



AEROMOTIVE
Part # 14142
LS7 Fuel Rails
INSTALLATION INSTRUCTIONS

CAUTION:

Installation of this product requires detailed knowledge of automotive systems and repair procedures. We recommend that this installation be carried out by a qualified automotive technician.

Installation of this product requires handling of gasoline. Ensure you are working in a well ventilated area with an approved fire extinguisher nearby. Extinguish all open flames, prohibit smoking and eliminate all sources of ignition in the area of the vehicle before proceeding with the installation.

When installing this product, wear eye goggles and other safety apparel as needed to protect yourself from debris and sprayed gasoline.

WARNING!

The fuel system is under pressure. Do not open the fuel system until the pressure has been relieved. Refer to the appropriate vehicle service manual for the procedure and precautions for relieving the fuel system pressure.

The enclosed Aeromotive fuel rails utilize o-ring sealed AN-08 style ports; these ports are **NOT PIPE THREAD** and utilize **NO THREAD SEALANT**. To use the enclosed fuel rails in your vehicle's fuel system you must install the necessary adapter fittings and o-rings, high pressure fuel lines and regulator to adapt your system to the configuration and ports of these fuel rails. Please call for a catalog of the complete line of quality Aeromotive products.

The enclosed Aeromotive fuel rails are intended to be installed on an unmodified OEM intake manifold of the identified application. Aeromotive cannot guarantee the proper fitment on aftermarket intake manifolds and the end user is responsible for verifying proper fitment and assumes all liability.

When installing o-rings it is important to place a small amount of light oil on both the o-ring and the mating surface to ease installation and prevent damaging the o-ring.

The following installation instructions are for a typical installation, for specific year and model installation instructions please refer to your vehicles service manual.

Aeromotive system components are not legal for sale or use on emission controlled motor vehicles.

This kit contains the following parts:

2ea 14142 GM LS7 Fuel Rails

4ea EV6 Injector Conversion Brackets

8ea EV6 Injector Adapter O-rings

The following steps are typical of most installations:

1. Once the engine has been allowed to cool, disconnect the negative battery cable and relieve fuel system pressure, referring to the appropriate vehicle service manual for the procedure on doing so.
2. Check for any dirt or debris around the fuel injectors. If any is evident, wash it off with some solvent parts cleaner or wipe it off with a clean shop towel.
3. Disconnect the electrical connector at each injector, making note of the location of each.
4. Disconnect the supply fuel line from the OEM fuel rails, referring to the appropriate vehicle service manual for the necessary tools and procedure on doing so. Place clean shop towels around the open fuel lines to catch any gasoline that may drip out and to prevent any dirt from entering the fuel lines.

Failure to satisfy all safety considerations will result in fire, explosion, injury and/or loss of life to yourself and/or others.

5. Label and disconnect any vacuum or dry sump lines that will interfere with the fuel rail removal and installation.
6. Remove the 4 mounting bolts that attach the OEM fuel rail to the intake manifold.
7. Place clean shop towels around the injectors to catch any gasoline that may be spilled during their removal. Remove the injectors from the manifold by gently pulling upward on the fuel rail / injector assembly. Keep all injectors connected to the fuel rails. If an injector does pull out of the fuel rail, it may spill a large amount of gasoline.

Failure to satisfy all safety considerations will result in fire, explosion, injury and/or loss of life to yourself and/or others.

8. Carefully remove the fuel injectors from the OEM fuel rail by removing the factory retaining clips.
9. Remove the old o-rings from the fuel injectors, inspect the injectors for any dirt or debris and clean if needed. It is suggested that the old o-rings be replaced, contact your local parts store or dealer to purchase the correct replacement o-rings.

10. If you are replacing the factory injectors with the older style EV6 injectors install the supplied adapter o-rings on the bottom or intake manifold side of the fuel injector, the top o-ring remains the same. Replace the mounting brackets installed on the Aeromotive fuel rails with the taller set supplied with the fuel rails.

11. Coat the new fuel injector o-rings with a light oil to ease installation.

12. Carefully install the new injector o-rings on the injectors.

When installing o-rings it is important to place a small amount of light oil on both the o-ring and the mating surface to ease installation and prevent damaging the o-ring.

13. Install the appropriate union fittings and o-rings in each end of the fuel rail, we recommend Aeromotive p/n 15605 for AN-06 connections or Aeromotive 15607 for AN-08 connections.

14. Place a thin coat of light oil in the fuel rail injector bores and in the lower intake manifold injector bores to help prevent cutting the o-rings during installation.

15. Carefully place each of the fuel injectors in the corresponding fuel injector bore of the Aeromotive fuel rails.

16. Place each of the fuel rail / injector assemblies onto the lower intake manifold, ease the fuel injectors into the injector bores in the lower intake being careful that the injector does not dislodge itself from the fuel rail.

The rear of the fuel rails may contact a small bracket attached to the back lower intake. This bracket may require modification for clearance or removal.

17. Reinstall the fuel rail mounting bolts and tighten.

18. With the Aeromotive fuel rail properly secured to the intake manifold, Move the fuel injector vertically downward until it bottoms out on the intake manifold, In this downward position, inspect the upper fuel injector o-ring (on the fuel rail side) and insure it is fully covered by the fuel rail injector bore. If any of the o-ring is exposed, loosen the fuel rail bracket screws and adjust the installation height until the o-ring is no longer exposed and retighten the bracket screws. In the situation where the fuel injector has no vertical travel, either the fuel rail brackets can be adjusted or the brackets shimmed until the fuel injector fits freely. Do not pressurize the fuel rail until the proper fuel rail installation height is achieved.

19. Plumb the remainder of the fuel system with high pressure AN fuel lines and fittings. Aeromotive recommends an after-market fuel pressure regulator such as Aeromotive p/n 13101 or 13109 (If you are converting the fuel system to a return style system).

Figure 1-1 depicts a fuel rail with only one fuel line connection, such as is commonly found on OEM factory fuel rails in late model “returnless” fuel systems beginning in 1999. Positioning the regulator after the fuel rail is optimum for performance applications, however an Aeromotive return style regulator may be configured for a “returnless” type of engine/fuel rail assembly by flowing into one of the regulator side ports from the pump and out of the opposite side port into the fuel rail. A Quick Connect to AN adapter may be required for the fuel rail connection, and a return line must be routed from from the regulator bottom/return port back to the top of the fuel tank.

Examples of return style fuel system plumbing

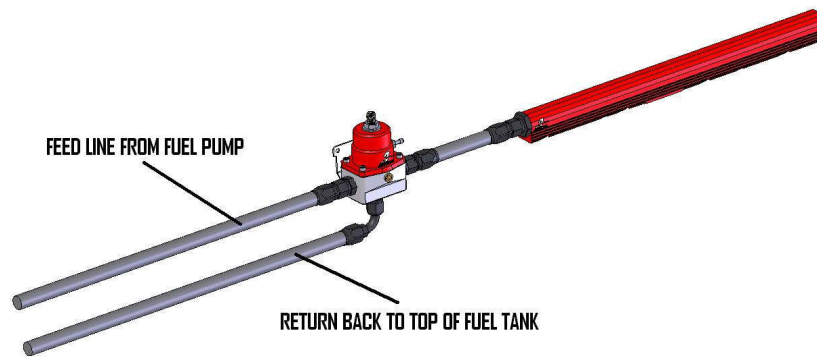


FIGURE 1-1

Figure 1-2 shows the optimum fuel rail plumbing for performanc V8 engines with duel fuel rails, including a Y-block to feed the fuel rails and the return style regulator located in the cross-over on the other end, with return line.

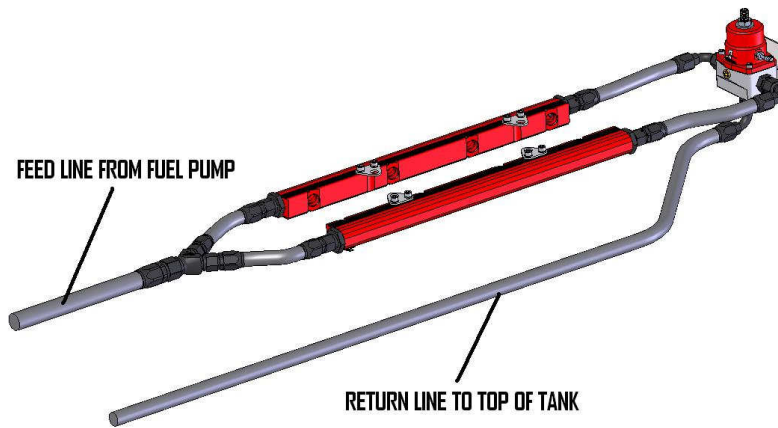


FIGURE 1-2

Example of “returnless” fuel system plumbing

Figure 1-3 shows plumbing for a typical “returnless” system where the OEM fuel pump and regulator assembly are located in the tank.



FIGURE 1-3

20. Reinstall any vacuum or dry sump lines that were removed for the original fuel rail removal. The dry sump line on the front of the passenger or right side of the vehicle may need heated and formed to clear the Aeromotive fuel rails. Take caution when heating and forming this line as it may contain residue oil.
21. Reconnect the battery and turn the ignition to the ON position WITHOUT starting the car. After several seconds turn the ignition key to the OFF position, wait one minute. Repeat this process until you pressurize the fuel system.
22. With fuel pressure in the system, check for leaks from and around all the fuel system components and all fuel lines and connections. If any fuel leaks are found, turn the ignition key to the OFF position, remove any spilled gasoline and repair the leak before proceeding.
23. Once the fuel system has been confirmed to be leak free, test drive the vehicle to insure proper operation and re-check the fuel system for leaks. If any leaks are found, immediately shutoff the engine and repair the leak(s).