer RPM Ford head #6008 (bare) or #6007 (complete)**

The #6007/6008 cylinder head is a Performer RPM aluminum cylinder head for 1963-68 427 Ford FE Low and Medium Riser engines with a 4.23" bore. These heads have a machined 76cc combustion chamber similar to a Ford Medium Riser chamber and the 8-bolt vertical exhaust flange bolt pattern. The #6007 complete head also uses the 2.09" intake and 1.66" exhaust valve sizes for 427 Low Riser applications. For 427 Medium Riser applications, the #6008 bare head can be used, but must be prepared for the 2.19" intake and 1.73" exhaust valves used in 427 Medium Riser engines.

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; steel body Viton oil control seals; Hardened steel spring cups Edelbrock Sure-Seat Valve Springs #5792, retainers #9734, and valve keepers #9612. 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.**

ACCESSORIES: Although Edelbrock Aluminum Cylinder Heads will accept OEM components (rocker arms, valve covers, intake manifold, head bolts, 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. Recommended head bolts are Edelbrock Head Bolt Kit #8557. Bolt threads, underside of bolt heads, and washers should be lubricated with an oil/moly mix prior to installation and torquing.

ROCKER SHAFTS: **The Edelbrock #6009 rocker shaft stud kit is highly recommended.** This stud kit will eliminate several installation problems that can occur when installing the rocker shaft assembly. The stud kit will insure maximum thread engagement without risk of bottoming out bolts in the cylinder heads. The use of the stud kit also moves the wear on the threads caused by assembly and disassembly to the stud, which can be replaced if the wear is excessive.

ROCKER ARMS: Adjustable 1.76:1 ratio. The valve springs supplied will accommodate valve lifts up to .600". The intake valve has been moved away from the bore centerline compared to a 390/428 head. The intake rocker arm may need to be shimmed over .060". A valve spring shim of the proper diameter may be used.

VALVE COVERS: Use Edelbrock Signature Series chrome valve covers #4462.

INTAKE MANIFOLD: Although stock intake manifolds will fit, the Edelbrock Street Cylinder Heads are matched in size and operating range with Edelbrock Performer RPM intake manifolds. Additionally, any manifold with a stock port exit not larger than 1.94" x 1.24" may be used. Fel-Pro #1247 intake gaskets recommended.

EXHAUST HEADERS: Most header or manifold designed for original equipment heads will fit the Edelbrock Street Cylinder Heads. **The 390 GT exhaust manifolds will not fit Edelbrock Cylinder heads.** If cast iron exhaust manifolds are desired with the Edelbrock Fe (#6005, #6006) Heads, use 428 Cobra jet exhaust manifolds Ford #C80Z-9430-A (RH) and #C80Z-9431-A.(LH). Exhaust ports are CNC-profiled to match Fel-Pro #1442 which are recommended for this application. See figure 1 for bolt flange description.

SPARK PLUGS: Use 14mm x 3/4" reach gasketed spark plugs with a 5/8" hex. Heat range will vary by application; typical street plug would be Champion RC12-YC. Use anti-seize compound on the plug threads to prevent galling in the cylinder head, and torque to the spark plug manufacturers specification for aluminum heads.

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

1. **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° After Top Dead Center during valve overlap. The point of minimum exhaust valve to piston clearance will usually occur 20° to 5° Before Top Dead Center during valve overlap. Performer RPM FE heads should be compatible with stock pistons in engines that have the stock or recommended camshafts.
2. **Rocker Geometry** - 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 have to be made.
3. **Rocker Shaft** - The intake valve has been moved away from the bore centerline compared to a 390/428 head. The intake rocker arm may need to be shimmed over .060". A valve spring shim of the proper diameter may be used.

Edelbrock Stud Kit:

1. If using the Edelbrock stud kit #6009 - When using #6009 kit, apply a removable strength thread locker, like Loctite blue 242 or equivalent to the stud cylinder head side and install stud hand tight. It does not require a heavy torque due to the thread locker. This will ensure the studs do not back out.
2. When installing the rocker shaft assembly, ARP Lubricant is recommended. Apply ARP to the stud threads, nuts and washers. Tighten the nuts evenly as the rocker shaft assembly is being pulled down into position against the pressure of the valve springs. When using ARP assembly lubricant, tighten nuts to 35 Ft-lbs. If using engine oil, tighten nuts to 40-45 Ft-lbs.

Factory Bolts:

1. If not using the Edelbrock Stud kit - The rocker shaft hold down bolts need to be checked to make sure the bolts do not bottom out in the cylinder heads and that the bolt is long enough to engage with the entire length of the heli-coil thread insert in the cylinder heads.
2. When installing the rocker shaft assembly, tighten the bolts evenly as the rocker shaft assembly is being pulled down into position against the pressure of the valve springs. Use engine oil on the bolt threads and bolthead. Tighten bolts to 40-45 Ft-lbs.

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 25 ft./lbs. on the intake manifold bolts and lubricate the bolt threads prior to assembly.**

Installation is the same as for original equipment cylinder heads. Consult service manual for specific procedures, if necessary. Use Fel-Pro head gasket #1020 or equivalent. Be sure that the surface of the block and the surface of the

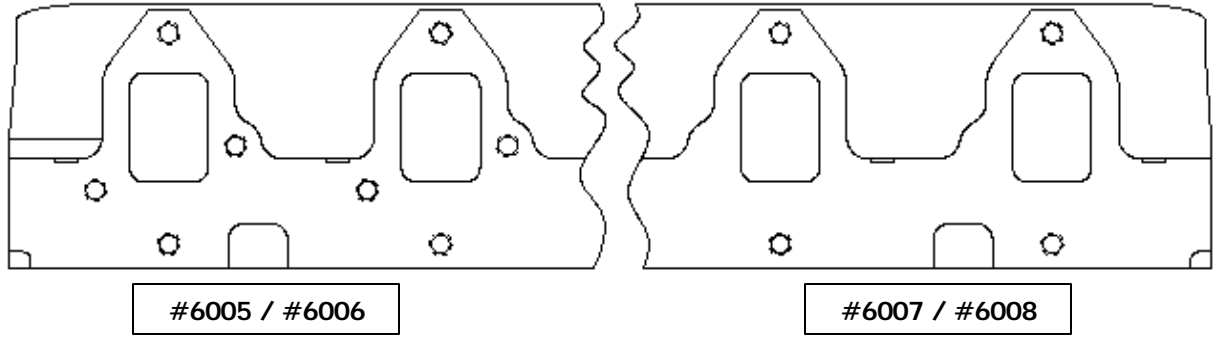
head is thoroughly cleaned to remove any oily film before installation. Use alcohol or lacquer thinner on a lint-free rag to clean. Apply ARP assembly lubricant or a moly-oil mixture to head bolt threads, washer, and area under head bolt to prevent galling and improper torque readings. Torque top row of bolts to 110 ft./lbs. and bottom row to 100 ft./lbs. in three or four steps following the factory tightening sequence (see Figure 2). A re-torque is recommended after initial start-up and cool-down (allow 2-3 hours for adequate cooling).

SPECIFICATIONS:

Head Bolt Torque:	Top row: 110 ft-lbs Bottom row: 100 ft-lbs
Intake Bolt Torque:	25 ft./lbs.
Rocker Stand Torque:	35 ft./lbs. with ARP Lube
With Stud Kit #6009:	45 ft./lbs. with 30W Oil
Stock Bolt Type:	40-45 ft./lbs. with 30W Oil
Combustion Chamber Volume:	
#6005-#6006	72 cc
#6007-#6008	76 cc
Deck Material Removal to Decrease Chamber Volume:	Every .005" Equals 1cc
Maximum Deck Material Remove:	.060"
Deck Thickness:	5/8"
Intake Port Volume:	170cc
Exhaust Port Volume:	125cc
Recommended Intake Gasket:	Fel-Pro #1247
Recommended Exhaust Gasket:	Fel-Pro #1442
Valve Seats:	Hardened, Interlocking Ductile Iron. Compatible with unleaded fuels
Valve Size Stems:	3/8"
Intake	2.09"
Exhaust	1.66"
Valve Seat Angles:	
Intake	30°
Exhaust	45°
Valve Locks:	3/8" x 7° (#9612)
Valve Spring Retainers:	7° 4140 Steel (#9734)
Valve Spring Diameter:	1.55"
Valve Spring Installed Height:	1.885"
Valve Spring Seat Pressure:	120 lbs.
Maximum Valve Lift:	.600"
Rocker Arms:	Adjustable 1.76:1 Required
Pushrods:	Stock Length Pushrods Use Ford #B8AZ-6565-C with Adjustable Rockers (427 Ball/Cup Type) Length: 9.180" center of ball to center of cup 9.370" Overall Length
Spark Plugs:	14mm x 3/4" reach 5/8" hex gasketed seat

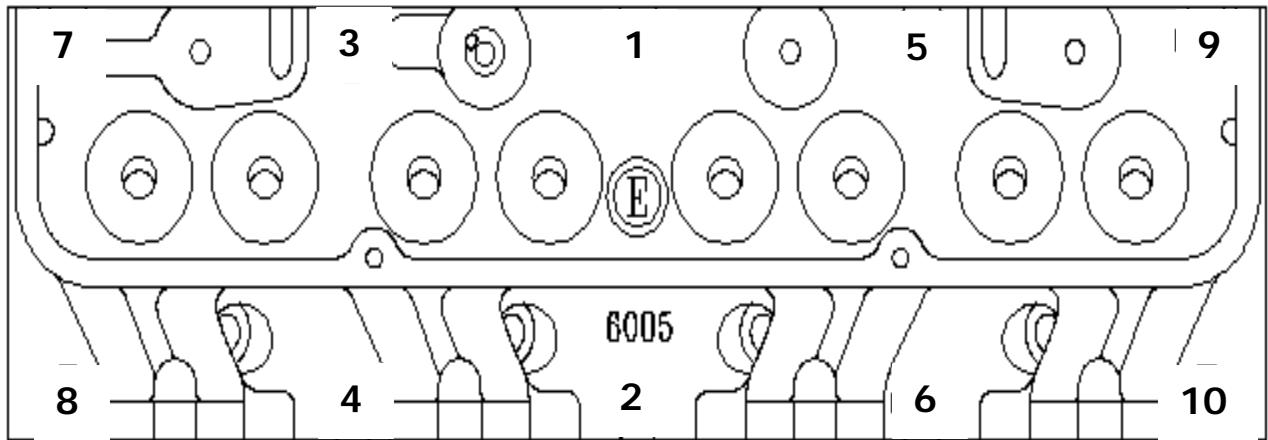
Exhaust Port Bolt Patterns

Figure #1



Head Torque Sequence

Figure #2



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INSTALLATION INSTRUCTION PROOFING/ACKNOWLEDGEMENT FORM

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