Warning: Caution must be observed when installing any product involving fuel system parts or gas tank modifications. Work in a well ventilated area with an approved fire extinguisher readily available. Eye protection and other safety apparel should be worn to protect against debris and sprayed gasoline. We recommend having this installation performed by an experienced, qualified, and FiTech approved automotive technician. The finished installation must be thoroughly checked for any fuel system leaks. The fuel system is under pressure, so be sure to relieve the pressure before opening the fuel system. All safety precautions must be observed when working with fuel.

Caution: Before starting this installation be sure the negative terminal is disconnected from the battery, and a fire extinguisher handy. 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 flammable. Smoking is prohibited and extinguish any open flames. Failure to comply with these warnings could result in injury and or death.

Special Note: The G-Surge Tank can be used with any EFI system, aftermarket or O.E.

The FiTech G-Surge tank is designed to prevent starving of the fuel pump by increasing the fueling capability of the system. It is typically installed in vehicles that potentially can experience fuel starvation due to fuel sloshing around in an inadequately baffled tank. While this can occur in any vehicle when the tank is not fully filled, it is more frequent in vehicles subject to violent changes in directions such as autocross, off-road, drag racing and other types of racing that involve high g-force. The G-Surge can be easily mounted under the hood and can be fed by the existing fuel system. It will maintain a 1.2 liter (1/3rd gallon) reservoir of fuel at all time to prevent starvation to the high pressure fuel pump. The G-Surge has either a single or double high volume 340 LPH fuel pump inside the module which feeds any EFI system and supplies enough fuel for 800 HP (single) or 1600 HP (dual) naturally aspirated. The Single Pump version is also available with a built-in fuel pressure regulator. It is precisely machined from billet aluminum with a fitted o-ring seal on the top cover of the module and AN -06 fittings at the top.

For technical assistance with your G-Surge Tank, call 951-340-2624 or go online to www.fitechefi.com under “tech center”.

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### Tools Required
- -06 AN wrench (11/16”)
- Miscellaneous tools to facilitate mounting

### Mounting the G-Surge Tank
1. The G-Surge Tank can be mounted vertically (as shown with fittings at the top) or horizontally. If mounted horizontally the red fitting should be at the lowest position. We recommend a vertical mounting for best performance to eliminate possible fuel starvation.
2. The G-Surge is mounted using the four slotted holes on the base flange or the four tapped M6 holes in the side of the top and bottom end caps.
3. Mount the G-Surge firmly to a stable component of the vehicle

#40007 Single Pump G-Surge

Kit Contents
- G-Surge Assembly
- Ring Terminals
- Lock Nuts
5. The following options primarily address port injection systems:

Option One: Returnless at rails fuel system:
• No return line from the fuel rails. With this system a bypass regulator is mounted between the G-Surge and the fuel rails with a return line from the regulator to the G-Surge tank.

Option Two: Return fuel system.
• For best performance on high powered engines. With this plumbing arrangement the outlet line from the G-Surge goes directly to the fuel rails and the second line from the fuel rails goes to a bypass regulator with a return line back to the G-Surge tank. This arrangement prevents any restriction to fuel flow that the regulator might create.

NOTE: These above options do not apply to the FiTech Go EFI Throttle Body systems which have a built-in fuel pressure regulator and do not require an external regulator.

Single Pump Wiring (#40007 and #40009) See Figure 5
1. The G-Surge Tank pump must be wired to a 12V source capable of providing 20 amps. NOTE: An EFI fuel pump should never be wired directly to ignition or battery toggle switch. You should use the Fuel Pump output wire supplied with the EFI system.
2. The red plus (+) terminal on the G-Surge is wired to the ECU.
3. The negative terminal (-) on the G-Surge is wired to a good ground on the vehicle’s chassis.
4. A 20 AMP inline fuse should be used along with at least 14 AWG wire for both connections (12 AWG for long runs).

Plumbing the #40009 G-Surge Tank
The G-Surge System including a fuel pressure regulator is plumbed differently than the #40007. See the Plumbing Schematic, Page 4.

Single Pump Plumbing #40007
1. There are several plumbing options on the G-Surge #40007.
2. Of the four -06AN fittings on top of the tank, the red fitting is used for high pressure outlet. This fitting connects to the the fuel injection inlet. See #40007 Plumbing Schematic on page #3.
3. After installation, if mounted at an angle, the black fitting at the highest fluid level should be plumbed as a return to the main fuel tank. This will prevent air being trapped inside the tank and allows it to escape back to the main fuel tank. If mounted vertically, use any black fitting as a fuel return fitting as these ports are interchangeable.
4. The other two ports can be used as a return port and a feed port. A return line from the fuel injection system can go to one port and the other port will be used as a low pressure feed to the G-Surge unit. See Plumbing Schematic Figure 1.

Kit Contents
(1) G-Surge Assembly
(2) Ring Terminals
(2) Lock Nuts

Dual Pump Plumbing #40008
1. The only requirement for all options is that the fuel entering the G-Surge Tank must be filtered. See “Pre-Filter” on the Plumbing Schematic on page 3, 4, and 5.
2. The dual pump set up has five -6 AN fittings on the top.
3. The two red fittings are used for the G-Surge Tank’s internal pumps high pressure outlets that will feed the engine’s fuel rails or two throttle bodies on a dual EFI setup.
4. A return line from one of the G-Surge black fittings must be plumbed back to the main fuel tank. This reduces the amount of air that can be trapped in the system.
5. After the G-Surge Tank has been mounted, determine which black fitting is receiving the highest fluid level and plumb that to the return of the main fuel tank.
6. Additionally a return line must be plumbed from the regulated return port on your EFI throttle body or if using a return style regulator, a return line must be plumbed from the regulator to the G-Surge Tank.
Wiring the Dual Pump G-Surge Tank #40008 - See Figure 6

1. The G-Surge Tank pump must be wired to a 12V source capable of providing 20 amps. NOTE: An EFI fuel pump should never be wired direct to ignition or a battery toggle switch. You should use the Fuel Pump output wire supplied with the EFI system. The G-Surge can be wired to run both pumps at the same time, or one pump can be set up as a backup. Additionally both pumps can work at the same time, or one pump can be set up as a backup. Additionally one pump can be wired to be turned on separately with a switch. See Wiring Diagram on page 6.

2. The supplied FiTech EFI harness that came with your EFI System is color coded for easy identification. The orange wire from the EFI goes to the red plus (+) terminal on the G-Surge.

3. A black ground wire (minimum 14 AWG) goes to negative terminal (-) on the G-Surge.

4. A 30 AMP inline fuse should be used along with at least 14 AWG wire for both connections (12 AWG for long runs).

5. It is highly recommended to activate the FiTech G-Surge pump with a relay that is triggered by the same signal as the primary fuel pump. (The primary pump is the existing pump that pumps fuel to the G-Surge Tank.)

Initial Start Up

1. Reconnect your battery.

2. Before starting the car ensure that the G-Surge is fully primed with fuel. This can be done by removing the positive (+) terminals off the G-Surge. NOTE: Be sure to keep the terminals away from any possible arcing. Then cycle the vehicle’s ignition power several times. This process activates the primary fuel pump a few seconds at a time. This process should be done 3-4 times to fill the G-Surge Tank. Replace the fuse and cycle the ignition for a few seconds. Check for any fuel leaks at all connections. Once no leaks are confirmed, start the engine.
**#40009 G-Surge Tank Plumbing Schematic**

With built-in 58 PSI Fuel Pressure Regulator

Outlet from G-Surge to the throttle body

Use supplied plug in the return port.

FiTech Throttle Body

See Figure 5 for wiring diagram.

**Figure 2**

**#40008 G-Surge Tank Alternative Plumbing Schematic**

See next page for additional plumbing layouts for the #40008 G-Surge.

Fuel Return Line

If system uses built-in regulator in the throttle body, this return line would come from the throttle body

Y-Block

Post Filter

EFI Bypass Style Fuel Pressure Regulator

Outlet Fuel Line to Fuel Rails or EFI Throttle Body

See Figure 6 for wiring diagram

**Figure 3**

**LEFT** - When using the #40009 G-Surge with a built-in regulator, the nipple fitting on the regulator needs to be plumbed to a fitting on the intake manifold on boosted applications and also on any installation where the G-Surge Tank is inside the car. This is necessary even on unboosted applications with the G-Surge in the passenger compartment because in the event of regulator failure, fuel could be released into the vehicle.

**BELOW LEFT** - This plumbing plan would be suitable when utilizing the FiTech #30012 Go EFI System suitable for up to 1,200 HP. In that application you would not need the Y-Block. Note that an external fuel pressure regulator is required on all #40008 G-Surge installations. The 30012 throttle body has three fuel inlets so the outlet lines from the G-Surge could feed directly into the throttle body. The return line would be plumbed from the throttle body to the G-Surge tank. However, you would need a Post Filter in each of the two fuel lines from the G-Surge to the throttle body.

**Recommended Filters from FiTech:**

Pre-Filter - #80111
Post Filter - #80112

See the FiTech EFI website for a listing of recommended External Fuel Pressure Regulators from FiTech:

www.FiTechEFI.com
FiTech Warranty

Limited Warranty: FiTech EFI warranty is limited to repair or replacement (at our discretion) of any FiTech part that fails because of a defect in workmanship or materials.

Implied warranty: Any warranties implied by law are limited to the duration of this warranty (except in those states where prohibited by law).

How Long It Is Covered: All FiTech products are warranted for a period of one year from date of original retail purchase with an original receipt showing proof of purchase. Certain components of the EFI systems are limited to a 90 day warranty period. See separate complete Limited Warranty document for a list of specific components.

Who We Cover: All FiTech warranties apply to the original purchasing consumer.

What We Do Not Cover: Failure of a product due to misapplication, improper installation or maintenance, misuse, abuse, unauthorized repairs, accidents, or modifications to the original design. Removal or replacement costs, shipping costs, damage to related components, and costs incurred due to downtime of vehicle. Any product used in marine applications unless specifically stated for marine usage. Any parts used in racing applications or subject to excessive wear.

Warranty Service Procedure: In the event a problem develops with one of our products, contact our customer service department at 951-340-2624 or fax to 951-340-2648. It may be determined that the product will have to be returned for inspection and/or repair. A Return Merchandise Authorization (RMA) number will be assigned to you. This number must be on the box shipped back to FiTech Customer Service. The product must be returned via freight prepaid. It must be accompanied by a clear description of what the problem is with the product. If the product is determined to be defective within the warranty period, FiTech will repair, replace, or issue credit to the original consumer at our discretion. Any repaired or replaced product will be returned to the sender via prepaid Fedex or other ground carrier.

Return Policy: FiTech guarantees its parts and is confident that our products will meet with your complete satisfaction. If the product does not meet your expectations, return it within 60 days for a refund or exchange. You can return the new, unused part within 60 days from the purchase date. To make a return, call our Customer Service Dept. at 951-340-2624 to receive a Return Merchandise Authorization (RMA) number. You must include the RMA number and a copy of the product purchase receipt with the return. The product must be sent back freight prepaid, in the original manufacturer’s box to FiTech Customer Service/ 12370 Doherty St. Suite A, Riverside, CA 92503. Returns may be subject to a 15% restocking fee. No refunds will be issued without a copy of the receipt.

This Plumbing Schematic shows how to plumb to a dual EFI throttle body system such as the FiTech Go EFI 2X4 or a pair of Fuel Rails on a port injection system. Note that the Plumbing Schematics shown here are not the only variations possible with the G-Surge Kit.
Figure 5 Wiring Diagram for 40007 and 40009

![Wiring Diagram for 40007 and 40009]

NOTES:
1. MOUNT FUSE CLOSE TO POWER SOURCE.
2. MOUNT RELAY CLOSE TO PUMPS.
3. IF MECHANICAL FEEDER PUMP IS USED, CONNECT ECU ORANGE WIRE DIRECTLY TO RELAY TERMINAL #6.
4. RELAY SHOWN IS TYPICAL OF BOSCH STYLE 12V/40A SPST RELAY.

Figure 6 Wiring Diagram for 40008

![Wiring Diagram for 40008]

NOTES:
1. MOUNT FUSE CLOSE TO POWER SOURCE.
2. MOUNT Relay close to pumps.
3. Switch is optional to turn off pump #2 fuel supply if maximum flow is not required all the time.
4. If feeder pump is mechanical, connect ECU orange wire directly to relay terminal #6.
5. Relay shown is typical of Bosch Style 12V/40A SPST relay.

California Proposition 65 Warning: This product may contain one or more substances or chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm.

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