



**PERFORMER RPM 351-C CYLINDER HEAD**  
**For Ford 351 'C', 351/400 'M'**  
**Part #61607 (NHRA Legal), 61609, 61625 & 61629**  
**For Boss 302 & 351W 'Clevor' Engines**  
**Part #61689 & 61699**  
**INSTALLATION INSTRUCTIONS**

**PLEASE** study these instructions carefully before beginning this installation. Most installations can be accomplished with common tools and procedures. However, you should be familiar with and comfortable working on your vehicle. If you do not feel comfortable performing this installation, it is recommended to have the installation completed by a qualified mechanic. If you have any questions, please call our **Technical Hotline at: 1-800-416-8628**, 7:00 am - 5:00 pm, Pacific Standard Time, Monday through Friday.

**IMPORTANT NOTE: Proper installation is the responsibility of the installer.**  
**Improper installation may result in poor performance and engine or vehicle damage.**

**DESCRIPTION:** Performer RPM Cylinder Heads #61609 & 61629 are designed for Ford 351-C, 351-M, and 400-M engines. Performer RPM Heads #61689 & 61699 are for 'Clevor' applications that mount a Cleveland top end on a Windsor 302 or 351 block. These street high-performance heads provide great "out-of-the-box", performance for your Ford musclecar or streetrod. Performer RPM 351-C heads feature CNC profiled 190cc (intake) and 90cc (exhaust) port exits for superior flow and efficient 60cc "Compact Charge" combustion chambers. An optimized spark plug location provides improved header clearance. Hardened valve seats are compatible with any fuel.

The complete cylinder heads are assembled with the following:

- Stainless steel, one-piece, swirl-polished intake (2.05") and exhaust (1.60") valves with under-cut stems for increased flow
- 2-ring positive oil control seals
- Edelbrock Sure-Seat valve springs #5792 (Flat Tappet Cam) #5821 (Hydraulic Roller Cam)
- Retainers #9734
- Valve keepers #9612
- Valve spring seats #5771
- Hardened Guide Plates #9672

**NOTE:** 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.**

**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 of 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.

**IMPORTANT NOTES, READ BEFORE BEGINNING INSTALLATION!**  
For a successful installation, the Edelbrock Performer RPM Cylinder Heads require some components other than original equipment parts. To complete your installation, you will need the following items:

- Head gaskets; Fel-Pro #1013 (see instructions below)
- Intake manifold gaskets; Edelbrock #7265.
- Exhaust gaskets; Fel-Pro #1430 or equivalent
- Cylinder head bolts or studs with hardened steel washers. (If mounting on 302 block, you must also use Edelbrock head bolt bushings with integral washers, #9680)
- Heads are machined for adjustable rocker arm assembly
- Hardened steel pushrods
- 14mm x 3/4" reach gasketed spark plugs; Champion RC-12YC or equivalent

**HYBRID APPLICATIONS:** Cleveland heads are sometimes used in hybrid applications such as a "Clevor" (351 Windsor block, 400-M crankshaft, and Cleveland cylinder heads), or Boss-302 "clone" (302 Block with Cleveland cylinder heads). In these applications, 61609 & 61629 cylinder heads must be drilled to provide a coolant crossover passage for use with certain aftermarket intake manifolds designed specifically for such hybrid engines (61689 & 61699 are pre-drilled specifically for this purpose). Refer to the manufacturer of your custom intake manifold for the appropriate location (usually the hole that will be at the front of the block when the heads are installed) and diameter and drill accordingly, using the guide holes to align your drill. Additionally, the 59/64" coolant holes in the deck surface of the heads must be plugged for these hybrid applications (61609 & 61629 only, these holes are not present on 61689 & 61699). If these need to be plugged, Edelbrock recommends tapping the existing hole with 3/4" NPT threads, installing aluminum pipe plugs then machining the installed plugs flat to the deck.

**ACCESSORIES:** Although Edelbrock Cylinder Heads will accept most 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 #8560 includes all bolts which must be used with these cylinder heads (Also use Edelbrock Head Bolt Bushings #9680 in place of washers on if installing heads on a 302 block). Stock head bolts may be used with hardened washers.

**ROCKER ARMS AND VALVE TRAIN:** These cylinder heads are designed to use the preferred Boss 302 7/16" stud mounted rocker

arms. Although stock Boss 302 rocker arms may be used (if new lock nuts are used), we highly recommend using adjustable aftermarket roller rocker arms such as Crane Cams, Comp Cams, Crower or any equivalent. Long slot, roller tip rockers may also be used.

**VALVE COVERS:** Edelbrock Performer RPM cylinder heads will accept stock Cleveland valve covers. They also will accept Edelbrock valve covers #4461.

**INTAKE MANIFOLD:** Although stock intake manifolds will fit, Edelbrock Performer RPM Cylinder Heads are matched in size and operating range with Edelbrock RPM RPM Air-Gap manifold #7564. Boss 302 engines should use Performer RPM manifold #7129, while 351W Clever engines should use #7183. Edelbrock intake manifold gasket #7265 is recommended for all engine combinations.

**EXHAUST HEADERS:** For optimum performance, exhaust headers and a low restriction exhaust system are highly recommended for use with Edelbrock Performer RPM Cylinder Heads. Exhaust ports are CNC-profiled to match Fel-Pro #1430 exhaust gaskets which are recommended for this application.

**NOTE: To ensure maximum performance and a proper seal, Edelbrock gaskets which are specifically designed and manufactured for use with Edelbrock parts must be used.**

**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 over-tighten sparkplugs! If short reach plug is used, poor performance and possible engine damage may occur.**

**LUBRICANTS:** For added performance and protection, we recommend using Edelbrock performance lubricants.

Engine Oils

High Performance Synthetic	10w40 w/Zinc	P/N 1072
High Performance Synthetic	5w30 CAT Safe	P/N 1071
High Performance Petroleum	10w40 w/Zinc	P/N 1073

Or supplement your favorite brand of engine oil

Zinc Additive	-	P/N 1074
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Protect your brand new engine

High Performance Break-In Oil	SAE 30	P/N 1070
Engine Assembly Lube	-	P/N 1075

**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 1/2" bolts to 100-110 ft./lbs (1/2" bolts) in four steps (30, 60, 90, 100-110) following the factory tightening sequence (**See Figure 2**). See intake manifold instructions for installation of the intake manifold.

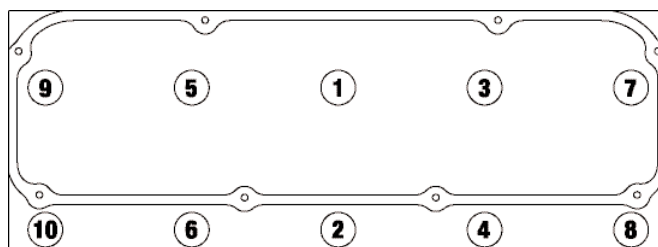
**NOTES:**

**BOSS 302 CLONE ENGINES - Use Edelbrock Head Bolt Bushings with Integral Washers #9680 in place of washers supplied with your head bolt kit. Torque 7/16" bolts to 65-70 ft./lbs. in four steps (30, 40, 50, 65-70) following the factory tightening sequence (See Figure 2).**

**ALL ENGINES - A re-torque is recommended after initial start-up and cool-down (allow 2-3 hours for adequate cooling).**

**SPECIFICATIONS:**

Head Bolt Torque:	7/16" Bolts: 65-70 ft./lbs. 1/2" Bolts: 100-110 ft./lbs. (Applied gradually in 4 steps)
Rocker Stud Torque:	50 ft./lbs.
Combustion Chamber Volume:	60 cc
Deck Thickness:	5/8"
Valve Seats:	Hardened ductile iron, non-interlocking, compatible with any fuel
Valve Size:	Intake - 2.05", Exhaust - 1.60"
Valve Spring Diameter:	1.55"
Valve Spring Installed Height:	1.900"
Valve Spring Seat Pressure:	128 lbs. (Flat Tappet Cam) 150 lbs. (Hydraulic Roller Cam)
Max. Valve Lift:	.600"



**(EXHAUST PORT SIDE)**

**Figure 2 - Cylinder Head Bolt Torque Sequence  
Torque Bolts in 4 Steps Following Sequence Above**



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