



GM MUSCLE SERIES CENTER BOLT VALVE COVERS INSTALLATION INSTRUCTIONS (P/N 241-290 – 241-293)

To preserve the warranty, these instructions must be read and followed thoroughly BEFORE and DURING installation.

CAUTION! If your engine has non-standard valve train components, such as a high-lift camshaft, roller-tip rocker arm, higher lift ratio rocker arms, stud girdles, etc., there may be insufficient clearance when using Holley GM Muscle Series aluminum valve covers. You must check all internal clearances according to steps 8-11 below.

WARNING! INSUFFICIENT CLEARANCE TO MOVING VALVE TRAIN COMPONENTS COULD LEAD TO PART BREAKAGE AND RESULT IN SERIOUS ENGINE DAMAGE.

COMPATIBLE ENGINE MODELS:

PART #	MAKE	ENGINES	BOLT PATTERN
241-290 241-291 241-292 241-293	GM / Chevrolet	Vortec (305/350) ZZ4 / ZZ6	Center Bolt

RECOMMENDED TOOLS FOR INSTALLATION:

3/8" Ratchet Handle	Scraper Blade
1/2" Standard or Deep-Well Socket	Adhesive Gasket Sealant
6" Socket Extension	Torque Wrench

LIST OF INCLUDED PARTS:

QTY. IN BOX	PART DESCRIPTION
2	Valve Covers, GM Muscle Series Center Bolt, Vortec / ZZ4 / ZZ6
8	Extended Length Valve Cover Bolts w/ Rubber Washers
1	PCV Grommet, Rubber
1	Oil Fill Plug, Rubber
1	Warranty Statement – 90 Day
1	Installation Instructions



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INSTALLATION INSTRUCTIONS:

CAUTION! Never work on a hot engine. Open hood and allow all components to cool before installing.

1. Remove any oil fill caps or wires that are attached to the existing valve cover.
2. Remove the existing valve cover hardware and covers, then carefully clean any gasket material that adheres to the head surface. Do not allow any gasket debris to enter the engine.
3. Install new valve cover gaskets (not supplied) in the Holley GM Muscle Series valve covers using an adhesive type gasket sealant (if applicable).
4. If you are using 100% stock valve train components, then install valve covers. **If any parts of the valve gear are aftermarket, see steps 8-11 to ensure proper clearances.**
5. Torque the valve cover bolts to 5-6 ft/lbs, making sure gaskets do not slip out of position. Proper torqueing will help to ensure that your covers do not leak oil.
6. Re-install any applicable items removed in Step 1.
7. Start the engine and carefully check for any signs of oil leakage.



8. Place small pieces of modeling clay on any protruding areas of the valve train (both moving and stationary). Include the following: both tips of the rocker arms, the pushrods (closest to the valve cover flange surface), on the rocker arm studs, or on the rocker shaft attachments. In general, check all the points that you are not sure about.
9. Install the valve cover, using the correct gasket and tighten the valve cover hardware to 5-6 ft/lbs of torque. Turn the engine over by hand or with a SHORT lever, at least two full revolutions of the flywheel. Removing the spark plugs is advised.

CAUTION! Be alert for any signs of unusual binding as the engine is turned. If binding occurs; stop turning immediately, remove the valve cover, and check the clay pieces. **DO NOT FORCE THE ENGINE TO TURN.**

10. After two complete revolutions, remove the valve cover and check the clay thickness with a depth micrometer, or suitable instrument. Clay should compress to no thinner than .080" at any point for moving parts, and no thinner than .040" for stationary parts.

NOTE: If the clearance is not acceptable according to Step 10, Holley recommends that you install a spacer to increase clearance to the valve cover.

11. If valve train clearance is acceptable, carefully remove all traces of the modeling clay from the engine. Return to step 5 and complete the installation.

If you have any questions or concerns, please do not hesitate to contact us using the information below:

Holley Technical Support
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