



INSTALLATION INSTRUCTIONS
Victor CNC Racing Cylinder Heads
Catalog #7728
& #7729
For Windsor Small Block Ford Engines (Bare Heads)

- **Please** study these instructions carefully before installing your new cylinder heads. If you have any questions or problems, please call our Technical Hotline at: 1800-416-8628, 8:00 am – 5:00 pm, Pacific Standard Time, Monday through Friday or e-mail us at edelbrock@edelbrock.com.

Kit Contents:

- 2 – 7728/7729 CNC ported cylinder heads
- 1 – P/N 22-7721 end seal spacer kit
- 1 – Instruction sheet

INSTALLATION INSTRUCTIONS

▪ **DESCRIPTION:** P/N 7728 / 7729 VICTOR CNC RACING CYLINDER HEADS.

The Victor small-block Ford cylinder heads are designed for ultra high-performance 302 through 351 c.i.d. and large displacement Ford Windsor V8s. These heads feature .52" raised exhaust ports and .375" raised high flow intake ports. A .375" extended intake port flange is compatible with all Victor-series 302 and 351-based manifolds using the end seal spacers included. The fully CNC ported 50cc (7728) combustion chamber promotes high compression ratios in racing applications. The 60cc 7729 chambers are for applications requiring low compression ratios. These heads include ductile iron valve seats and phosphor-bronze valve guides. The Victor Small-Block Ford #7728/7729 heads require shaft-mount rocker arm assemblies (available from Jesel Components, T&D Machine, Probe Industries, and others), special header flanges, custom length pushrods and special aftermarket pistons. These bare heads are ready to assemble with your choice of premium quality valvetrain parts.

▪ **ACCESSORIES:** 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 ARP #254-3708 for engines with 7/16" head bolt holes (289 and 302). You may use Edelbrock Head Bolt Kit #8552 or high quality 7/16" bolts or studs on 289-302 engines only if you purchase Edelbrock head bolt bushings with integral washers #9680. Engines with 1/2" diameter head bolts (351-W and 302 SVO) use Edelbrock Head Bolt Kit #8553 or stock 351-W 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.*

▪ **PISTONS:** Because of the unique combustion chamber shape, special pistons are required. Pistons with the proper dome shape are available from JE Pistons (Job #93751). These are not off-the-shelf pistons, as variables such as bore, stroke, and rod length may be different for each application.

▪ **ROCKER ARMS:** Aftermarket shaft rockers are required. These are available from Jesel Components (#KRA14377), T&D Machine (#7350), or Probe Industries (#PSR-2894, 1.6:1 or #PSR-2895, 1.7:1).

▪ **PUSHROD LENGTH:** Custom length 5/16" diameter pushrods will be required. The length will vary depending on your engine combination. Follow the rocker arm manufactures instruction for determining the correct pushrod length for your application.

▪ **VALVE COVERS:** Standard Ford valve covers will fit. We recommend Edelbrock Signature Series chrome valve covers #4460 or Elite Series polished aluminum valve covers #4260.

▪ **INTAKE MANIFOLD:** Edelbrock Race Cylinder Heads are matched in size and operating range with Edelbrock Victor and Super Victor series intake manifolds. Additionally, any manifold that matches Fel-Pro gasket #1262 or equivalent may be used. Intake manifolds should be port-matched to the cylinder heads for optimum performance.

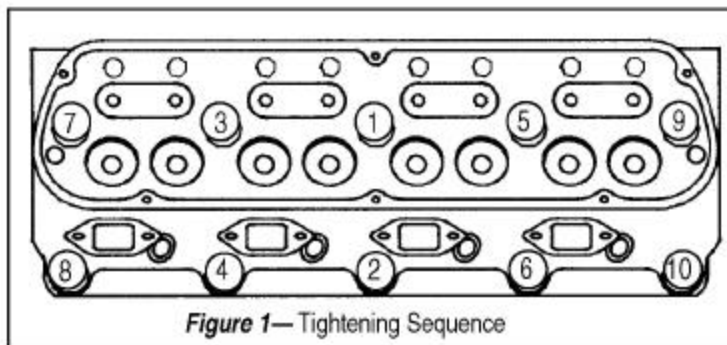
Because of the extended intake flanges, the intake manifold will sit .50" higher than with stock heads. Use the end seal spacers provided which match the deck height of your block. Secure the spacers to your block with screws or adhesive, and use RTV silicone sealer between the spacers and the manifold during manifold installation.

- **INTAKE MANIFOLD BOLTS:** The intake manifold bolts must be long enough to have engagement with the full length of the Helicoil Thread insert. Over-torquing of the intake manifold bolts can create many problems, including thread failure and intake or head gasket failure.
- **DISTRIBUTOR TO INTAKE MANIFOLD CLEARANCE:** Because of the .50" higher position of the intake manifold on the engine with the 7728/7729 heads, the clearance of the distributor housing to the intake manifold water crossover may be compromised. If enough clearance cannot be obtained with your distributor, small diameter housing distributors are available from MSD (302 - P/N 8579, 351W - P/N 8578, 351C - P/N 8577).
- **SPARK PLUGS:** Use 14mm x 3/4" reach gasketed spark plugs with a 5/8" hex (Champion C series or equivalent). Heat range for competition applications will vary. Use anti-seize on the plug threads to prevent galling in the cylinder head, and torque to 10 ft./lbs. Do not overtighten sparkplugs!
- **HEADER FLANGE PLATES #7722:** Custom flange plates must be used with Victor small-block Ford cylinder heads #7728/7729 due to the unique bolt pattern. The wide 2 1/2" bolt spacing allows ample room for even the largest header tubes for competition applications. Edelbrock Header Flange plates #7722 are laser-cut from 3/8" mild steel.
- **INSTALLATION:** Installation is the same as for original equipment cylinder heads. Consult service manual for specific procedures, if necessary. See head gasket section for gasket recommendations. 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 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 1), 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).
- **OTHER ASSEMBLY TIPS**
 - When installing the sparkplugs and exhaust headers, 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.
- **SPECIFICATIONS**

Head bolt torque:.....	7/16" bolts - 70/80 ft./lbs. (short/long bolts)
	1/2" bolts - 100/110 ft./lbs. (short/long bolts)
Intake bolt torque:	16-18 ft./lbs.
Combustion chamber volume:	7728: 50 cc
	7729: 60cc
Intake port volume:.....	240 cc
Exhaust port volume:.....	80 cc
Deck thickness:.....	5/8"
Valve Seats:	Hardened, interlocking ductile iron, compatible with unleaded fuels
Recommended Valve Size:	Intake- 2.100", Exhaust- 1.650"
Recommended Valve Lengths:	Similar to 18° Chevrolet (typically 5.450" - 5.500")
Valve Stem Diameter:.....	11/32"
Valve Spring Pocket Diameter:	1.630"
Pushrod Diameter:	5/16"
- **HEAD GASKETS:** Head gasket requirements change according the application for which the cylinder heads are being used. Use the following as a guide for head gasket selection.
 1. Medium performance engines, 10-12:1 compression ratio, increased preload cylinder head fasteners (7/16" stud or 1/2" head bolts or studs), not recommended with nitrous or forced induction - Fel-Pro Head Gasket p/n 1011-2.

- Highest performance racing engines. 12:1 and above compression ratio, 1/2" cylinder head fasteners designed for the highest preload, engines using nitrous or forced induction- Fel-Pro Head Gasket p/n 1006 Locwire.

NOTE: This gasket will require modification of the head deck surface by a competent machine shop to Fel-Pro specifications.



▪ SPECIAL INSTRUCTIONS FOR 351-C ENGINES

Installation of these 7728/7729 cylinder heads on a 351C block requires a thorough knowledge of 302-351W and 351-C water cooling systems and their differences. The Ford SVO catalog has a good section on small block Ford water jacket passages. The ability to perform custom machining and fabrication will be required to properly perform this installation.

The Victor Small-Block Ford Race heads #7728/7729 require an 11/16" diameter hole to be drilled through the head deck in the position shown in Figure 2. The hole in the cylinder head deck only needs to be drilled in one end of the head, the end of the head corresponding to the hole in the block deck for the cylinder bank that the head will be attached. If you do not know whether the head will be mounted on the left or right cylinder bank, drill the head deck on both ends.

The engine block deck needs to be checked for water holes that may be adjacent to the cylinder head tooling point recesses shown in Figure 2. These holes in the block deck will need to be plugged.

To make sure that air pockets do not form in the heads when filling the cooling system with coolant, we recommend installation of a small steam bleed hose from the normal Windsor water outlet position on the intake face of each head (through the intake manifold flange) to the water outlet housing on the block. This will allow air and steam that is difficult to get out of a 351 Cleveland engine to be bled from the heads.

An intake manifold designed for Windsor heads on a 9.200" deck height block must be used. We recommend Edelbrock intake manifolds Victor Jr. P/N 2980 and Super Victor P/N 2929. The front water crossover and thermostat housing flange will need to be removed and the resulting holes in the intake manifold flanges closed off. The end seal areas will also need to be modified to match up with the 351-C end seals. End seal spacers, (.50" thick), will also need to be fabricated.

Head Gaskets

Head gaskets designed for 351-C applications should be used. We suggest Fel-Pro #1022 or #1023 for most applications. If desired, the heads may be machined for Fel-Pro Locwire head gaskets #1006 following the directions supplied with those gaskets.

On 351C and some SVO 351W blocks, two of the steam holes on the exhaust side of deck coincide with the Victor head tooling point relief pockets shown on the following illustration. In order to avoid coolant leaks, these two holes must be plugged up.

- PLEASE complete and mail your warranty card. Be sure to write the model number of this product in the "Part # _____" space.

THANK YOU.

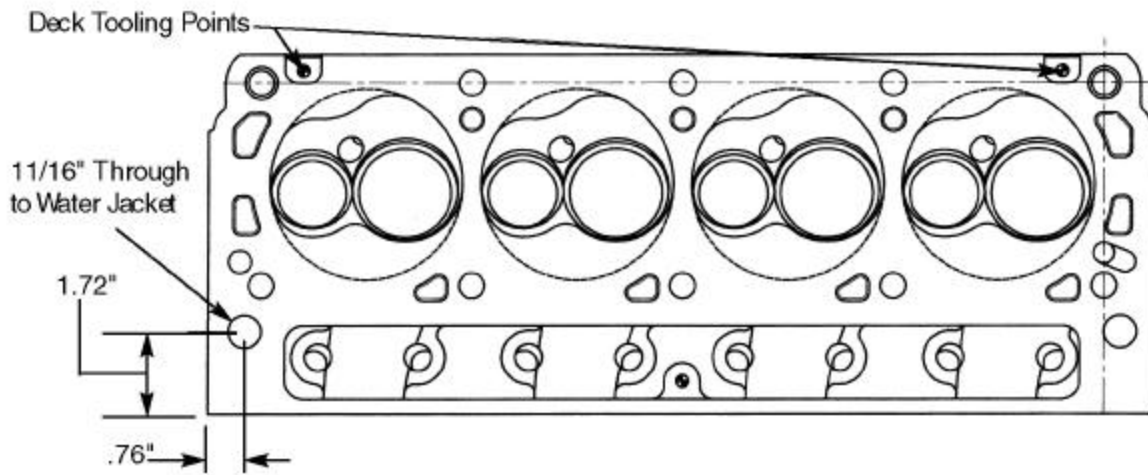


Figure 2— Machining location points for conversion to 351-C