



# GLIDDEN-VICTOR II CYLINDER HEADS

## For Small Block Ford

### Part #77319, 773169

## 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:** The Glidden-Victor II (GV2) cylinder head is designed for cylinder head porters and engine builders engaged in all-out racing. The ports are deliberately small to permit a variety of port shape and size options. There is a great deal of work required to prepare these heads for use. These heads feature an 11.25° valve angle. **Valve guides and seats are not installed. They will require installation, final sizing, and a valve job to match the valves you will be using.**

**NOTE:** These heads are drilled for 1/2" diameter head bolts as used on 351-W engines. Use Edelbrock Head Bolt Kit #8553 or stock Ford 1/2" head bolts with hardened washers (ARP #200-8533) to mount these heads on 351-W engines. To mount these heads on 289-302 engines, you must use Edelbrock head bolt bushings with integral washers #9680 with either Edelbrock head bolt kit #8552 or stock 7/16" head bolts. These heads also feature water passage provisions located on both sides of the heads. These provisions use 1" NPT fittings, max depth is 1.25".

### BEFORE BEGINNING INSTALLATION

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

For a successful installation, GV2 Cylinder Heads require some components other than original equipment parts. To complete your installation, you will need the following items:

- Head gaskets; Edelbrock #7364, Fel-Pro #1011-2, or Fel-Pro Loc-Wire #1006 (*Application dependent. See "Accessories" section for details*).
- Intake manifold gaskets; Fel-Pro #1253-3 will fit the ports of this cylinder head, but will require punching holes in the gasket for the unique intake manifold bolt pattern (*Intake gasket material will vary according to engine design and builder's preference*).
- Exhaust gaskets; Fel-Pro #1427 or equivalent (*Exhaust gaskets will vary according to engine design and builder's preference. Some builders will use silicone sealer designed for exhaust systems*).
- Valve cover gaskets; Edelbrock #7560 or equivalent (*Depending on valve cover type used; see "Accessories"*)
- Edelbrock head bolt kit #8852, 8853, 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 shaft-mounted rocker arms such as Jesel Components, Probe Industries or T&D Machine. Always check rocker to valve spring, rocker to valve cover, and rocker to valve cover rail clearance before final assembly.
- Pushrods; Use hardened pushrods compatible with your adjustable rocker arm assembly.

**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. Because of a unique combustion chamber shape, Edelbrock GV2 cylinder heads require special pistons. The proper dome shape is available through JE pistons. These are not off the shelf pistons, as variables such as bore, stroke, and rod length may be different for each application. 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 arms to the valve cover rail.

**ROCKER ARM GEOMETRY:** Rocker arm 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 these components come into proper 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 #8552 can be used on engines with 7/16" head bolt holes (289 & 302). *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:** *It is recommended that 289-302 engines producing 380 or more horsepower (or with nitrous oxide—essentially any application requiring a Victor level cylinder head) be converted to accept 1/2" diameter head bolts by a qualified machine shop to ensure maximum head gasket durability.*

### ROCKER ARMS AND PUSHRODS:

**Shaft-Style Rocker Arms:** This cylinder head is designed to use Shaft-Style rocker arms only. Edelbrock recommends the use of Jesel, Probe, or T&D rocker arms.

**Pushrod Length:** Custom length pushrods will be required. The length will vary depending upon your valve length and camshaft/lifter combination. Follow your rocker arm manufacturer's recommendation for determining the correct pushrod length for your application.

**VALVES AND VALVE SPRINGS:** Edelbrock Glidden-Victor II cylinder heads will accept 2.20" (recommended, not maximum) diameter intake valves and 1.60" (recommended, not maximum) diameter exhaust valves. A valve length of 6.200" is recommended for a typical valve spring installed height of 2.15". However, select a valve length as necessary for proper valve spring installed height for your particular application. These cylinder heads will accept a 1.750" outer diameter valve spring. Use springs recommended by your cam manufacturer.

**PISTONS:** Because of a unique combustion chamber shape, Edelbrock GV2 cylinder heads require special pistons. The proper dome shape is available through JE pistons. These are not off the shelf pistons, as variables such as bore, stroke, and rod length may be different for each application.

**INTAKE MANIFOLD:** Edelbrock GV2 Cylinder Heads are matched in size and operating range with Edelbrock Victor and Super Victor series intake manifolds. While Fel-Pro gasket #1253-3 may be used as a port template for this cylinder head, customers should note that the bolt hole spacing is significantly different. Intake manifolds must be port-matched to the cylinder heads for optimum performance.

**Intake Manifold Bolts:** The intake manifold bolts must be long enough to have engagement with the full length of the threads. Over-torquing of the intake manifold bolts can create problems such as thread failure and intake or head gasket failure. Lubricate bolt threads prior to assembly.

**Distributor to Intake Manifold Clearance:** Because of the higher position of the intake manifold on the engine with these cylinder heads, the clearance of the distributor housing to the intake manifold may be compromised. If enough clearance cannot be obtained, taller housing distributors are available from MSD. For 302 engines use MSD #8579, 351W engines use #8578, and 351C engines use #8577. Contact MSD for additional information.

**EXHAUST HEADERS:** You must use headers with a flange that has been drilled to accept a 2.75" inline bolt spacing. Refer to Fel-Pro gasket #1427 for a template. Use suitable exhaust gasket material, usually available through your local speed shop or mail-order supplier. *(Exhaust gaskets will vary according to engine design and builder's preference. Some builders will use silicone sealer designed for exhaust systems).*

**VALVE COVERS:** Because most roller rockers are physically larger than stock rockers, taller valve covers are usually required to clear them. Use Edelbrock Signature Series chrome valve covers #4460, or Elite Series polished aluminum valve covers #4260.

**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 manufacturer's specification for aluminum heads; usually 10 ft./lbs. **DO NOT OVERTIGHTEN!**

**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 cyl. head fasteners (7/16" stud or 1/2" head bolts or studs), not recommended with nitrous or forced induction - Edelbrock Head Gasket #7364 or Fel-Pro Head Gasket #1011-2.
2. Highest performance racing engines. 12:1 and above compression ratio, 1/2" cyl. head fasteners designed for the highest preload, engines using nitrous or forced induction - Fel-Pro Head Gasket #1006 Locwire.

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

## INSTALLATION PROCEDURE

Installation is the same as for original equipment cylinder heads. Consult service manual for specific procedures, if necessary. See "Head Gaskets" section above for proper cylinder head gasket selection.

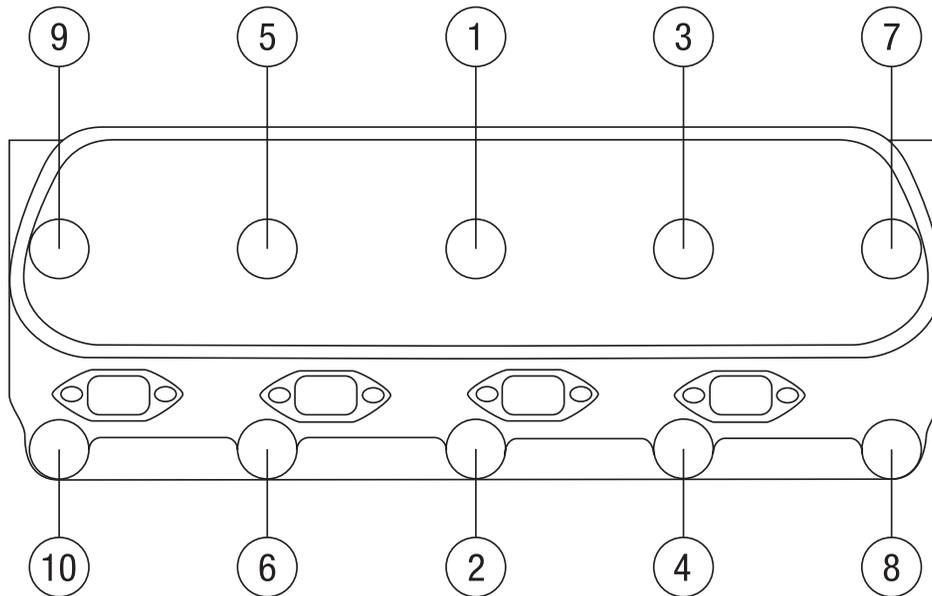
1. Be sure that the surface of the block and the surface of the head are thoroughly cleaned to remove any oily film before installation. Use alcohol or lacquer thinner on a lint-free rag to clean.
2. Apply oil or suitable thread lubricant to head bolt threads and the underside of bolt heads and washers 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.
3. Torque all bolts 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 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 15 ft./lbs. on the intake manifold bolts** and lubricate the bolt threads prior to assembly.

**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 - Small Block Ford Cylinder Head Bolt Torque Sequence**  
**Torque Bolts in 3 to 4 Steps, Gradually Approaching Final Torque**  
**(See "Specifications" Below for Head Bolt Torque Spec)**

## SPECIFICATIONS

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|                              |   |
|------------------------------|---|
| Head bolt torque:            | 7/16" bolts - 70/80 ft./lbs. (short/long bolts)<br>1/2" bolts - 100/110 ft./lbs. (short/long bolts)   |
| Intake bolt torque:          | 16-18 ft./lbs.  |
| Deck thickness:              | 3/4"  |
| Valve Seats:                 | Hardened, interlocking compatible with all fuels  |
| Recommended Valve Diameter:  | 2.20" Intake, 1.60" Exhaust   |
| Valve Center to Center:      | 1.93"   |
| Recommended Valve Length:    | 6.200" Recommended for 2.15" valve spring installed height. Will vary depending upon required valve spring installed height for your application. Choose valve length based on your valvetrain combination. |
| Valve Spring O.D.            | 1.75"   |
| Valve Guide Inside Diameter: | .312 I.D. Nominal (Intake), .342" Nominal (Exhaust)   |
| Rocker arms:                 | Aftermarket shaft-mount, or stud-mount roller type required (7/16" stud)  |
| Pushrods:                    | Custom Length   |
| Spark plugs:                 | 14mm x 3/4" reach, gasketed seat  |
| Water Passage Provision:     | 1" NPT, 1.25" max depth   |



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