



## INSTALLATION INSTRUCTIONS

### Victor Small-Block Ford Race Heads

#### For Small Block Ford V8s

Catalog # 61099 (Bare), #61299 (Bare), #77099 (Bare Castings),  
#77219 (Bare), #77289 (Bare), #77299 (Bare)

- **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](mailto:edelbrock@edelbrock.com).

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**DESCRIPTION: These heads require professional head preparation.**

**#61099** - This Victor Small-Block Ford cylinder head is designed for ultra high-performance 302 and larger displacement Ford Windsor V8s. This head is based on the #77099 Victor cylinder head along with the valve guide and seat location changes. The ports were designed by Billy Glidden and digitized by Chapman Racing. The heads are fully CNC-ported by Chapman Racing. The valve seats have a multi-angle valve job and the valve guides have been honed to accept a .3410" dia. valve stem. Proper valve sizing should always be checked. Out of the box, these heads on a 360-ci engine have produced 750+ Horsepower.

**#61299** - This Victor Small-Block Ford cylinder head is designed for ultra high-performance 302 and larger displacement Ford Windsor V8s. This head is based on the #77219 Victor head. It is fully CNC-ported by Chapman Racing. The valve seats have a multi-angle valve job and the valve guides have been honed. It features a .060" thicker deck, which achieves a 61cc combustion chamber. The combustion chambers, intake and exhaust ports are fully CNC-ported.

**#77099** - This head is based on the #77219 Victor head. This head is designed for head porters and engine builders engaged in all out racing. The ports are small to permit a variety of runner shapes and sizes. **The guides and seats are not installed.** There is a great deal of work required preparing these heads for use. The heads have a 15-degree valve angle, exhaust guides have been moved .060" away from bore centerline and the intake guide has been moved .095" toward the bore centerline. Ports are deliberately small to permit a variety of porting options. The

**#77219** - This Victor Small-Block Ford cylinder head is designed for ultra high-performance 302 and larger displacement Ford Windsor V8s. This head features .52" raised exhaust ports and a .375" extended and raised high flow intake port flange. It is compatible with all Victor-series 302 and 351-based manifolds when used with end seal spacers. The 47cc (as-cast) combustion chamber promotes high compression ratios in racing applications. These heads include ductile iron valve seats and phosphor-bronze valve guides. **The Victor Small-Block Ford #77219 head requires shaft-mount rocker arm assemblies (available from Jesel components, T&D machine, Probe Industries, etc.), special header flanges, custom length pushrods and special aftermarket pistons. These bare heads have not been port-matched or bowl-blended.**

**#77289** - This Victor Small-Block Ford cylinder head is designed for ultra high-performance 302 and larger displacement Ford Windsor V8s. This head is based on the #77219 Victor head. The heads are then partially CNC-machined by Chapman Racing. The valve seats have a multi-angle valve job and the valve guides have been honed. The combustion chambers have been fully CNC machined. The intake and exhaust ports have CNC-blended entries and bowls.

**#77299** - This Victor Small-Block Ford cylinder head is designed for ultra high-performance 302 and larger displacement Ford Windsor V8s. This head is based on the #77289 Victor head. With the benefits listed above, this head also features a .060" thicker deck than the #77289 to achieve a combustion chamber volume of 61cc.

**NOTE:** All of the above heads are from the #77219 castings. The #61099 and #77099 have different valve locations. Please read above text to prevent engine damage.

| Part No. | Victor Ford Cylinder Heads               | Chamber Size |
|----------|------------------------------------------|--------------|
| 61099    | Fully CNC Ported Bare cylinder heads     | 60cc         |
| 61299    | Fully CNC Ported Bare cylinder heads     | 61cc         |
| 77099    | Bare Raw Casting                         | **cc         |
| 77219    | Bare As Cast                             | 47cc         |
| 77289    | Partially CNC Ported Bare cylinder heads | 48cc         |
| 77299    | Partially CNC Ported Bare cylinder heads | 61cc         |

and 15° ATDC during valve overlap. The point of minimum exhaust valve to piston clearance will usually occur 15° to 5° BTDC during valve overlap. **Re-machining of the piston top eyebrows may be required with some pistons.**

2. **Proper lifter adjustment and rocker geometry** –. Rocker geometry should be checked making sure that the contact point of the roller 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 or rocker stand height may have to be made.

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

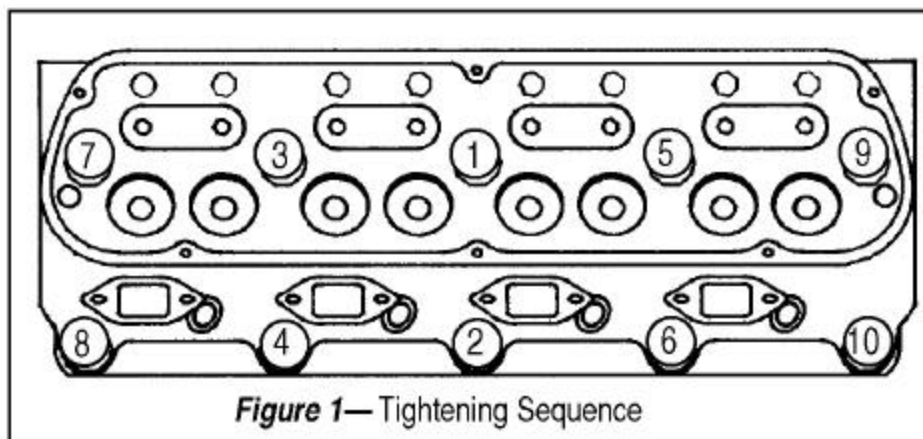
- **INSTALLATION:** Installation is the same as for original equipment cylinder heads. Consult service manual for specific procedures, if necessary. See head gasket section for gasket recommendations. Be sure that the surface of the block and the surface of the head are thoroughly cleaned to remove any 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 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).

**HEAD GASKETS:** Head gasket requirements change according to 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.
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. *This gasket will require modification of the head deck surface by a competent machine shop to Fel-Pro specifications.*

**Intake Gaskets:** Intake gaskets will vary according to engine design and builder's preference. The gasket used during testing at Edelbrock is the Fel-Pro gasket Part #1262 R . End seal spacer kit #7726 is required and sold separately.

**Exhaust gaskets:** Exhaust gaskets will vary according to builder's preference. Some builders will use Silicone sealer designed for exhaust system. The method used at Edelbrock was 2 sets of Fel-Pro Part #1482. Use only the outboard single port gaskets from the Fel-Pro #1482 kits.



▪ **SPECIFICATIONS:**

|                              |                                                                                           |         |                        |
|------------------------------|-------------------------------------------------------------------------------------------|---------|------------------------|
| Head Bolt Torque:            | 7/16 Bolts – 70/80ft-lbs.<br>(Short/Long Bolts) (In 3 steps)<br>1/2 Bolts- 100/110 ft-lbs |         |                        |
| Intake Bolt Torque:          | 16-18 ft./lbs.                                                                            |         |                        |
| Combustion Chamber Volume:   |                                                                                           |         |                        |
| #61099.....                  | 60cc CNC                                                                                  |         |                        |
| #61299.....                  | 61cc CNC                                                                                  |         |                        |
| #77099.....                  | ** cc As cast                                                                             |         |                        |
| #77219.....                  | 47cc As-cast                                                                              |         |                        |
| #77289.....                  | 48cc CNC                                                                                  |         |                        |
| #77299.....                  | 61cc CNC                                                                                  |         |                        |
| Intake Runner Volume:        |                                                                                           |         |                        |
| #61099.....                  | 274cc CNC                                                                                 |         |                        |
| #61299.....                  | 277cc CNC                                                                                 |         |                        |
| #77099.....                  | ** cc As cast                                                                             |         |                        |
| #77219.....                  | 240cc As cast                                                                             |         |                        |
| #77289.....                  | 240cc Partially CNC                                                                       |         |                        |
| #77299.....                  | 240cc Partially CNC                                                                       |         |                        |
| Exhaust Runner Volume:       |                                                                                           |         |                        |
| #61099.....                  | 87cc CNC                                                                                  |         |                        |
| #61299.....                  | 90cc CNC                                                                                  |         |                        |
| #77099.....                  | ** cc As cast                                                                             |         |                        |
| #77219.....                  | 80cc As cast                                                                              |         |                        |
| #77289.....                  | 90cc Partially CNC                                                                        |         |                        |
| #77299.....                  | 90cc Partially CNC                                                                        |         |                        |
| Deck Thickness:              | 5/8"                                                                                      |         |                        |
| Valve Seats:                 | Hardened, interlocking, compatible with all types of fuel                                 |         |                        |
| Recommended Valve Size:      | Intake                                                                                    | Exhaust | Valve Center to Center |
| #61099.....                  | 2.150"                                                                                    | 1.560"  | 1.900"                 |
| #61299.....                  | 2.125"                                                                                    | 1.625"  | 1.935"                 |
| #77099.....                  | **                                                                                        | **      | 1.900"                 |
| #77219.....                  | 2.125"                                                                                    | 1.625"  | 1.935"                 |
| #77289.....                  | 2.100"                                                                                    | 1.650"  | 1.935"                 |
| #77299.....                  | 2.100"                                                                                    | 1.650"  | 1.935"                 |
| Valve Guide Inside Diameter: | .342" I.D. Nominal                                                                        |         |                        |
| Recommended Valve Lengths:   | Similar to 18 Deg Chevrolet (Typically 5.450"-5.500" )                                    |         |                        |
| Valve Spring Diameter:       | 1.630"                                                                                    |         |                        |
| Pushrods:                    | 5/16" dia. Hardened pushrods required for use with guideplates                            |         |                        |
| Spark Plugs:                 | 14mm x ¾" reach gasketed seat                                                             |         |                        |

**Note: Above asterisk (\*\*) indicate unknown values. Size will vary according to the builder's design.**

## ▪ SPECIAL INSTRUCTIONS FOR 351-C ENGINES

Installation of these Victor 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 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. Bolthole break thru will occur as seen in Figure #2 and will require sealing of passage.

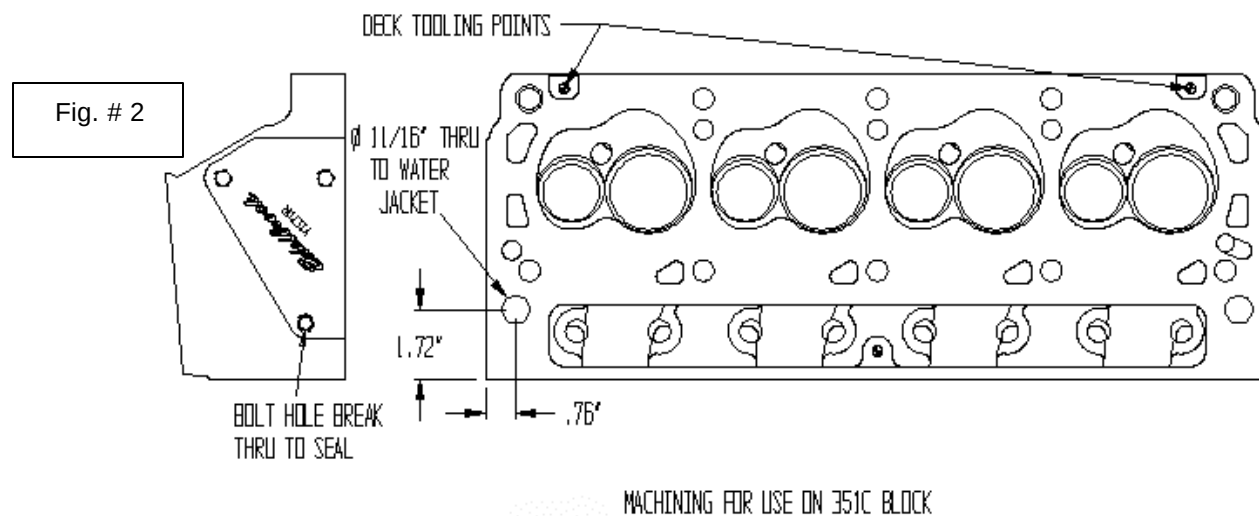
The engine block deck needs to be checked for water holes that may be adjacent to the cylinder head tooling point recesses shown in Figure #2. These holes in the block deck will need to be plugged.

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.



**Note:** Bolt hole break thru will occur as seen in Figure #2 and will require sealing of passage.

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

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