



EDELBROCK E-CNC LS3 CYLINDER HEADS CATALOG #61319 and 61329 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: These E-CNC cylinder heads are designed for GM Gen III & IV LS engines and are ideal upgrades for cathedral port or 3.89" minimum bore LS applications. The heads provide great "out-of-the-box" performance and feature CNC-ported 230cc intake and 80cc exhaust ports. The 69cc combustion chambers are CNC profiled to match. 61319 is drilled for standard Gen III & Gen IV LS blocks while 61329 is drilled for 6 bolt LSX blocks, but can be used on stock Gen III & IV LS blocks.

Heads are assembled with the following components:

- ☐ High quality, stainless steel, one-piece, 2.135" intake and 1.55" exhaust valves for increased flow
- ☐ 2-ring positive oil control seals
- ☐ Valve springs accept camshafts with up to .650" lift
- ☐ Steel valve spring retainers

IMPORTANT NOTES, READ BEFORE BEGINNING INSTALLATION!

For a successful installation, the Edelbrock Cylinder Heads require some additional components. To complete your installation, you will need the following items:

- ☐ Head Gaskets:
 - 61319 - Left: 1161 L-041 / Right: 1161 R-041 or appropriate factory LS3 type.
 - 61329 - Left: 26472 L-041 / Right: 26472 R-041 or appropriate factory LSX type.
- ☐ Stock type LS3 intake manifold O-ring seals; GM #19256623.
- ☐ New cylinder head bolts or studs, with hardened steel washers.
- ☐ Heads are machined to accept stock rocker arms. Aftermarket rocker arm assemblies for Gen III & IV engines may also be used but may not be an emissions compliant configuration (for race-use or pre-pollution controlled vehicles).*
- ☐ Correct length pushrods (the required pushrod length is dependent upon camshaft base-circle diameter and any amount that has been surfaced from the heads or machined from the block. Always check for correct pushrod length.) The use of an aftermarket camshaft or altered deck heights may not be an emissions compliant configuration (for race-use or pre-pollution controlled vehicles).*
- ☐ 14mm x 17.5mm (.708") reach, tapered seat, resistor-type spark plugs.

CHECKING PISTON-TO-VALVE, VALVE-TO-BORE AND PISTON-TO-HEAD CLEARANCES: It is highly recommended that piston-to-valve clearances are checked and corrected to minimum specs, if necessary. These cylinder heads are designed to be used with factory pistons and camshafts. Use of aftermarket pistons or camshafts or any other alterations may require custom machining and may not be an emissions compliant configuration (for race-use or pre-pollution controlled vehicles).*

Actual piston-to-valve 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. **These heads are designed for LS engine blocks with a minimum bore size of 3.89".**

ACCESSORIES: Although Edelbrock Cylinder Heads will accept OEM components (valve covers, intake manifold, etc.), Premium quality hardware is recommended.

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 #8596 (Gen III) and #8595 (Gen IV) includes all head bolts needed for use with these cylinder heads. New factory head bolts may also be used. *Because factory bolts are a torque-to-yield type fastener, the old head bolts **CANNOT** be re-used.*

ROCKER ARMS AND VALVE TRAIN: These cylinder heads are designed to use stock LS3 intake rocker arms or aftermarket replacement rocker arms designed for Gen IV engines. Due to the intake port design on these CNC-ported heads, the factory rocker bolts can optionally be shortened, or use aftermarket rocker bolts such as Edelbrock #8597.

VALVE COVERS: These cylinder heads will accept stock LS3 style valve covers.

INTAKE MANIFOLD: Cylinder Heads will accept stock intake manifolds. For race-use or pre-pollution controlled vehicles*: Edelbrock's Super Victor Carbureted manifold for 4500 series carbs #2821, Super Victor Carbureted manifold for 4150 series carbs #2826, Pro Flo XT Manifold #7142 with fuel rail kit #3648, Super Victor EFI manifold for 4500 style throttle bodies #28215, or Super Victor EFI manifold for 4150 style throttle bodies #28265, (EFI manifolds requires fuel rail kit #3638, #3629 or equivalent). Use stock type LS3 individual port O-ring seals (GM 19256623).

EXHAUST HEADERS: These cylinder heads will accept stock exhaust manifolds. For race-use or pre-pollution controlled vehicles*: Exhaust headers and a low restriction exhaust system are highly recommended for use with these Edelbrock Cylinder Heads. Exhaust ports are CNC-profiled to match stock or Edelbrock #6962 exhaust gaskets which are recommended for this application.

SPARK PLUGS: Use 14mm x 17.5mm (.708") reach tapered seat resistor type spark plugs. Heat range requirements will vary by application. For many applications, GM factory spark plugs or equivalent spark plugs such as Champion RS14YC6, NGK TR55, or Denso IT16 spark plugs may be used. **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 a short reach plug is used, poor performance and possible engine damage may occur.**

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