

Inline Frame Mount Fuel Pump Kit (#40005) Installation Instructions

The Inline Fuel Pump Kit can be used in conjunction with any EFI system. These instructions are focused on pairing it with a FiTech EFI System but the instructions can easily be adapted to suit any other EFI system that is being utilized.

The FiTech Inline Fuel Pump Fuel Delivery Kit is an inexpensive solution for a fuel delivery system. This style of fuel delivery when used with a FiTech Go System EFI does require a return line to the fuel tank. All necessary hose, hose ends, and fittings are supplied.

The most critical aspect of this installation is making sure that the fuel pump and the filter between the pump and the tank are mounted as low as possible. Ideally the pump should be at least as low as the bottom of the tank. These pumps are engineered to push fuel, not draw it in from the tank. Even though the pickup from the tank may be higher

than the pump, once this line is primed it will function satisfactorily. Note that mounting the pump too high will contribute to premature failure. Please read the complete instruction manual so you have a good oversight of the installation.

The Inline Fuel Pump Fuel Delivery Kit is capable of providing enough fuel for engines producing up to 600 HP when used with either the 4-injector FiTech EFI systems or also when used with the 8-injector units. Note that these systems are still suitable to be used on engines that are making as little as 200 HP.

40005 Kit Contents

- 5' of -08 EFI Fuel Hose - Push Lock
- 20' of -06 EFI Fuel Hose - Push Lock
- (1) 100 Micron Inline Fuel Filter
- (1) 30 Micron Inline Fuel Filter
- (1) 255 L/PH Inline EFI Fuel Pump
- (1) Billet Pump Mounting Bracket
- (1) -08 x M22 Fitting for Fuel Pump
- (1) -06 x 9/16-24 Fitting for Fuel Pump
- (3) -06 AN Straight Hose Ends (Push Lock)
- (3) -08 AN Straight Hose Ends (Push Lock)
- (2) -06 AN 45° Hose End (Push Lock)
- (4) #10 Self Tapping Metal Screws

Plumbing Layout for External Frame Mount Inline Pump Fuel Delivery Kit #40005

Note that the FiTech EFI Throttle Body has three fuel inlet ports that can be used. Two additional ports are marked "A" below. Any unused port should have a plug installed.

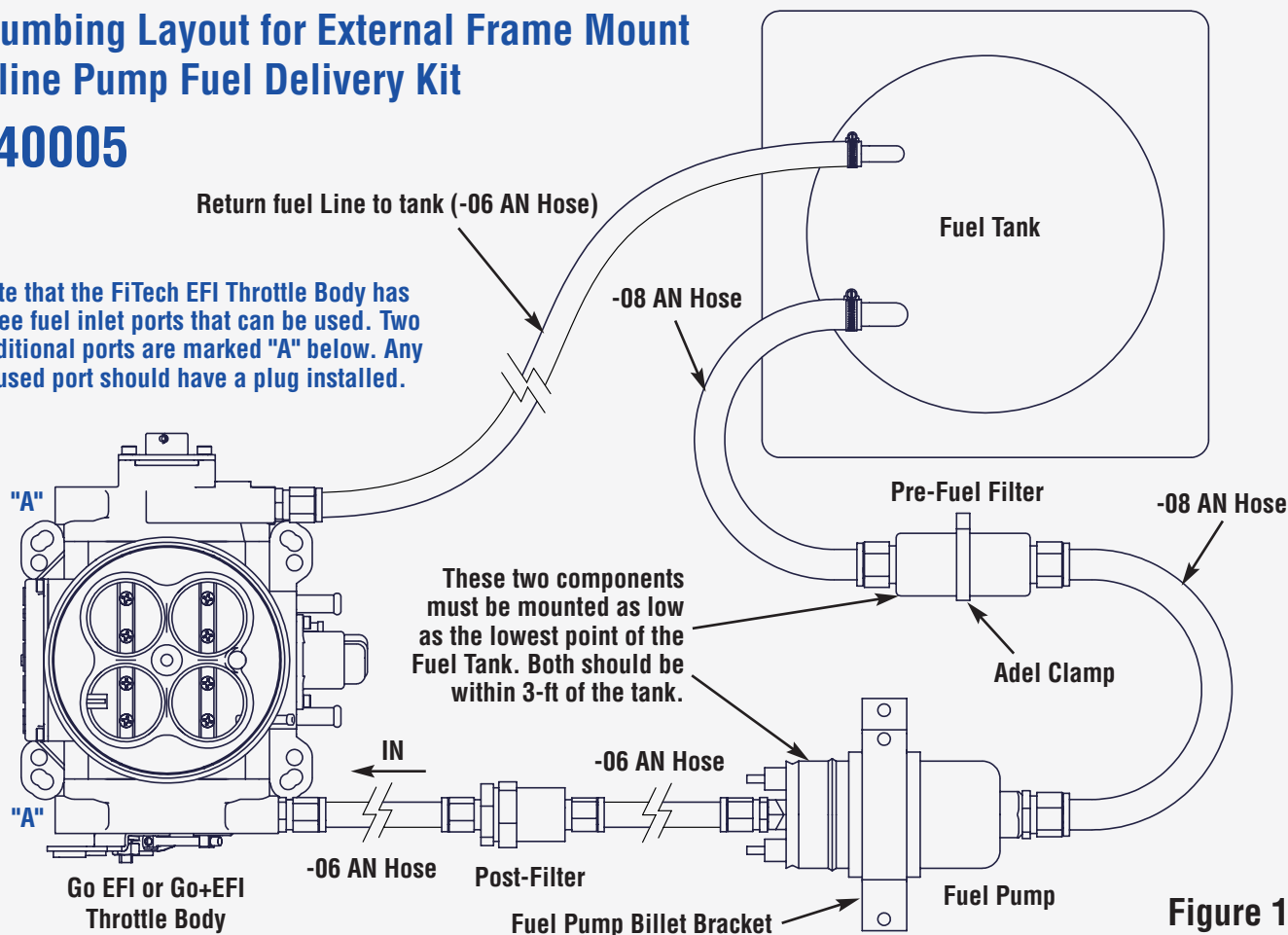


Figure 1

Installation of the Fuel Delivery System

The installation of fuel related components should be done in a well ventilated area free of any possible fire hazards. Gasoline fumes are toxic and highly inflammable.

1. Disconnect the negative (-) terminal of the battery.
2. Release the pressure in the fuel system by removing the gas cap.
3. Remove the stock fuel lines from the factory fuel pump and remove the pump from the engine. Clean off the block's mounting surface and install a fuel pump block-off plate (not supplied). Make sure you acquire a block off plate for your specific engine.
4. If a low pressure electric pump is being used you may already have a pump block-off plate. Remove all of the electric pump components.
5. Disconnect the factory hard line (or hose) from the tank's sending unit assembly. Note that the factory hard lines can be completely removed if not used for the return line. If not removing or using as a return line, cap the ends of the factory hard line to avoid contamination entering the tank.
6. For proper operation of the EFI system, a return line provision must be installed onto the fuel tank sending unit. You have several options for doing this.

Note: Some vehicles already have a return line which may be used. Other methods require welding on the tank. It is recommended that any welding be performed by a qualified professional. Here are your various options:

A. Using the supplied rubber -06 hose:

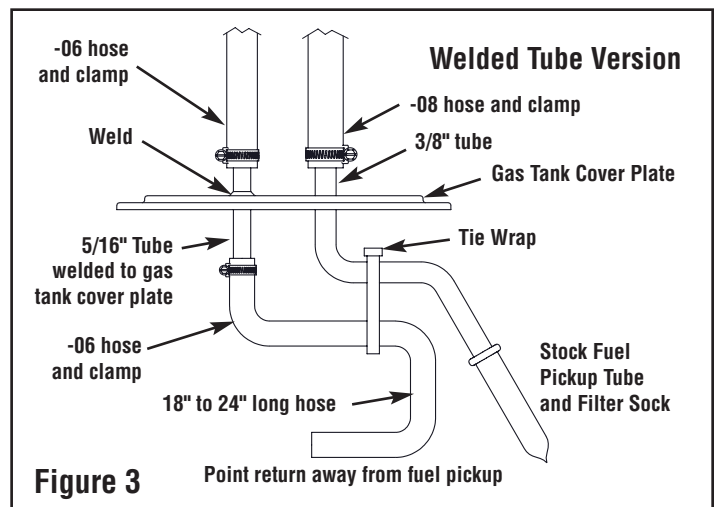
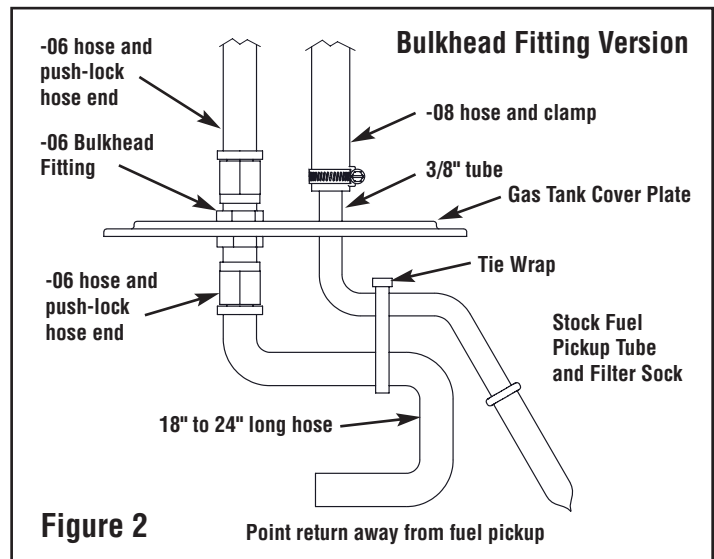
- A1. Weld in a 5/16" hard line inlet onto the sending unit cover plate (see Figure 2), or...
- A2. Install a -06 AN bulkhead fitting onto the sending unit cover plate (see Figure 3), or...
- A3. Install a Moroso #65385 Return Kit in your filler neck. See Figure 4.

- B. Use the vehicle's existing fuel hard line as the fuel return line with modification to the sending unit and pickup.
- C. Use the vehicle's existing fuel return line (if equipped) as the fuel return line.

Note: Regardless of which of the above systems you use for a return line, it is important to locate the in-tank return line as far as possible from the fuel pickup line. This will avoid drawing aerated return fuel into the inlet line fuel pickup.

Fuel Inlet Line

Fitech recommends using a -08 inlet line from the tank to the pump. From the pump to the engine a -06 line is suitable. The -08 line is necessary to avoid fuel starvation to the pump which can damage the pump. The hose and hose ends supplied in this kit are configured for a -08 line



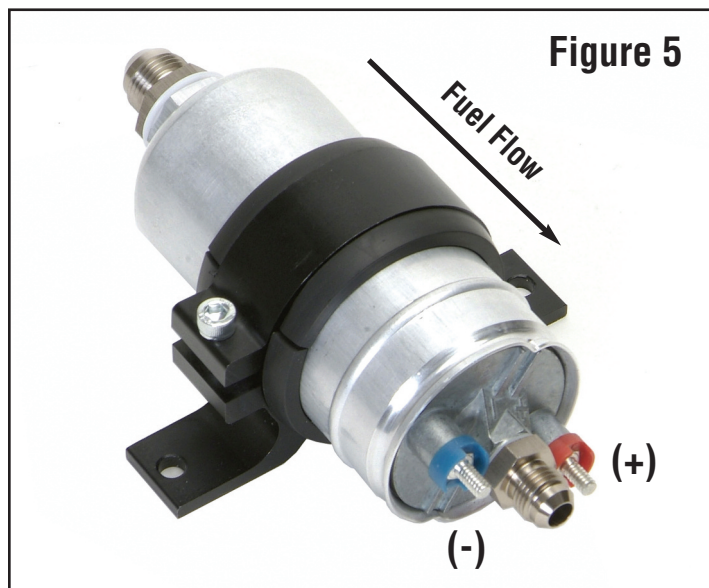
from the tank to the pump. If you elect to use -06 line (not recommended) you will not have enough hose ends.

Using a -08 line from the tank may require installing a larger pickup in the tank. Some stock tanks have a 5/16" diameter fuel tube. This is too small. The outlet line from the tank should be a minimum of 3/8" in diameter and 1/2" is better. The -08 supplied fuel hose will work on either a 3/8" or 1/2" tube. If your current tank has a 5/16" fuel line coming from the sending unit, do some online searching (search "fuel sending units") for a replacement

sending unit with a larger fuel line. Vehicles originally equipped with small block engines typically have 5/16" lines while big block engines have a 3/8" fuel line. If your model car was available with both small and big block engines there should be a 3/8" sending unit available. Note that some of these sending units have both an outlet and a return fuel line provision.

If you cannot source a sending unit with a 3/8" fuel line you will need to have one custom installed in your tank. This should be accomplished by an experienced professional who can modify your fuel tank.

Since the line from the tank to the pump is low pressure you can secure the -08 hose to the tank with a sup-



plied hose clamp. The rest of the connections are made with the supplied push lock hose ends.

Mounting and Plumbing the Fuel Pump and Pre-Filter

Select a location for mounting the pump. Be sure to provide enough space between the tank and the pump to allow for the pre-filter. The pump and filter should be mounted as low as the lowest portion of the fuel tank. They should also be mounted within three feet of the tank. This is important to avoid premature pump failure.

This kit includes a billet mounting bracket for the pump. Using the bracket as a template, mark two mounting holes on the frame (if that's where the pump will be mounted) and drill 4 MM holes for #10 self tapping metal screws. Mount the bracket to the frame with the supplied #10 self tapping metal screws.

Note that the pump is directional and must be positioned with the wire terminals facing the front of the vehicle. Slip the pump into the bracket and clamp it securely. See Figure 5.

Find a suitable location for the filter positioned between the tank and the pump. Mount the filter to the

frame using the supplied Adel clamp. Again, drill a 4MM hole and use a #10 self tapping screw to hold the clamp.

Measure out the necessary lengths of the -08 hose to run from tank to the filter and from the filter to the pump. Cut the hose cleanly using a sharp blade. Make sure the ends are cut square. Install the push lock hose ends by securing the hose end in a vise, making sure you provide some protection to avoid damaging the hose end. Do not clamp too tightly. Push the hose onto the hose end making sure it is seated all the way. It will ease installation by using some WD-40 or similar lubricant.

Connect the hose from the tank to the filter and a second hose from the filter to the pump.

Plumbing from the Pump to the EFI

The next step is to determine the lengths of the -06 hose which will run from the pump to the post-filter and then a second hose from the filter to the inlet port of the FiTech EFI system throttle body.

Note that the post-filter can be located anywhere between the pump and the throttle body. This filter is very light and can be supported by the fuel hose. No mounting clamp is required but you will need to provide some type of support for the fuel line at several points between the pump and the engine compartment. It can be tie-wrapped or held in place with small Adel clamps. (Not supplied)

The FiTech EFI Throttle Body has three inlet ports and one outlet port. The outlet port is marked "Return." Select one of the three inlet ports and install a supplied -06 AN inlet fitting. The return port requires a special fitting which is already installed in the throttle body. Install the supplied plugs in the two unused ports. You will have one plug left over. This is required when using the Fuel Command Center which is returnless and the return port is also plugged. See Figure 6.

Connect the -06 fuel hose from the filter to the inlet fitting on the throttle body.

Wiring the Fuel Pump

The FiTech ECU mounted on the throttle body has a small sub harness that is connected to it. In this sub harness is a large orange wire. Extend that wire and connect it to the positive (+) terminal on the fuel pump. Connect one end of a ground wire to the (-) terminal of the fuel pump and attach the other end to one of the screws holding the pump to the frame. Make sure the wire makes contact with bare metal.

Where is the Fuel Pressure Regulator?

You may wonder why no fuel pressure regulator is used. That's because the FiTech System throttle body contains an internal fuel pressure regulator that maintains fuel pressure into the system at a constant 58 PSI.

Note: If you are using this #40005 FiTech Fuel Delivery Kit with a fuel injection system other than FiTech, you will need to incorporate a fuel pressure regulator between the post filter and the inlet port on the throttle body, or fuel rail if it is a port injection system.

Plug all unused
fuel ports.



Figure 6

What are the two straps in the Fuel Pump Box?

These are mounting straps supplied by the fuel pump manufacturer. However FiTech supplies a special billet aluminum Pump Mounting Clamp. The two straps that are supplied in the box are not needed and may be discarded.

Completing the installation:

Once the entire installation is completed, turn on the main ignition switch which will activate the fuel pump. Immediately examine every connection checking for fuel leaks. If any leaks are detected, turn off the ignition switch and repair all leaks. It is critical that no fuel leaks exist which could lead to a fire.

Figure 6 - Left, shows the various Inlet Ports and the Return Port. **Figure 7** - Below, shows the complete 40005 Fuel Delivery Kit with all the supplied components.



Figure 7

FiTechTM
Fuel Injection

FiTech Fuel Injection
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