

## Installation Instructions

# 814111

CHEVY 396-502 BIG BLOCK

(STD. DECK HEIGHT)

1968-74 CHEVROLET PASSENGER CAR  
& WAGON

1967-81 CAMARO

1965-77 CHEVELLE, ELCAMINO

1970-74 MONTE CARLO

1968-74 CHEVY II/NOVA

**SCAVENGER**  
**SERIES ELITE HEADERS**

**409SS Stainless Steel**

WARNING: The product accompanying this document is legal only for off-highway use (except in California or states that have adopted California emission standards), racing use or for use on pre-emission-controlled motor vehicles/motor vehicle engines (pre-1966 domestic vehicles certified to California standards, pre-1968 domestic vehicles certified to federal standards and all pre-1968 foreign vehicles), per the manufacturer's application guide.

1RWHInstallation of this product requires an adequate work space, general mechanic's tools, general mechanical "know how" and a reasonable level of experience. Most auto enthusiasts with these resources will have little difficulty installing these headers. However, you should carefully read these instructions before attempting to install these headers. If in doubt, consult a professional mechanic. (Better to do it now than to get stuck halfway through the installation.)

Check to make sure that you have received the proper parts for your installation. The header number will be stamped on the engine flange. If you are unsure you have received the proper parts call before you start work.

Be sure to work safe! Whenever you work under the vehicle be sure that it is located on level, solid ground and is supported by adequate safety stands. **Remember: Hot asphalt will not support most jack stands!**

Many factors affect the installation of headers, some of which are; broken or aftermarket motor mounts, accidents that impact the configuration of the frame, and/or the installation of different engines or aftermarket cylinder heads. If you are not comfortable with welding operations, we recommend that you contact a professional exhaust system specialist to install your new headers.

**Attention Customers breaking in new engines:** Due to the extreme heat generated during the break-in process, the appearance of the ceramic coating may be altered in certain areas. The protection characteristics and thermal barrier properties of the coating is never compromised. It is recommended that a cast iron manifold or old set of headers be used for this process.

The purchaser is responsible for following all installation instructions and safety guidelines supplied with your new Flowmaster Performance Exhaust Product. Flowmaster Performance exhaust assumes no responsibility for damages resulting from improper operation, misuse, abuse, or lack of reasonable care, or any problems resulting from incompatibility with other manufacturer's products.

Flowmaster uses sealing beads on its headers. We have found that when installed correctly, the raised bead around each port increases the pressure exerted on the gasket directly adjacent to the port and effectively prevents leaking gaskets. It is normal for the flange to be raised off the cylinder head the thickness of the sealing bead. It is important when installing the header, to install all bolts loosely, and then tighten evenly to ensure the flat installation of the flange. The torque sequence from one flange to another will vary, but generally every bolt on a header should be first fit snug, starting from the inside of the flange working out, alternating from top to bottom so that the bolt connects the flange to the manifold to the point where they barely touch. Second, using the same inside-out pattern, tighten each bolt until finished. This method will help prevent leakage and will give the user the best possible performance out of their new set of headers.

Note: These headers will **not** fit a Saginaw 825 close-ratio steering box without modification due to the increased size of the power steering unit.

Note: Vehicle **must** have Original Style Big Block motor stands and motor mounts for headers to fit properly. They are no longer available from G.M., but a reproduction is available from Classic Industries under P/N K702. If the motor is mounted on Small Block frame mounts, you will notice possible steering box and idler arm fit problems.

## DISASSEMBLY

- 1) Place the vehicle in a location where the floor is solid and flat, with adequate lighting. Do not attempt to work on a hot engine. Heat causes metal to expand and makes removal of fasteners difficult at best. **Disconnect the battery cables from the battery.** Raise the front of the vehicle to obtain adequate access to the bottom exhaust manifold flanges. Use large base jack stands to support the vehicle. Do not rely on the jack! Block the tires to prevent the vehicle from rolling off of the jack stands.
- 2) Disconnect and mark the spark plug wires by grasping and gently twisting the spark plug wire boots. Do not pull on the wires! Remove the spark plugs. Brush or blow off any debris which may have collected around the manifolds or spark plugs. This will help prevent foreign matter from entering the combustion chamber when the manifolds are removed. Spray WD-40 or some type of penetrating lubricant on all accessible exhaust manifold fasteners and fittings before attempting to remove them.
- 3) Disconnect the head pipes from the exhaust manifolds and remove the manifolds. Depending on the application, you may be required to remove the alternator, dipstick, dipstick tube, clutch linkage, and oil filter. In some cases it may be necessary to remove the starter, and power steering unit. Only remove what is necessary to allow for the removal of the manifolds and the installation of the headers.
- 4) Replace the spark plugs finger tight so that no debris will get into the cylinders during the cleaning process.
- 5) Remove any gasket material or carbon deposits that remain on the head surface. The use of a gasket removal agent will ease the removal of any gasket material. We recommend the use of a sharp gasket scraper to remove the bulk of material and to finish the operation with a sanding block to provide a clean flat sealing surface.
- 6) After cleaning has been completed, remove the spark plugs again.
- 7) At this point it may be necessary to cut the head pipes to allow room to install the headers. If you are installing a new exhaust system you may cut the head pipes anywhere you choose, but if you are using the existing exhaust, you will need to cut the head pipes in the proper location so that they will be able to be welded to the connectors supplied with your headers.

## INSTALLATION

- 1) Place a floor jack under the oil pan with a flat board for support. Loosen the transmission mount bolts. Remove the passenger side motor mount center bolt and raise the motor approximately 2”.
- 2) Starting from below, work the passenger side header up through the chassis into position. When the header is about half way in, work the starter past the header tubes in to position and reinstall the starter bolts.

- 3) Carefully lower the motor back into position and replace the motor mount bolt.
- 4) Slip the gasket into position and start all the supplied header bolts and lock washers.
- 5) Tighten the header bolts evenly starting from the center to a final torque of 35 ft./lbs.
- 6) Remove the driver's side motor mount bolt and raise that side of the motor approx. 2".
- 7) From below, work the driver's side header up into position.
- 8) Slip the gasket into position and start all the supplied header bolts and lock washers. If the car is equipped with power steering, use the original bolt with the supplied spacer in the first hole.
- 9) Tighten the header bolts evenly starting from the center to a final torque of 35 ft./lbs.
- 10) Power Steering, Alternator and Air Conditioned cars may require modification to the brackets, see illustrations below.
- 11) Using the hardware provided, install the Flowmaster Ball flange connector to the back of the header and determine the connection to the exhaust. Weld the exhaust system to the ball collector.
- 12) Tighten the transmission bolts and reinstall alternator, oil filter, and oil dipstick tube.
- 13) Install the spark plugs and connect the wires to the proper plug. Check to make sure that all the wiring, brake lines, hoses, etc. are clear of the headers or any exhaust component.
- 14) Make sure all necessary brackets and accessories have been replaced and secured. Reconnect the negative battery cable.

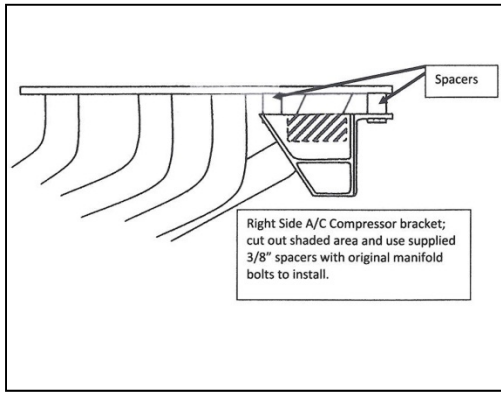
### IMPORTANT CHECK LIST

- **Be sure that all brake lines and fuel lines are clear of headers and/or connector pipes.**
- **All spark plug wires, battery cables or other electrical components should be clear of headers and/or connector pipes.**
- **If dipstick tube has been removed, make sure it is installed properly and that the dipstick has been replaced.**
- **Double check the tightness of all bolts including brackets and accessories.**

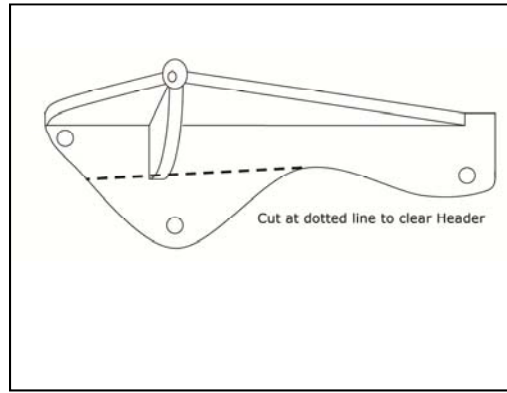
Start the engine and allow it to warm up to operating temperature. Check for any unusual noises or exhaust leaks. If everything is OK, stop then engine and tighten all bolts while the engine is still warm. **Note:** Recheck the header bolts periodically to make sure they have not loosened. Retighten after the first 500 miles and then again at 1000 miles.

### PARTS LIST

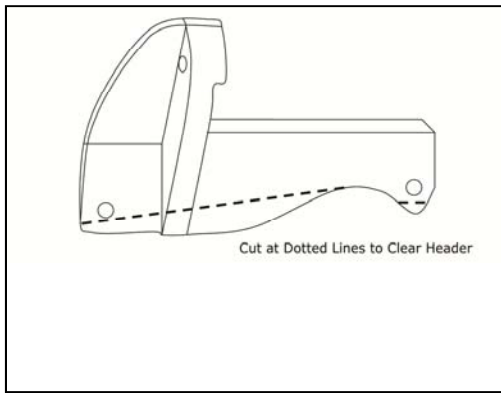
<u>Qty.</u>	<u>Description</u>	<u>Qty.</u>	<u>Description</u>
(1)	Drivers Side Header Assembly	(4)	3/8"-16 x 2 1/4" Ball Collector bolts
(1)	Passenger Side Header Assembly	(4)	3/8"-16 Hex Nut
(2)	Header Gaskets	(4)	3/8" Split Lock Washer
(2)	3" to 2 1/2" Header Reducer Tube	(2)	3/8" Spacer
(2)	Ball Connector Flange	(1)	3/4" Spacer
(16)	3/8"-16 x 1" Header Bolts	(1)	Flowmaster Decal
(16)	3/8" Star Lock Washers		



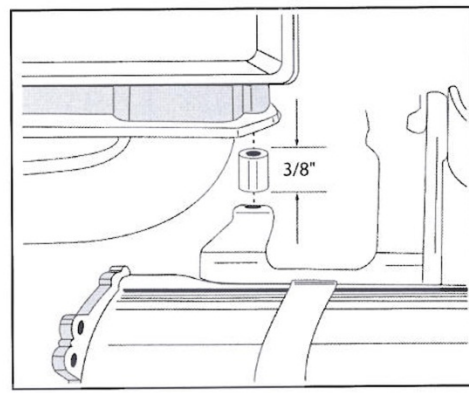
**Right Side A/C Bracket**



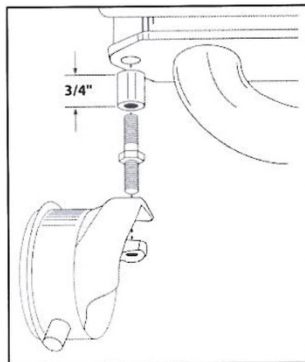
**69-72 A/C Bracket (typical)**



**73-74 A/C Bracket (typical)**



**68 A/C Bracket**



**68 Power Steering Bracket**