



E-CNC VICTOR 23° CYLINDER HEADS
For Small-Block Chevrolet V8 Engines
Part #s 61205 61209, 61215, 61219, 61229
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 will void your warranty and may result in poor performance and engine or vehicle damage.

DESCRIPTION: Edelbrock E-CNC 23° Cylinder Heads are designed for high performance street and entry level racing use. They are not intended, nor legal for use on emissions controlled vehicles. These heads DO NOT retain an exhaust crossover passage and will not work on any vehicle requiring EGR (Exhaust Gas Recirculation) equipment. E-CNC cylinder heads feature intake and exhaust ports that are fully CNC machined for maximum performance while retaining the high port velocity needed for low speed throttle response. These cylinder heads have been designed for maximum performance when matched with Edelbrock intake manifolds #2892, 2925 or 2975, camshafts, carburetors, or additional recommended performance parts.

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; 2-ring positive-oil-control seals; 7/16" rocker arm studs and 5/16" guide plates; hardened steel valve spring locators; Edelbrock Sure-Seat Valve Springs, retainers, and valve keepers.

Part Number	Description	Part Number	Description
61209	225cc For Solid Roller Cam, Complete	61205	225cc For Hydraulic Roller Cam, Complete
61219	260cc For Solid Roller Cam, Complete	61215	260cc For Hydraulic Roller Cam, Complete
61229	275cc For Solid Roller Cam, Bare		

NOTE: Complete cylinder heads are assembled and prepared for installation right out of the box. **#61229 is a fully machined, bare cylinder head, with pre-installed valves, guides and seats.**

BEFORE BEGINNING INSTALLATION

IMPORTANT NOTES: READ BEFORE BEGINNING INSTALLATION!

For a successful installation, the Edelbrock E-CNC 23° Cylinder Heads require some components other than original equipment parts. To complete your installation, you will need the following items:

- Head gaskets: Edelbrock #7310 or equivalent
- Intake manifold gaskets: Edelbrock #7217 or equivalent
- Exhaust gaskets: Edelbrock #7204 or equivalent
- Valve Cover gaskets: Edelbrock #7549 or equivalent

NOTE: Edelbrock Cylinder Head Gasket Set #7361 may also be used in place of individual gaskets. This set contains all gaskets necessary for cylinder head installation, including cylinder head, intake (requires valley cover plate), exhaust, and valve cover gaskets.

- Edelbrock head bolt kit #8550.
- 14mm x 3/4" reach x 5/8" hex, gasketed spark plugs (heat range to be determined by specific application)

CHECKING VALVE-TO-PISTON CLEARANCE: 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 .100". Minimum exhaust valve clearance should be .110". E-CNC 23° cylinder heads are designed for use with flat-top pistons.

PISTON-TO-CYLINDER HEAD CLEARANCE: The use of domed pistons requires that piston-to-head clearance be checked before installation. Recommended minimum piston-to-head clearance is .050".

VALVE-TO-BORE CLEARANCE: Valve-to-bore clearance should also be checked.

ROCKER GEOMETRY: Rocker geometry should be checked, making sure that the contact point of the roller (or pad on a stock 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 none of 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. **NOTE: #61229 requires the use of a shaft mounted rocker system.**

ACCESSORIES

Although Edelbrock E-CNC 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.

- **Intake Manifold:** The Edelbrock E-CNC 23° Cylinder Heads are matched in size and operating range with Edelbrock intake manifolds #2892, 2925 or 2975. Manifold is port matched to Fel-Pro #1206 intake manifold gasket. Alternatively, Edelbrock intake manifold gasket #7217 can be used. **DO NOT** use cork or rubber end seals supplied with gaskets; instead, use RTV Silicone sealer. Apply a 1/4" bead along front and rear of block, overlapping gaskets at the four corners. Torque manifold bolts to 25 ft./lbs.
- **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. We recommend Edelbrock Head Bolt Kit #8550. Other aftermarket head bolts may be used if they meet these specs for length: 1-3/4" (short bolts); 3" (medium bolts); 3-13/16" (long bolts). Shorter bolts do not have enough thread engagement for use with hardened washers.
- **Exhaust Headers:** Use appropriate 6 Bolt Pattern headers and exhaust manifold gaskets.
- **Valve Springs:** #61209, #61209 and #61219 are complete cylinder heads that are assembled with valve springs compatible with solid roller cams. #61205 and #61215 are complete cylinder heads with springs compatible with hydraulic roller cams. If any other camshaft is used, check with the camshaft manufacturer for recommended valve spring pressures.
- **Valve Covers:** The use of "tall profile" type valve covers is required. Please verify adequate clearance prior to installing.
- **Rocker Arms:** A high quality aftermarket adjustable rocker arm setup from Crane or Comp Cams is highly recommended. **NOTE: #61229 requires the use of a shaft mounted rocker system.**
NOTE: You must check retainer-to-rocker clearance prior to starting engine.
- **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. Champion RC-12YC are 1/4" shorter than "N" series plugs and may be required for header clearance. Use anti-seize on the plug threads to prevent galling in the cylinder head, and torque to 10 ft./lbs. **NOTE: Do not overtighten sparkplugs!**

INSTALLATION PROCEDURE

Installation is the same as for original equipment cylinder heads. Consult service manual for specific procedures, if necessary. Use Edelbrock head gasket #7310. #7310 has a flattened steel O-ring around each bore and will provide an excellent, long lasting seal. However, it will compress the aluminum and you must use #7310 for subsequent gasket changes to get a good seal.

NOTE: YOU MUST DRILL "STEAM HOLES" IN CYLINDER HEADS FOR 400 C.I.D. ENGINES (See Figure 1).

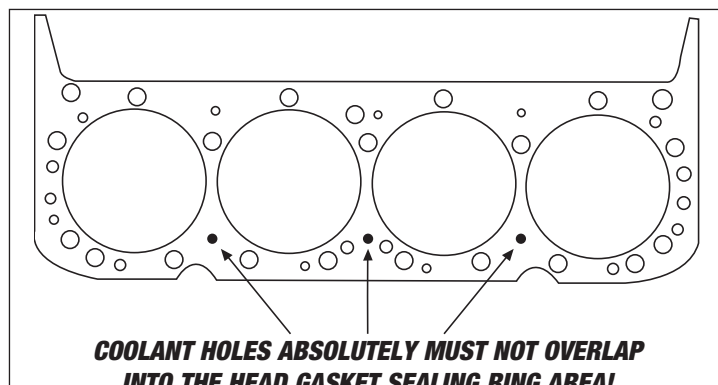


Figure 1 - Steam Hole Locations (400 C.I.D. Engines ONLY)

Drill three .125" holes in each head using 400 c.i.d. head gasket as a guide. **DRILL ONLY THE THREE LOWER STEAM HOLES** (closest to the spark plugs) as indicated. Drill straight into the head (90° from the deck) until the drill breaks through into the water jacket (about 9/16").

IMPORTANT NOTICE

These cylinder heads are equipped with valve spring cups. Due to the diameter of the valve spring cups, it may be necessary to clearance headbolt washer #1 (**See Figure 2**). Headbolt washer in the #1 location is the only washer that may require clearancing (**See Figure 3**). This will allow the headbolt washers to properly seat onto the cylinder head. This can also be accomplished by removing the valve spring and cup, then position the washer prior to installation of cylinder head.

Be sure to thoroughly clean the mating surfaces of the block and the head to remove any oily film before installation. The use of alcohol or lacquer thinner on a lint-free rag is highly recommended. Apply RTV silicone or ARP thread sealer to head bolt threads, and apply engine oil or ARP lubricant to the head bolt washers and underside of bolt heads. Torque bolts using the torque sequence provided (**See Figure 3**) to 65 ft./lbs. in three steps (40-55-65). Verify that the engine is connected to a proper chassis ground. When refilling the radiator, make sure to use a 50/50 mixture of coolant to water. A re-torque is highly recommended after initial start-up and cool-down (allow 2-3 hours for adequate cooling).

Other Assembly Tips: When installing the sparkplugs and headers, be sure to use a high temperature anti-seize compound on the threads to reduce the possibility of thread damage in the future.

NOTE: Torque sparkplugs to 10 ft./lbs. Do not overtighten sparkplugs! If short reach plugs are used, poor performance and possible engine damage may occur.

PUSHROD GUIDE PLATE ALIGNMENT

Complete Edelbrock cylinder heads are sold with the pushrod guideplates and rocker studs installed, but they will require checking for proper valve train alignment and pushrod clearance before operating. The pushrod guideplates are attached to the cylinder heads with two (each) rocker studs. There is enough clearance around the stud holes to adjust the guideplates for optimum alignment of your valve train components (**See Figure 4**).

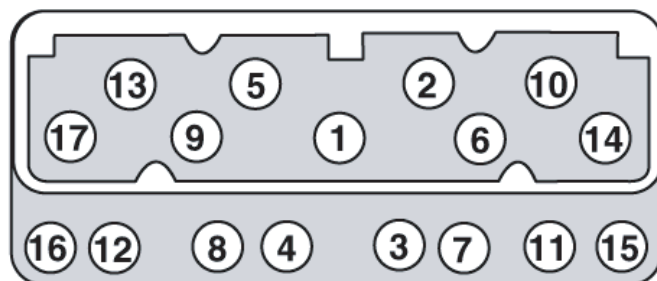
1. After the heads have been bolted on your engine and torqued to specs, install your pushrods, rocker arms, and rocker arm adjusting nuts. Then check pushrod-to-cylinder head clearance.

NOTE: YOU MUST CHECK TO ENSURE THAT THERE IS CLEARANCE BETWEEN THE PUSHRODS AND THE CYLINDER HEADS (.005" min.) (See Note "A", Figure 4).

2. If adequate clearance exists between pushrod and head, slowly turn engine over through at least two revolutions while watching pushrod. Make sure that pushrod does not rub on the head either at full lift or when the valve is seated closed.
3. If pushrod rubs on the cylinder head, remove rocker arms, loosen the rocker studs and move the guideplate as needed to provide clearance.
4. After checking all pushrods for proper clearance, ensure that the tip of the rocker arm is making adequate contact with the top of the valve stem.
5. Carefully re-torque to 45 ft./lbs. any rocker studs that were loosened. Check alignment again to be sure that the guideplates did not move while torquing the studs.



Figure 2 - #1 Head Bolt Washer



**Figure 3 - Cylinder Head Bolt Torque Sequence
Torque Bolts to 65 ft./lbs. in Three Steps (40-55-65)**

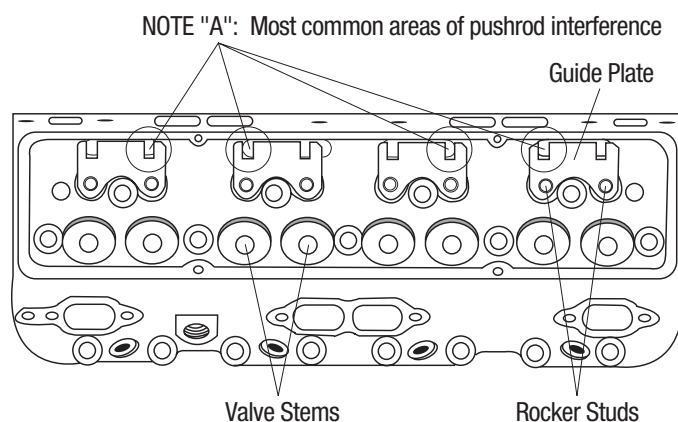


Figure 4 - Pushrod Guide Plate Clearance

SPECIFICATIONS

Head Bolt Torque:	65 ft./lbs. (in steps of 40-55-65)
Rocker Stud Torque:	45 ft./lbs.
Intake Gaskets:	Fel-Pro #1206 or Edelbrock #7217
Spark Plug Position:	Straight
Combustion Chamber Volume:	68cc
Port Volume:	Intake:
.....	61205, 61209: 225cc
.....	61215, 61219: 260cc
.....	61229: 275cc
.....	Exhaust: 88cc
Deck Thickness:	11/16"
Valve Seats:	Hardened, interlocking (Compatible with race fuels)
Valve Size:	Intake - 2.10" (#61205 and 61209)
.....	Intake - 2.14" (#61215 and 61219)
.....	Intake - 2.17" (#61229)
.....	Exhaust - 1.60" (All Heads)
Valve Spring Outer Diameter:	1.34" (#61205)
.....	1.57" (#61215)
.....	1.55" (#61209 and 61219)

P/N 61205

Valve Spring Installed Height:	1.800"
Max. Valve Lift:	0.650"
1st Load:	130 lbs. @ 1.800"
2nd Load:	327 lbs. @ 1.200" (.600" Lift)
Coil Bind:	1.090" (.650" Max Lift Recommended)

P/N 61209

Valve Spring Installed Height:	1.970"
Max. Valve Lift:	0.725"
1st Load:	225 lbs. @ 1.970"
2nd Load:	600 lbs. @ 1.245" (.725 Lift)
Coil Bind:	1.250" (.725" Max Lift Recommended)

P/N 61215

Valve Spring Installed Height:	1.900"
Max. Valve Lift:	0.680"
1st Load:	150 lbs. @ 1.900"
2nd Load:	410 lbs. @ 1.300" (.600" Lift)
Coil Bind:	1.070" (.680" Max Lift Recommended)

P/N 61219

Valve Spring Installed Height:	2.020"
Max. Valve Lift:	0.770"
1st Load:	250 lbs. @ 2.020"
2nd Load:	750 lbs. @ 1.250" (.770 Lift)
Coil Bind:	1.150" (.770" Max Lift Recommended)

P/N 61229

Valve Spring:	N/A" (Valve Springs Not Included)
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