



Installation guide for Muscle Rods LS Conversion Intake Manifold kit



The Muscle Rods Conversion Intake Manifold Kits are available for two of the three GM OE LS cylinder head types, LS1/2/6 (cathedral port) and LS3 (square port). These intake manifolds are designed to work with OE or aftermarket cylinder heads as long as the head is configured with the intake flange bolt pattern and intake port opening locations matching the appropriate OE application.

NOTICE-These manifolds are not designed for use with emissions control devices. They are not legal for sale or use on motor vehicles with pollution-controlled equipment.

Intake Manifold Kit Contents:

- Fabricated aluminum intake manifold
- Port seals, throttle body gaskets and throttle body o-ring
- Billet aluminum fuel rails with -8 AN ports
- Fuel rail brackets and hardware
- (4 qty) -8 AN to -6 AN adapter fittings
- -8 AN port plug (to be used in applications that do not use a return fuel line from the engine)
- -6 AN crossover hose with 90 degree fittings installed
- 92 mm cable-type throttle body
- Throttle cable bracket
- Throttle cable

1. Test fit the manifold to the engine without the port seals installed in the manifold checking bolt hole alignment. Firmly press intake manifold down to ensure it is seated completely in the valley.

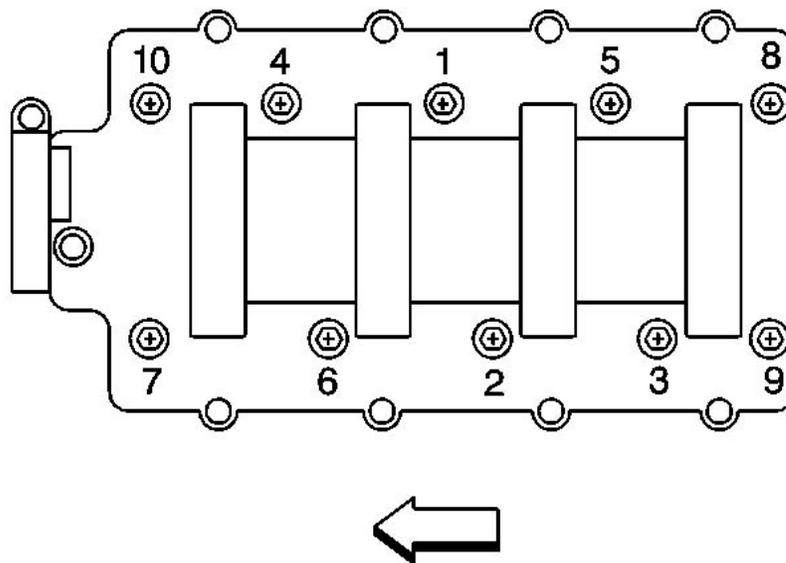
NOTE-Milled heads can effect the fitment of the manifold, these manifolds are designed to be used heads with factory dimensions. If your heads are milled you might need to elongate the mounting holes, the bolts should thread easily into the cylinder heads without any resistance.

2. Remove the intake manifold and install the fitting for the power brake hose in the large port on the bottom of the intake manifold plenum. Connect the hose to the fitting and leave the hose off the power brake booster until the intake manifold is installed on the engine. Do not forget to connect it later!

3. To connect your original Manifold Absolute Pressure (MAP) sensor to the new intake manifold you will need to remove the orange silicone seal from the nipple on the MAP sensor and slip a small piece of 1/4" fuel hose from the MAP sensor to a fitting in one of the small ports on the bottom of the intake manifold plenum.



4. Install plugs (1/8" NPT) in any un-used ports on the bottom of the intake manifold plenum.
5. Install the port seals in the intake manifold.
6. Install the supplied bolts and washers to bolt the intake manifold to the engine. Make sure you install a small amount of anti-sieze lubricant to the threads on the bolts. Make sure you do not cross thread any of the bolts and they go in without any resistance. The bolts will be tightened in two steps following the sequence below. The first pass you will torque the bolts to 44 inch/pounds and the second pass will be 89 inch/pounds.



7. Before you install your Muscle Rods 92mm throttle body you will want to transfer your original Throttle Position Sensor (TPS) and Idle Air Control (IAC) valve from your original throttle body to the new throttle body.

NOTE-If you are converting from an electronic throttle body you will need to get the appropriate TPS sensor and IAC valve

- TPS Sensor GM Part #17123852
- IAC Valve GM Part #17113391

8. Install the throttle body on the intake manifold using the supplied hardware, sandwich the throttle cable bracket between the throttle body and intake manifold with a gasket on both sides. Tighten bolts to 89 inch/pounds.

9. Place a small amount of silicone lubricant on both o-rings on the injectors. Install the injectors in the intake manifold with the wiring plugs facing out. Install the fuel rails on the injectors by pushing down firmly on the rails until all the injectors are seated in the fuel rail.

10. Install the L shaped brackets to the fuel rail and the intake manifold. Once all the bolts are in and snugged down tighten the bolts to 89 inch/pounds.

NOTE-Some injectors will be a different length and require a spacer in between the L shaped bracket and the intake manifold. (this part is not supplied, but a spacer can be found at your local hardware store. A spacer with the correct length with a inside diameter of $\frac{1}{4}$ " (6mm) is needed)

11. Plumb your fuel supply (and return in some applications) lines from the fuel pump.

NOTE-If using the truck accessory drive you will want to plug the front of the fuel rail on the drivers side of the engine. To do this you will need to run a returnless fuel system. The line from the filter/regulator will connect to the front of the passenger fuel rail, then crossover the back of the engine.

12. Make sure you check for leaks when you first pressurize the fuel system.

13. Run the throttle cable from the pedal to the throttle cable bracket. Cut the cable to length and install the ferrule on the end of the cable so that it can be connected to the throttle body.