



# VICTOR JR. 24° AND VICTOR 24° CYLINDER HEADS

## For Big Block Chevrolet

### Catalog #77409, 77419, 77429, 77459, 77469, & 77479

## 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 or e-mail us at [Edelbrock@Edelbrock.com](mailto:Edelbrock@Edelbrock.com).

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

**DESCRIPTION:** Victor Jr. 24° and Victor 24° Cylinder Heads are designed for big-block Chevrolet competition engines in high RPM or large displacement applications using rectangular port heads. Rectangular intake ports are raised .100" and exhaust ports are raised .750" for greatly improved flow paths and more power. 118cc open-style combustion chambers facilitate high compression ratios and rocker stud bosses are reinforced for valve train stability. For maximum head gasket retention, these heads include two auxiliary head bolt holes (**Note: Not all blocks have bosses in the lifter valley for these bolts. These bolt holes must be plugged off if not in use**). These heads will accommodate all standard location rectangular port Victor series intake manifolds. These heads will also fit all 1965 and later big block Chevrolet blocks. The valve seats and valve guides have been machined for recommended valve sizes and will need final clearances to be checked by the engine builder. The exhaust ports are 128cc, and are raised .750" for better flow. We recommend Edelbrock intake #2917 for a matched port intake. Cylinder heads 77409 and 77459 are complete heads that include valve springs and titanium retainers that allow valve lifts up to .880", while cylinder heads 77429 and 77479 include valve springs and stainless steel retainers that allow lifts up to .700". Complete heads include 2.30" intake and 1.90" exhaust valves.

**IMPORTANT:** The #77409, 77419, and #77429 heads are designed for a 4.470" bore or larger while the #77459, 77469, and #77479 heads require a 4.310" or larger bore. Intake valves should measure 5.600" or longer and exhaust valves should measure at least 5.500" in length. The unique valve locations and angles require Edelbrock guide plate #38-6067 for proper valve train geometry, and also require stud girdle #7796 (For #77409, 77419, and 77429) or #7797 (For #77459, 77469, and 77479).

### BEFORE BEGINNING INSTALLATION

#### IMPORTANT NOTES: READ BEFORE BEGINNING INSTALLATION!

For a successful installation, Victor 24° Cylinder Heads require some components other than original equipment parts. To complete your installation, you will need the following items:

- Head gaskets; Fel-Pro #1017-1 (454 CID), or #1047 (502 CID) (See "Installation Procedure" for details)
- Intake manifold gaskets; Fel-Pro #1211, 1275, or equivalent.
- Exhaust gaskets; Fel-Pro #1411, 1412, or equivalent.
- Valve cover gaskets; OEM O-Ring style or Edelbrock #7580 (Depending on valve cover type used; see "Accessories")
- Edelbrock head bolt kit #8554 or studs (see "Accessories")
- 14mm x 3/4" reach x 5/8" hex, gasketed spark plugs (heat range to be determined by specific application)
- Adjustable rocker arm assembly. Cylinder head is designed to accept aftermarket stud-mounted roller rocker arms or shaft-mounted rocker arms such as Jesel or T&D. Always check rocker-to-valve spring and rocker to valve cover clearance before final assembly.
- Pushrods; Use hardened pushrods compatible with guideplates and with your adjustable rocker arm assembly (8.200" intake, 8.500" exhaust recommended - See "Accessories" section for details).

**CHECKING ENGINE CLEARANCES:** As with any competition engine build, prior to installation it is highly recommended that valve-to-piston clearances are checked and corrected to minimum specs, if necessary. 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. Victor 24° cylinder heads should be compatible with most aftermarket pistons depending upon the valves selected for your application. Some applications may require custom machining (valve notching) of your pistons. Also make sure there is adequate clearance between the valves and the cylinder wall, as well as the rocker arms to the valve cover and the rocker arm to the valve cover rail (intake only).

**ROCKER ARM GEOMETRY:** Rocker arm geometry should be checked, making sure that the contact point of the roller (or pad on a stock type rocker arm) 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 these components come into improper contact with each other. If problems with valve train geometry occur, changes such as pushrod length may have to be made.

*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 #8554 can be used on all 1965 and later big-block Chevrolet engine blocks. The head bolt boss heights and required bolt lengths are listed in the "Specifications" section on Page 3. **See Figure 1** for the cylinder head bolt tightening sequence. Bolt threads, underside of bolt heads, and washers should be lubricated with an oil/moly mix prior to installation and torquing. Apply liquid Teflon PST or suitable thread sealant on any bolt threads that go into coolant passages.
 

**NOTE:** *The bolt bosses adjacent to the exhaust port exits (position 2, 7, 8, & 15), require a 5.50" long bolt. These bosses have been raised to provide more material thickness between the head bolt boss counterbore and the exhaust port wall. Many of the other head bolt boss heights have also been adjusted to prevent head bolt bottoming in Mark IV, Mark V, and Gen VI engine blocks. Bolt length on positions 13 & 16 must be carefully checked. It is likely that the bolts will need to be shortened by one to two threads to prevent bottoming out on blocks with blind bolt holes.*
- **ROCKER ARMS, PUSHRODS, AND GUIDEPLATES:**

**Shaft-Style Rocker Arms:** When using Shaft-Style rocker arms, Edelbrock recommends the use of Jesel or T&D rocker arms.

**Screw-In Stud Rocker Arms:** When using screw-in studs, aftermarket, roller rocker arms must be used. The exhaust rocker stud bosses are made with extra long thread inserts and hole depth to allow exhaust rocker studs with extra long installation thread length to improve rocker stud durability. Select the appropriate rocker arms and rocker studs for your application.

**Pushrods:** 8.200" intake and 8.500" exhaust pushrods should be used. Length determined with a stock block deck height, valve length (5.6" int., 5.5" exh.), stud mounted roller rocker arms, and an Edelbrock hydraulic roller camshaft (stock base circle diameter). Racing camshafts or non-roller applications will require determining proper length using an adjustable pushrod, and measuring the pushrod after adjusting to the proper length. Hardened pushrods must be used when using stud mounted rocker arms and guideplates.

**Guideplates:** Guideplates must be used when using screw-in stud, roller rocker arms. Use Edelbrock part #38-6067 guideplates.
- **VALVES AND VALVESPRINGS:** Edelbrock Victor 24° cylinder heads will accept 2.19"-2.30" (maximum) diameter intake valves and 1.88"-1.94" (maximum) diameter exhaust valves. Valves should have a 11/32" stem diameter. Use 5.600" long intake and 5.500" long exhaust valves (or longer as necessary for proper valve spring installed height). These cylinder heads feature a 1.750" valve spring pocket diameter. Use valve springs recommended by your cam manufacturer. Cylinder heads 77409 and 77459 are complete heads that include valve springs and titanium retainers that allow valve lifts up to .880", while cylinder heads 77429 and 77479 include valve springs and stainless steel retainers that allow lifts up to .700". Complete heads include 2.30" intake and 1.90" exhaust valves.
- **INTAKE MANIFOLD:** Edelbrock Victor 24° cylinder heads are matched in size and operating range with Edelbrock Victor series intake manifolds. Additionally, any manifold that matches Fel-Pro gasket #1211, 1275, or equivalent may be used. Rectangular port intake manifolds may be used as is, or port matched to the cylinder head for optimum performance.
- **EXHAUST HEADERS:** Any header designed for original equipment heads will fit the Edelbrock Victor 24° cylinder head. Fel-Pro exhaust gaskets #1411, 1412, or equivalent are recommended. It is recommended to check clearance between the exhaust flange and the head bolt relief. Also check in-car fitment, as these ports are raised from the stock location.
- **VALVE COVERS:** The valve cover flange is designed to work with Mark V and Gen VI style valve covers with an o-ring seal valve cover gasket, as well as Mark IV type valve covers. Mark IV style, Edelbrock Signature Series #4680, or Elite Series #4280 are recommended.
- **SPARK PLUGS:** Use 14mm x 3/4" reach gasketed spark plugs with a 5/8" hex. Heat range for competition engines will vary by application. 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; usually 10 ft./lbs. **DO NOT OVERTIGHTEN!**

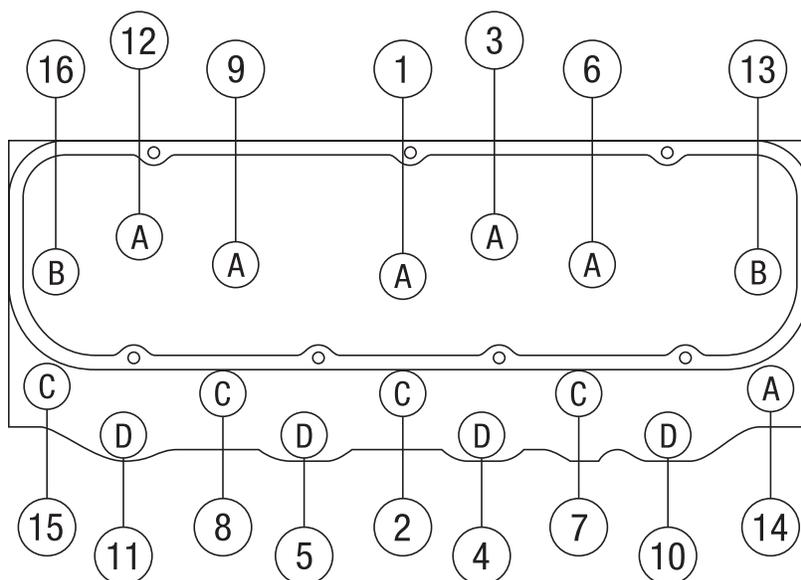
## INSTALLATION PROCEDURE

Installation is the same as for original equipment cylinder heads. Consult service manual for specific procedures, if necessary. For 454 CID and small Mark IV engines, use Fel-Pro head gasket #1017-1, or equivalent. For 502 CID Mark V and Gen VI engines, use Fel-Pro head gasket #1047, or equivalent. 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 to prevent galling and improper torque readings. Apply liquid Teflon PST or other suitable thread sealant on any bolt threads that go into coolant passages. Torque bolts to 70

ft./lbs., following the factory tightening sequence (**See Figure 1**). A re-torque is recommended after the initial start-up and cool-down (allow 2-3 hours for adequate cooling).

**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.

**NOTE: Torque sparkplugs to 10 ft./lbs. Do not over tighten sparkplugs! If short reach plug is used, poor performance and possible engine damage may occur.**



**Figure 1 - Big Block Chevrolet Cylinder Head Bolt Torque Sequence**  
**Torque Bolts to 70 ft./lbs.**  
**(Torque Bolts in 3 to 4 steps, gradually approaching final torque spec)**

### HEAD BOLT BOSS HEIGHT CHART

Letter	Boss Height	Recommended Bolt Length	Qty.
A	3.38"	4.19"	6
B	3.38"	4.50"	2
C	4.69"	5.50"	4
D	1.38"	2.19"	4

## SPECIFICATIONS

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Head Bolt Torque:	70 ft./lbs.
Rocker Stud Torque:	45 ft./lbs.
Combustion Chamber Volume:	119cc
Deck Thickness:	9/16"
Valve Seats:	Hardened, Interlocking, Compatible with Any Fuel
Recommended Valve Sizes:	Intake – 2.19" to 2.30" (maximum) Exhaust – 1.88" to 1.94" (maximum)
Recommended Valve Length:	Intake – 5.600", or longer if needed for proper valve spring installed height Exhaust – 5.500", or longer if needed for proper valve spring installed height
Recommended Pushrod Length:	Intake – 8.200" (Length may vary by application) Exhaust – 8.500" (Length may vary by application)  <i><b>NOTE:</b> Pushrod length determined with an Edelbrock camshaft with a stock base circle diameter. Racing camshafts with smaller base circle will require custom pushrods; length determined by measuring an adjustable pushrod adjusted to provide proper rocker arm geometry.</i>
Valve Stem Diameter:	11/32"
Valve Spring Pocket Diameter:	1.750"



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