**Instructions for 10611 Fuel Rail Kit**

This kit is for 1997-'98 LS1 or LS6 GM engines that utilize a return line to the fuel tank.

Note: If your fuel rail does not have two fuel lines running to it, this is the wrong kit.

Kit #10611 - Fits 1997-'98 GM LS1/LS6 utilizing a return line to the fuel tank.

NOTE: Check the drawing and bill of materials on the back side of these instructions to make sure you have all the parts listed. This kit is supplied with an adjustable fuel pressure regulator (#5). We supply fittings to connect to the stock GM inlet and return line (#13 and #12). If you are pluming your own lines, we recommend a -6 inlet fitting for most low to medium performance street applications up to about 450 hp and the -8 for more powerful engines. We supply optional -6AN fitting (#11) for the return and an optional -8AN inlet fitting (#6). (Use of -8 inlet will require a larger -8 hose from the regulator to the rail.) This kit is designed for the regulator to be mounted on the firewall or inner fender panel. We supply a 16' length of -6AN hose (#18) and you can cut it to the desired length and install the reusable hose ends. If you need a long length of hose, you will have to purchase it from your performance retailer. We recommend Professional Products Powerflow Hose and hose ends or Aeroquip Hose and hose ends.

**Removal of Existing Fuel Rails** (If applicable)
1. Disconnect the ground connection to your vehicle's battery. This is a safety precaution. Allow engine to cool before proceeding.
2. Your stock fuel rails will have a valve on them that looks like a tire valve. This will usually be at the front end of one rail and will have a black plastic cap on it. Remove the cap. If you press on the core of the valve, it will release the pressure in the fuel rails. Caution! Fuel will spray out and you should have a towel or other absorbent cloth to catch any fuel that is released. Bleed system until flow stops. Wipe up any spills that may occur.
3. Remove any bolts or screws that hold the rails to the engine. New stainless screws are provided in the kit for reattaching our rails.
4. Remove fuel inlet and return line from the rails. A special tool available at most auto parts stores is required to remove the fuel lines.
5. Detach electrical connections from each injector. Disconnect anything attached to fuel rails. Remove the fuel rail assembly. Each injector has an o-ring on each end of it. End one fits tightly into the rail and the other end fits tightly into the manifold. When you lift off on the rails, it may pull off of the injectors or it may bring some of them with it. If so, be careful that they do not drop out and become damaged. Handle injectors with care.
6. Inspect the o-rings on the injectors. If you see any deterioration or cuts or slices, they must be replaced. It’s not a bad idea to replace them in any event if the vehicle is not in use.

**Installation of Fuel Rail Kit**
1. Lubricate O-rings on both ends of injectors with a light oil or WD-40 or equivalent.
2. Carefully push injectors into manifold. Do not cock them sideways when you do this or you can damage the O-ring.
3. Install all necessary fittings into fuel rails. Clamp rails in a vise with special jaws to protect finish. Follow these instructions for installing fittings.
4. Determine which end of which rail you want to mount the fuel pressure regulator connection. This will usually be the rear of the driver’s side rail. Thread the blue 90° 3/8-NPT to -6 fitting (#15) into selected rail. Do not use Teflon tape as it can shred and get into the fuel system, clogging the injectors. Use a special sealant for pipe threads available in any hardware store, such as Loctite #569. Please carefully follow these steps when installing any fitting into any of the fuel rail parts. Thread fitting (with pipe sealer on threads) into rail. Tighten it with a wrench until it stops. Then back it out about a half a turn. Then retighten it. Each time you do this, it will go in a little further. Keep doing this until it is securely tight and in the desired position. Do not over tighten as the rail may split.
5. Depending on which end of the rails you plan to use the crossover hose, thread the supplied 3/8-NPT to -6AN adapter fittings (#11) into either the front or rear of the rails. Follow same procedure outlined in step 4.
6. Thread the 3/8-NPT to 1/8-NPT reducer (#7) into an unused port on a rail. Then thread the supplied 1/8-NPT pipe plug (#8) into the reducer. If you want to utilize a factory style fuel pressure bleeder valve, you can get one from a Ford dealer and thread it into the reducer instead of the pipe plug. The Ford part number for the valve is E0AY-9H321-A.
7. Attach stainless steel brackets (#2) to manifold with M6 x 15 S/S screws, flat washers and lockwashers. (#16, #4, #9) Snug screws down but do not tighten. Leave screws loose enough to allow brackets to be moved. **Note:**

The long leg of the bracket with the long slot in it goes down against the manifold. This is very important. If you put the bracket on backwards, the rails may leak.
8. Position each fuel rail over the injectors and with lubrication on the injector O-rings, carefully but firmly push rails down until you feel them seat.
9. Align top end of mounting brackets (#2) with holes in rails. Move brackets until holes line up. You may have to firmly push down on rails to achieve alignment. Thread supplied M6 x 30 screws (#3) through rails and through brackets. Put flat washers, lockwashers and nuts (#4, #9, #10) onto screws. Holding rails down onto injectors with your hand, tighten screws into manifold and then tighten nuts on screws through rails and brackets.
10. Attach crossover hose assembly (#14) to the two fittings at the end of the rails.
11. Thread inlet and return fittings into the regulator. The return goes into the bottom of the regulator. Either of the ports on the side can be an inlet or an outlet. Tighten fittings securely. Be sure to use sealant on the threads.
12. Locate a mounting position for the regulator and bolt it in position using the supplied bracket or fabricate your own custom bracket. Attach the fuel hose assembly (#18, #17) to the regulator and to inlet fitting (#15).

**Final Steps of Installation**
13. Go over entire system and check that every single connection is tight.
14. Reconnect battery.
15. Turn on ignition so that electric fuel pump begins pumping but do not start car. Recheck all connections for any leaks. This includes where injectors go into fuel rails. If leaks occur, turn off ignition. Correct any problems. Wipe up any gas puddles.
16. Repeat step 15, again carefully checking for any leaks.
17. Once you are confident that no leaks occur, start engine and check for leaks again with engine running. Check where injectors seat into manifold. Again, if you see any leaks, immediately stop engine and fix the problem.
18. It is a good idea to check your system on a regular basis to make sure that no leaks develop, especially in the first few days you drive the vehicle. Gasoline leaks can turn into a very dangerous and expensive proposition.

**Special Instructions for Fuel Pressure Regulators**

Special Instructions for Fuel Pressure Regulators: The regulators used in these fuel rail kits are factory pre-set for 40 PSI of fuel pressure. We suggest you check the pressure with a fuel pressure gauge. **Pressure adjustments must always be made with the engine idling.**

Turn the top adjustment stud clockwise for more pressure, counter-clockwise for less. Tighten lock nut once desired pressure is obtained. Typically pressure should be set in the 40 to 50 PSI range for EFI equipped engines depending upon the application. Check specifications for your specific system. The 3/8-NPT port on the bottom of the regulator is the bypass or return line. Either of the two 3/8-NPT ports on the sides of the regulator can be used as inlet or outlet. The 1/8-NPT port in the side is for a fuel pressure gauge. You can use a Professional Products #11113 (or equivalent) which will thread directly into this port.

Special Note on Alternate Mounting/Plumbing System: See our website at www.professional-products.com. Go to the Fuel Rail section and look for a link called ‘Alternate Regulator Mounting’ for a diagram showing another way you can plumb your fuel inlet, return, and regulator location.

If your current fuel rail does not look like this with two fuel line connections, then this is not the right kit for your engine. If you have an LS1/LS6 with one fuel line connection, use our Fuel Rail Kit #10612.