P/N 22609FLT Motor Mount Adapter Brackets
Chevy Small Block Conversion
Into a 1982-93 Chevrolet S10 or GMC S15 (2WD)
Using a TH-350 Automatic Transmission
Instruction Sheet

WARNING! Breaking in an engine with ceramic-coated headers WILL result in damage to the coating and will VOID all warranties. Ceramic-coated headers require several heat cycles to fully cure before they will withstand extreme heat. Flowtech™ recommends using cast iron exhaust manifolds or old headers to break in new engines to avoid coating damage. Please call tech service at 270-781-9741 or 1-866-GOHOLLEY for additional information regarding ceramic-coated exhaust products.

INTRODUCTION:

We realize that you had many choices when you chose your headers, and we thank you for purchasing Flowtech™ Headers. At Flowtech™, we put our many years of performance exhaust experience into every product we build. We feel and know you will agree that Flowtech™ Headers are the best you can buy at any price.

As a result of the restricted room available in some engine compartments, you may experience a close fit to some body and chassis components. This condition is normal. While the installation is not complex, it may be time consuming. However, as soon as you start your engine, the additional horsepower and improved performance will more than justify your efforts. Proper installation and maintenance will ensure a long life and maximum performance from your Flowtech™ Headers. If you have any questions, please call Technical Support at 1-270-781-9741 or 1-866-GOHOLLEY.

INSTALLATION INSTRUCTIONS:

This product is designed to bolt over the original 2.8 liter V6 rubber engine mount pads. First step is to install them over the V6 rubber mount pads using the 7/16 – 14 X 5" hex head bolts, nuts, and washers supplied with mounting brackets. Install the long bolt through the mounting bracket and rubber mount bracket. Repeat for the other side.
Once the brackets are in position, the engine can then be positioned into the chassis for final assembly.

NOTE: It may be necessary to grind the small metal tabs located on both sides of the stock 2.8 liter V6 rubber mount pads for clearance to the new engine mounting brackets.

The engine mount brackets have two engine position locations. The upper positioning holes will make the engine approximately one inch higher than the holes. *The engine mounting height will make a major difference in the exhaust system requirements, as well as the engine choice.* It is best to trial fit the engine to determine the best choice of mounting height. When possible, the upper mounting location is preferred. The lower position will require that the engine mounts be modified for additional clearance. Firewall modification will be necessary with either hole position.

THE LOWER ENGINE POSITION REQUIRES:

- Stock exhaust manifolds from a 1982-92 low performance V8 Camaro or Firebird (with 2" diameter outlets). The driver's side manifold must be surfaced approximately 1/8" for steering box clearance. The use of these manifolds also require the use of 1988 or newer cylinder heads and the engine must have the oil dipstick on the passenger's side (1980 and newer engine blocks). Modification of the engine support is required for starter motor clearance. Modification of the engine mounting brackets is required by removing the material around the upper mounting holes.
- Flowtech™ Headers P/N 12502FLT and modifications to the firewall for engine clearance.
- When using the TH-350 transmission, we recommend the use of the 168 tooth flexplate. Be that the flexplate has the correct balance for the engine assembly that you are using. The original transmission crossmember will work with slight modifications to the TH-350 rubber mounting pad. The use of a TH-350 with the 9" tailshaft housing requires that no modifications to the driveshaft will be necessary. The ears on the bottom of the TH-350 bellhousing area of the transmission case, where it meets the engine must be trimmed for clearance. If the S10/S15 was equipped with an automatic transmission, the stock shifter may be retained with minor modifications. If you are replacing a TH-200C transmission, the truck is already equipped with the correct shift indicator. If you are replacing a TH-200R transmission, you will need to install the GM P/N 25053892 shift indicator. If you are replacing a manual transmission, an aftermarket floor shifter is required. We recommend the use of a HURST Pro-Matic shifter P/N 383-8510.

WATER PUMP & THERMOSTAT HOUSING:

- If you use the long style water pump found on 1978 and new engines, it will be easier to locate the required engine accessories. If the truck was originally equipped with air conditioning, it will require the use of a long water pump.
- The sort version water pump may be used for additional fan-to-radiator clearance. Bracket modifications are required for the installation of the alternator and power steering pump. Air conditioning cannot be used with the short pump.

ALTERNATOR:

- The stock V6 alternator can be used by changing the drive pulley to one from a V8 alternator. The correct V8 alternator front bracket (GM P/N 14081227) and spacer (GM P/N 6269234) must also be used. If using a 4 cylinder alternator, it is not recommended to replace it with a V8 alternator.

POWER STEERING:

- It is best to use a V8 power steering pump in place of the original V6 pump. The V8 pump allows the use of factory mounting brackets for an easier installation. (Use the brackets form a 1981-84 GM full size "C" series pickup.) Be sure to use the correct V8 pulley for proper belt alignment. (This pulley will have either single or dual grooves, depending on if you have air conditioning or not.)
- Be sure to pick a power steering pump that is compatible with your engine. Some brackets require tapped holes in the heads and the exclusive use of the long style water pump, while others may require other mounting positions.
- You may be able to reuse the original V6 power steering high-pressure hose, depending on the model year of the new V8 power steering pump. If the V8 power steering pump used a different size pump fitting, it will be necessary to use the V8 high-pressure hose. The low-pressure return line normally requires lengthening and possible rerouting to allow for proper clearance around the belts and pulleys.
- The stock V6 alternator can be used by changing the drive pulley to one from a V8 alternator. The correct V8 alternator front bracket (GM P/N 14081227) and spacer (GM P/N 6262934) must be used. If using a 4 cylinder alternator, it is not recommended to replace it with a V8 alternator.
- The S10/S15 is equipped with a R4 radical compressor, which has been in use since 1973 on many V8 engines, making the mounting bracket easy to find. Due to the new mounting location, it is necessary to modify the wiring harness and lengthen the hoses. Vehicles using the A/C should be equipped with a minimum of a four core radiator.

GAUGES:

- When installing the V8 engine, you must use the stock V8 sending units. These units will be compatible with your stock S10 gauges. If the truck is equipped with a factory gauge, it will be necessary to recalibrate it for use with the V8 engine.

STARTER MOTOR:

- The best starter for this application is a DELCO P/N 93973 from a 1988-89 S10 with a 4.3L V6. It works with the recommended 14" 168 tooth flywheel with no clearance problems and is very durable. The 4 cylinder will not work with this application and must be replaced.

FUEL PUMP:

- It is much easier to use an electric fuel pump than trying to fit a mechanical pump into an area that would require frame modifications. Aftermarket electric fuel pumps are available at your local speed shop or auto parts store and will have a PSI rating of 5 to 7 pounds.
- If the truck was originally equipped with electronic fuel injection, it has a high-pressure fuel pump mounted in the fuel tank. These pumps are not compatible with a carbureted engine. The pump must be removed or regulated to a pressure of 5 to 7 pounds. Use a Holley fuel pressure regulator (P/N 12-803) for these applications.
- If a Chevy TPI V8 engine is used, it will require a high-pressure fuel pump, along with the appropriate return line. The fuel supply should be 3/8" in diameter, the return line should be 5/16" in diameter. If a charcoal canister is being used, then a 1/4" line is also required. Make sure all fuel lines are properly secured to the frame using rubber cushioning.

FAN:

- On most installations, the conventional cooling fan cannot be used without major modifications. The recommendation here is to use two 10" or 12" electric fans mounted on the front side of the radiator. The use of a Flex-A-Lite model 20 fan would be best , but will require trimming and special mounting brackets.

FUEL PUMP:

- If the V8 has a HEI distributor, the stock S10/S15 wiring harness will plug right into the distributor. If a point-type distributor is used, a new coil and resistor will be required to rewire the ignition system.
- If a Chevy TPI V8 engine is used, it requires a computer-control wiring harness, we recommend that you contact the following companies for a new wiring harness that can be used with your S10/S15 truck.

HOWELL ENGINE DEVELOPMENTS
6201 Industrial Way – Marine City, MI – 48039
Phone: 810-765-5100 Fax: 810-765-1503

STREET PERFORMANCE
streetperformane.com

TRANSMISSION COLUMN SHAFT:

- In order to retain the original automatic transmission column shifter, some slight modifications to the control lever will be necessary. The lever will need to be bent back closer to the firewall and the linkage will need to be adjusted.

STEERING COLUMN SHAFT:

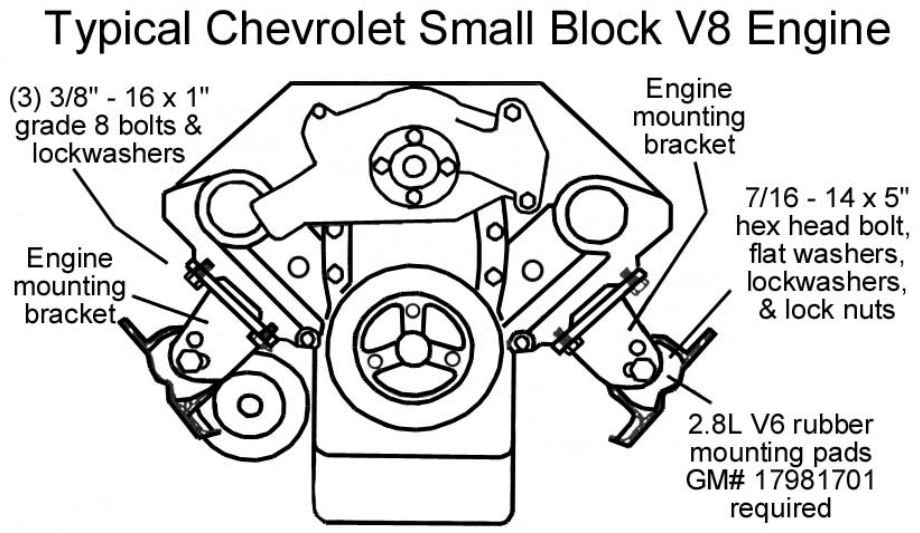
- On most installations, the conventional cooling fan cannot be used without major modifications. The recommendation here is to use two 10" or 12" electric fans mounted on the front side of the radiator. The use of a Flex-A-Lite model 20 fan would be best, but will require trimming and special mounting brackets.

ENGINE MOUNTS:

- These engine mount brackets are designed to be used with the original 2.8L V6 rubber engine supports. The original V6 rubbers that are bolted to the chassis must remain in their original position for use with the new V8 engine. If the S10/S15 was originally equipped with a 4 cylinder engine, the 2.8L V6 rubbers must be used and installed in the proper location on the chassis. 1985-93 S10/S15s have tapped holes that make the installation very easy. On vehicles that do not have tapped holes, the rubbers have to be installed from the bottom side of the chassis. This will require disassembly of the "A-arm" assembly and will take approximately 6 hours. An alternative would be to simply cut a small access hole on the back side of the crossmember that will provide clearance for both a wrench and nut to secure the mounts in the proper location.

FIREWALL CLEARANCE:

- The S10/S15 firewall and floor pan area is very narrow and will need some modifications. A three pound sledge hammer works well to provide additional clearance. The body seam between the floor pan and the firewall is the main area of concern for clearance. The best method is to bend the seam over.
- Additional clearance may be needed near the bottom corners, where the firewall and floor pan join. The previously mentioned transmission case modification will minimize this step
- If a large cap HEI distributor is used, and additional 1/2" of clearance may be needed.
- Stock cast iron exhaust manifolds will require additional clearance on the driver's side near the throttle entry area and some on the passenger's side.



LIMITATION OF LIABILITY – DISCLAIMER:

The regulation of emissions production, noise levels, and safety standards is undertaken by the federal government, each of the fifty state legislatures, and by many local municipalities, towns, and counties.

FLOWTECH makes no warranties of merchantability, of fitness for particular purpose, or that its products are approved for general use, or that its products are approved for general use, or that its products comply with laws, regulations, or ordinances in the state where they may be sold to the ultimate purchaser, the consumer.

Unless expressly stated to the contrary in the catalog, instruction sheet; or price list, the entire risk as to the conformity of any company product in any such state and as to repair should the product prove to be defective or non-conforming, is on the retail purchaser, the buyer, the ultimate consumer, of such product and it is not upon the seller, distributor, or manufacturer.

In this connection, the retail purchaser, the buyer, the ultimate consumer assumes the burden of the entire cost of any and all necessary service, alterations, or repair.

THE FOREGOING STATEMENT LIMITS THE LIABILITY OF THE MANUFACTURER.

California vehicle code, sections 27156 AND 38391, prohibit the advertising, offering for sale, or installation of any device, which modifies a vehicle's emission control system, unless exempted, unless otherwise noted. FLOWTECH Headers have not received an exemption from these code sections and are to legal for sale or use in California on vehicles originally equipped with catalytic converters, it is illegal, except for racing vehicles, which may never be driven upon a highway. To remove or otherwise render inoperative any emission control device on the regulated motor vehicles – check catalog listings to ensure proper application in the other 49 states, unless otherwise noted, FLOWTECH Headers are not legal for pollution-controlled motor vehicles, except for racing vehicles, which may never be used upon a highway and are not intended or applicable for highway use.

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