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**Note:** These kits are not legal for use on pollution controlled vehicles

# Instruction Manual

## for the following Go EFI System

### 39001 - Go EFI 2 Barrel

This Quick Start Manual is designed to get you up and running with the Go EFI 2 Barrel Kit and either the 40003 Fuel Command Center, 40005 Inline Fuel Delivery Kit, 40007 G-Surge, or the 40019 In-Tank fuel pump. The FiTech Go EFI System is the industry's most advanced throttle body EFI system and also the easiest to install. It includes a very advanced hand-held controller but is also capable of being far more tunable than any competitive

product that utilizes a hand-held controller. Please read the full instruction manual before beginning your installation. These instructions cover the Basic Kit installation and setup as well as general instructions for both of the optional Fuel Delivery Kits. **For technical assistance with your Go EFI System, call 951-340-2624.**

**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 goggles and other safety apparel should be worn to protect against debris and sprayed gaso-

line. We recommend having this installation performed by an experienced qualified automotive technician. The finished installation must be thoroughly checked for any fuel system leaks. All safety precautions must be observed when working with fuel. **Note: Do not use solid core ignition wires.**

### 39001 Kit Contents

- (1) 4-Injector Throttle Body - Carburetor Gold finish
- (1) Harness "A" (Plug-in pigtail user harness)
- (1) ECU (Mounted on Throttle Body)
- (1) Set of four injectors (Installed on Throttle Body)
- (1) Idle Air Control (Installed on Throttle Body)
- (1) Throttle Position Sensor (Mounted on Throttle Body)
- (1) Coolant Sensor
- (1) Hand held Controller w/billet case
- (1) Wide Band O2 Sensor
- (1) O2 Sensor Bung Kit
- (1) Fuel Pressure Regulator (Installed in Throttle Body)
- (1) Gasket Kit
- (2) -06 AN Inlet/Outlet Fittings (Installed on Throttle Body)
- (1) Data Com Cable
- (1) 8 gigabyte SD Card (Installed in Controller)
- (1) 3/8-NPT Reducer
- (1) 10mm Port Plug
- (1) Instruction Booklet

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### About your FiTech Go EFI System

The Fitech Go EFI System will bolt directly to any Holley flange 2 barrel intake manifold. The Fitech Go EFI System is self-tuning once the simple initial setup is performed using the hand-held

controller. When the necessary initial inputs are made with the hand-held controller the Go EFI System creates a base fuel MAP to get the engine running. Then the self-tuning programming

will fine tune the MAP to produce optimum power and performance. Through the use of a wide band O2 sensor the system can continuously make adjustments in the fuel delivery to provide the correct air/fuel ratio under all climate and altitude conditions.

The ECU (computer) is mounted on the throttle body thus eliminating the necessity of remote mounting the ECU module and the need for an unsightly harness draped over your engine. Several sensors are also integrated to the throttle body assembly including the throttle position sensor (TPS), manifold absolute pressure (MAP), intake air temperature (IAT), and a fuel pressure sensor.

**Initial Programming:** This simple procedure is performed using the Handheld Controller. A laptop computer is not required. This unit plugs into the throttle body ECU. After a few initial inputs are made the Handheld Controller can be removed or left connected. When connected, there is a dashboard and gauges screen that will show engine parameters in real time.

**Fuel Delivery Systems:** You may have chosen one of the four optional Fuel Delivery System Kits from FiTech. Instructions come with each kit. If using other fuel delivery components you must use a 30-micron filter ahead of the fuel inlet fitting on the FiTech throttle body.

**Wide Band O2 Sensor:** This is the key component of any EFI system. Only one sensor is required. This sensor continuously monitors the exhaust gas mixture and sends the information to the ECU where adjustments are con-

### **Fuel Delivery Requirements**

FiTech offers four different fuel delivery options. One is the 40003 Fuel Command Center. When using this option, you can configure the system to operate on a returnless basis. Option two is the 40005 Frame Mount Inline External Pump. Using this pump the system must have a return line. Option number three is the G-Surge, there are three options to choose from which are the single pump G-Surge, the regulated G-Surge, and the dual pump G-Surge. The G-Surge uses your existing carbureted fuel pump and fuel lines to deliver the fuel to the G-Surge. The only plumbing required is from the Surge to the EFI.

High pressure hose and fittings are available with this kit to plumb from the G-Surge to the EFI throttle body. A 340 L/PH EFI pump is submerged in the fuel in the G-Surge sump tank. Either fuel delivery system can be used with these EFI systems. When using the Go EFI 2 Barrel EFI System and

stantly made to maintain the air/fuel targets.

**Trigger Tach Signal:** The FiTech EFI requires an rpm/trigger reference to operate. This is obtained by a connection to the negative post on a 12V coil. On HEI distributors, this connection is made to the "Tach" terminal that is indicated on the HEI distributor cap.



the Fuel Command Center, the system is suitable for engines making up to 400 HP. When combining the 39001 Go EFI 2 Barrel System with the 40005 Inline Pump, it is suitable for engines up to 400 HP.

**Note:** If you have elected to use the Fuel Command Center and your vehicle currently has a high pressure fuel injection pump, it must be replaced with a low pressure carbureted style pump. Note that vehicles equipped with factory high pressure EFI pumps are not compatible with the Fuel Command Center.

If you choose to use some other fuel delivery system other than FiTech, it is important to make sure that you confirm its compatibility with the FiTech EFI system. Contact the FiTech technical staff to check compatibility. Failure to do so can void your warranty.

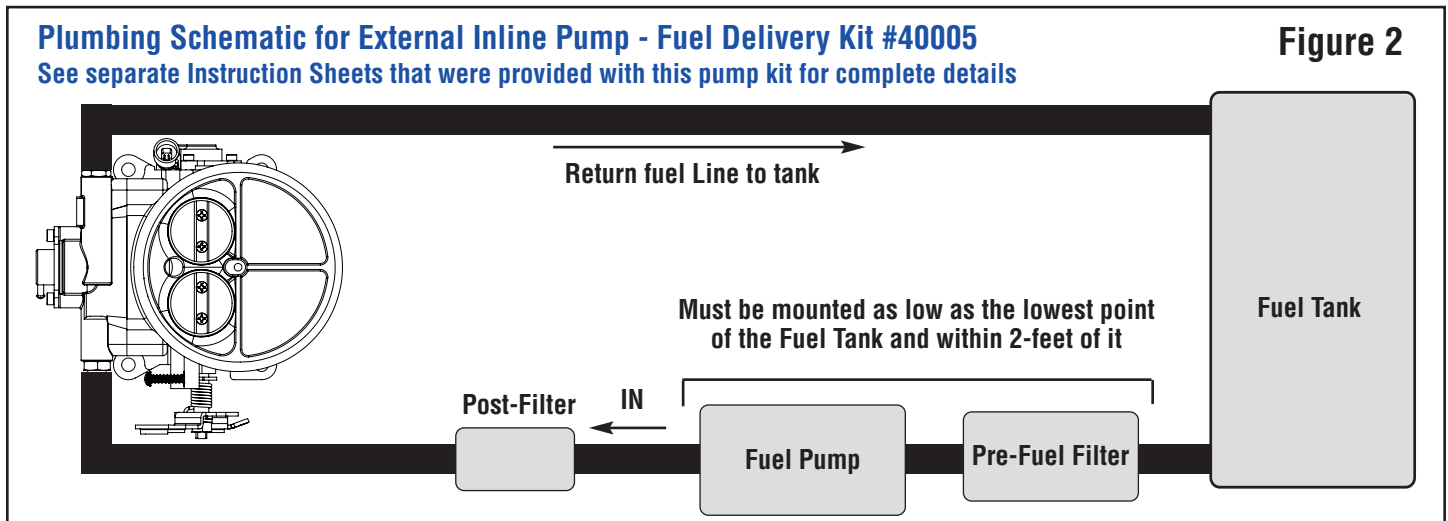
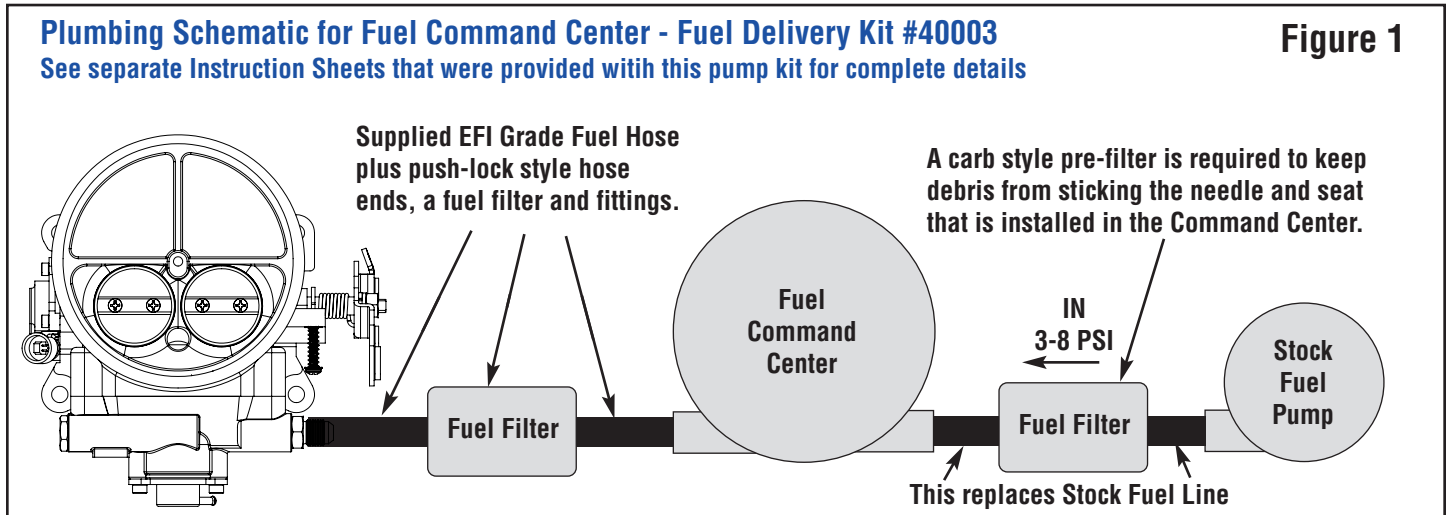
**Note the following special instructions:**

- We recommend using a G-Surge for all installations. A submerged pump is quieter and lasts longer.
- If using the Frame Mount Inline Fuel Pump, it should be mounted as close to the fuel tank as possible and also as low as possible. It should be within two to three feet of the tank. This type of pump is designed to pump, not draw, and works best when gravity fed.
- Only use hard fuel lines when using proper EFI rated flared fittings. Make sure that you remove ALL low pressure flex joints on factory fuel lines and replace them with EFI rated fuel hose and use proper flared connections and clamps. Be careful not to mix 45° and 37° AN fittings, they look similar but will not work together. 45° fittings

usually come from a hardware store or auto parts store while 37° AN fittings are the ones supplied by Fitech and most speed shops. Remember that your system will be running at **58 PSI** so consult a professional if you are not certain about this portion of your installation. Fitech does not recommend aluminum fuel lines EVER! Or you can use the supplied EFI high pressure fuel hose that is supplied in your Fuel Delivery Kit.

- Use the supplied push lock style hose ends only with the supplied hose and vice versa. Intechangable hose ends and hose with other brands could cause leaks.

**VERY IMPORTANT NOTE:** Your fuel tank must have a vent to prevent pressure building up inside the tank.



**Note:** Before starting any installation, disconnect the ground connection on the battery. Be very careful when disconnecting any fuel lines to let the fuel drain into a re-

ceptacle or a dry cloth. Do not allow raw fuel to collect on the engine as this is a fire hazard. Please observe extreme caution when working with the fuel system.

**Oxygen Sensor Installation**

The supplied O2 Sensor can be installed in either exhaust bank. The Sensor cable connects to one of the cables coming out of the ECU on the throttle body.

A. The ideal location for the sensor is 2-4 inches after the exhaust collector. It must always be at least 18-inches from the exhaust tip. Where short or open headers are utilized, install the sensor in the primary tube of the rear

cylinder. Must be at least 8-inches from the exhaust port. It will not work on "zoomie" style headers.

B. The sensor should be at least 10° above horizontal (see figure #3) to allow condensation to run off. If this is not adhered to, the sensor is susceptible to water damage.

C. Never position the sensor on the outside of a bend in the tubing.

D. The sensor must always be mounted ahead of any catalytic converter if so equipped.

E. Drill a 7/8" diameter hole in the desired location.

F. The supplied bung kit can either be welded in place or clamped onto the pipe. The clamp-on style works well and will not leak. If welded, make sure the bung is welded completely all the way around and does not leak.

G. Install the sensor into the bung. **WARNING:** Do not start the engine without the sensor cable connected to the throttle body and the EFI system is fully operational or damage will occur to the sensor.

**AIR LEAKS:** It is important that no air leaks exist anywhere in the exhaust system between the sensor and the engine. Any exhaust leaks will cause the unit to receive false readings.

## Throttle Body Installation

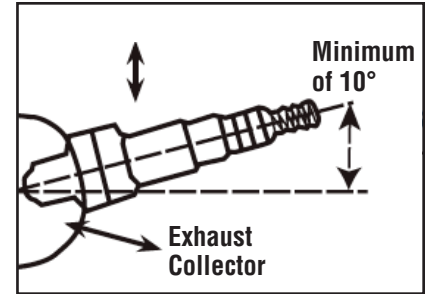
Installing the throttle body is no different than replacing the carburetor. Disconnect the throttle linkage and the fuel line. Remove the existing carburetor from the intake manifold. Clean the gasket surface of the manifold. **Vacuum Ports:** Before installing the throttle body determine the engine's need for vacuum accessories. The FiTech throttle body has five vacuum ports including ported and manifold. These ports cover accessories such as power brakes. There are three 3/16" male nipples and two 3/8" male nipple. If you need more vacuum connections than this, you can purchase vacuum tees and vacuum hose at your local auto parts store. See Figures 4, and 5 for location and use of various vacuum nipples. Place the supplied gasket onto the manifold and place the throttle body onto the gasket. The throttle body linkage must be on the driver's side of the engine. Install the original nuts and washers onto the four carburetor studs. Tighten to 16 lb. ft. of torque.

The FiTech throttle body has two fuel ports. one inlet and one return. The port without any marking is the inlet. The outlet port is marked with the word "Return." On a return-less setup the outlet port is plugged. One plug is in the kit while the return port is installed on the throttle body. The plug will be used on return-less configurations and only the port will be used when the system will have a return line.

## Coolant Temperature Sensor Installation

The Temperature Sensor should be threaded into one of the ports in the intake manifold or cylinder head. The sensor threads are 3/8-NPT. Some manifolds have 1/2-NPT ports and in this instance use supplied pipe reducer. Connect

This O2 Sensor will lead to poor engine performance, including misfires, and the inability to properly auto-tune the EFI. Continued running of the Figure 3 system with an exhaust leak can



create detonation and possible severe engine damage. Incorrect installation of the sensor, exhaust leaks, and any resulting damage is not covered by the FiTech manufacturer's warranty. Make sure your exhaust is leak-free. This is very important.

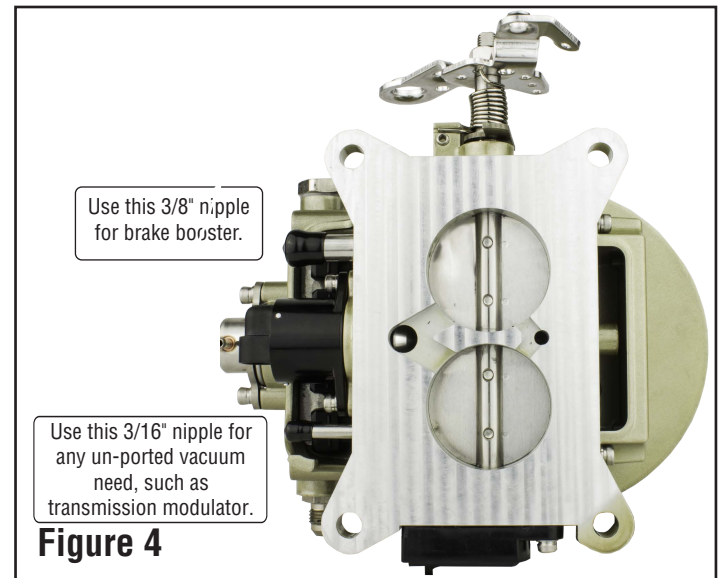


Figure 4

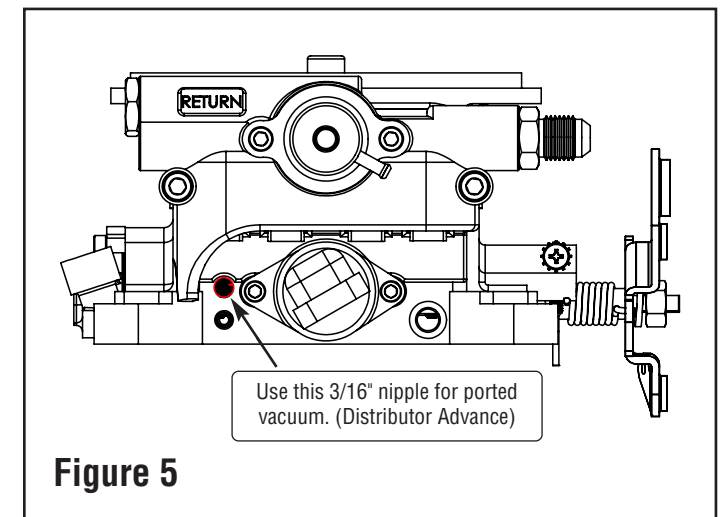


Figure 5

the yellow/black wire lead from the throttle body to the sensor. Snap the connector into the sensor. Use Teflon tape or a quality pipe sealant on both the pipe reducer (if used) and on the temperature sensor.



## Wiring the EFI System

The supplied Harness "A" (see Figure 7) plugs into mating Connector "B" from the throttle body mounted ECU. See Figure 8. The various wires will need to be extended to make required connections. See the Wire Chart on page 6 which lists each wire used in the system and what it connects to. It is strongly suggested that any wire extensions are made with the same gauge and color wire as is used in the supplied Harness. Make connections as a soldered joint rather than as a crimped connection. Utilize a shrink wrapped sleeve covering all connections.

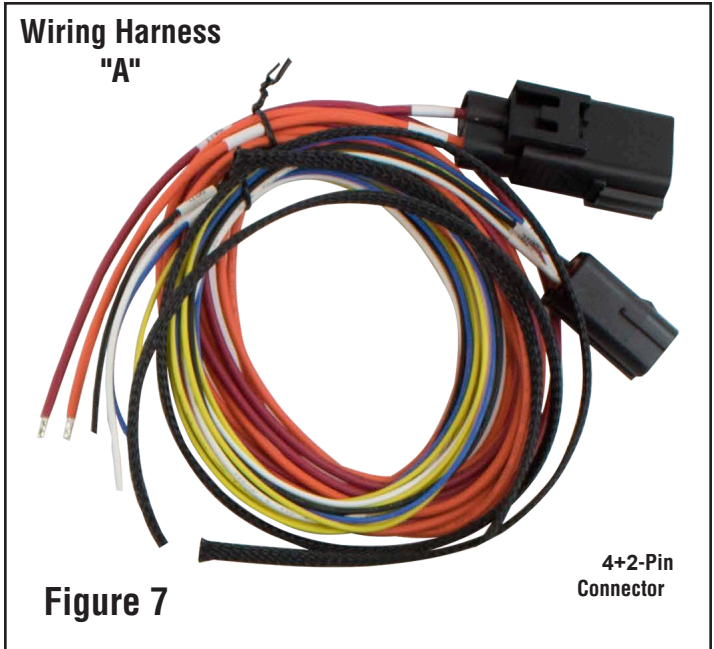
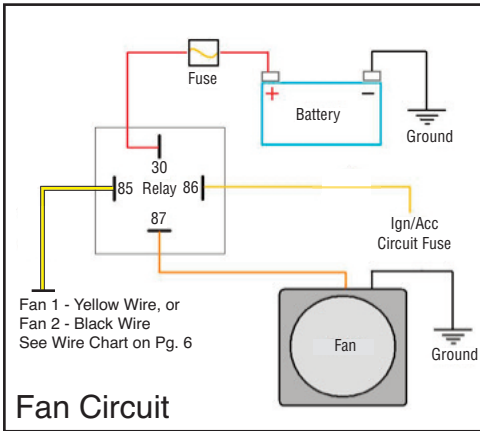


Figure 7  
Harness "A" plugs into connector "B" from throttle body mounted ECU. See Figure 8 and page 6 Wiring Chart.

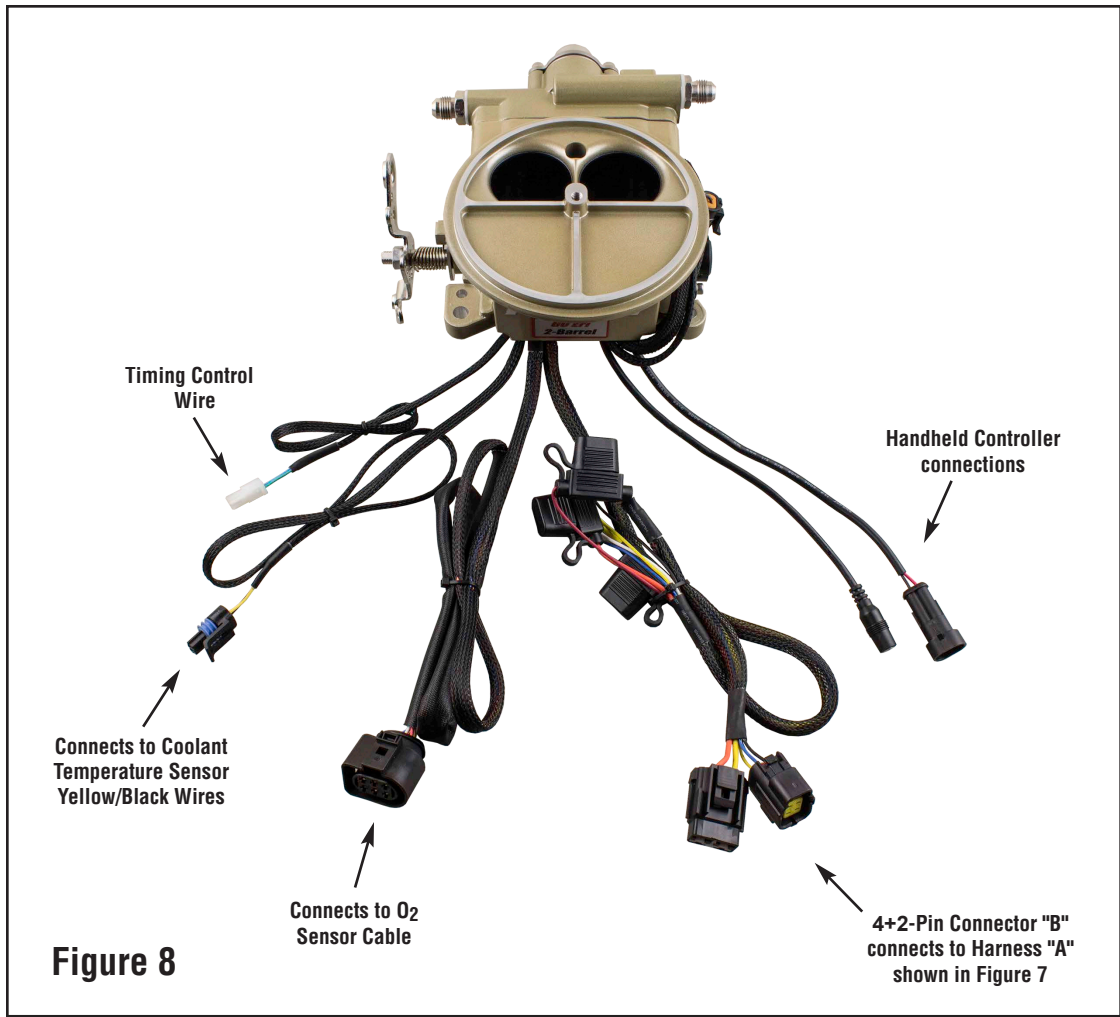


Figure 8

The above photo shows all of the cables that are associated with the FiTech Go EFI 2 Barrel throttle body. The large cable at the bottom left connects to

the supplied Harness "A" which contains the main six wires used in the system. The large coiled cable at top left connects to the supplied Oxygen Sensor cable.

## Wiring Chart

The Chart below lists all of the wires in the FiTech Go EFI 2 Barrel System. The wires are color coded and the wires that are part of Harness "A" are all marked for where they go. There are six wires in Harness "A." Four of them are required connections and two are optional. More detailed connection information (Figures 9 through 11) is provided on later pages of these instructions.

The Following Wires Are Used In All Systems (4+2-Pin Connector)		
Req./Opt.	Wire Color	Description
Required	Red (Large)	Main power. Connect this wire directly to the positive (+) terminal of the battery. This circuit needs to be live even when the switch is off so that the self learning files are maintained. This is fused with a 25 amp fuse.
Required	Yellow/Black	This wire connects to the Engine Coolant Temperature Sensor
Required	Blue	This is the tach input wire which triggers the system. It connects to the 12V Negative terminal of the coil. On HEI distributor it connects to the "Tach" terminal on the distributor cap or connects to a tach output on a CDI box.
Optional	Black	The black wire can provide the following function when grounded: 1. RPM kicks up when A/C is activated.
Required	Orange (Large)	Fuel Pump circuit. This wire provides 12V to the fuel pump and connects to the positive (+) terminal on the pump. No relay is required.
Required	O <sub>2</sub> Harness	This cable from ECU connects to the Wide Band Oxygen Sensor harness.
Required	Wiring Harness A	This connects to Connector "B" from ECU. See Figures 7 and 8 (Page 5).
Required	White	On/Off - Connect this wire to a switched 12V circuit. Must be on during both "Key On" and "Cranking." DO NOT connect to the coil terminal when using an external CDI box such as an MSD 6A or any other CD ignition.
Optional	Yellow	Fan Circuit #1. This wire goes to the ground terminal of the fan relay.



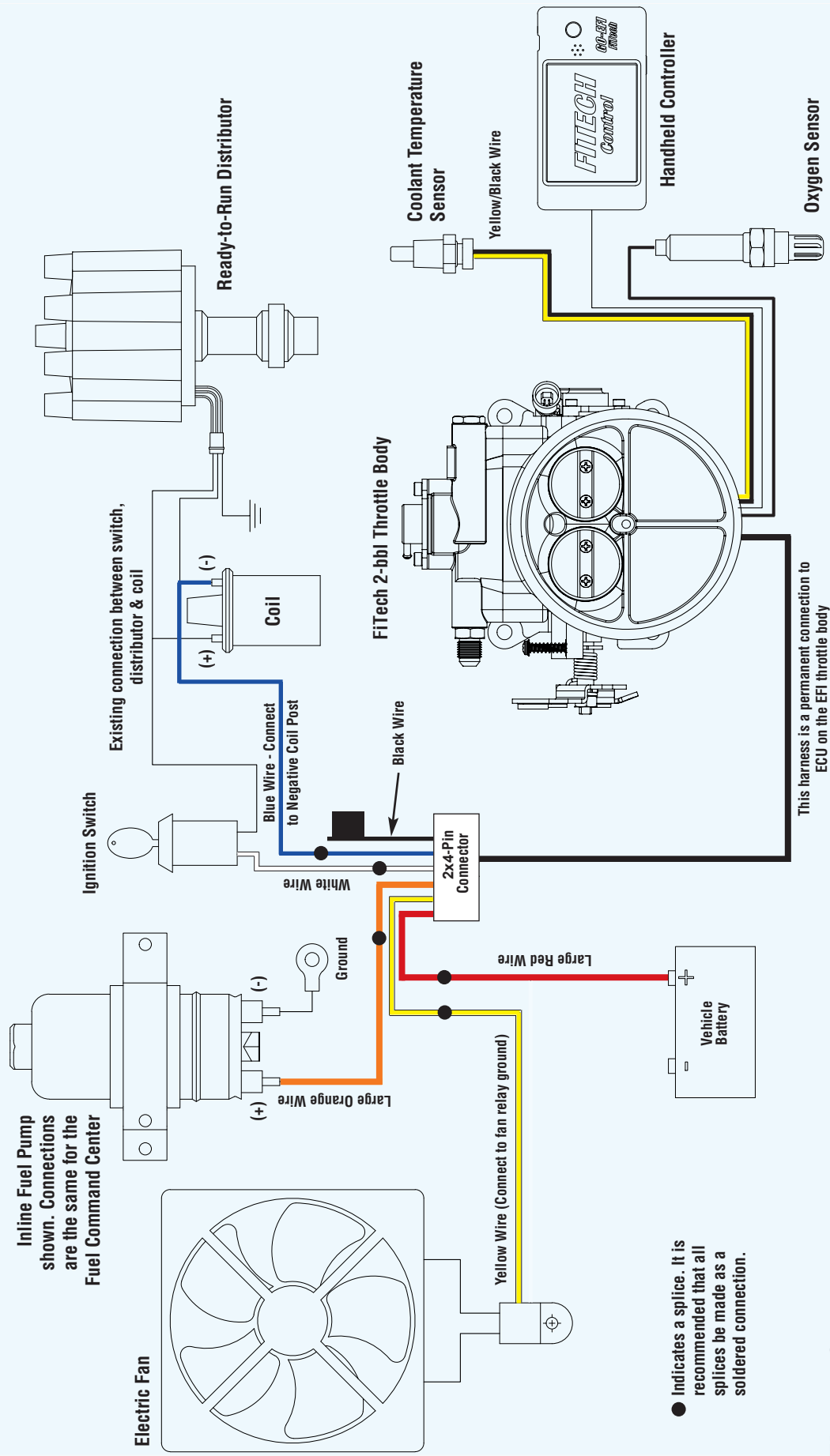
#40005 Frame Mount Inline Fuel Delivery Kit

## Wiring Diagrams

On the following three pages are various wiring diagrams that address the most common ignition arrangements that will be found. Each diagram will show you the specifics of how to wire your FiTech Go EFI 2 Barrel System for that particular ignition setup.

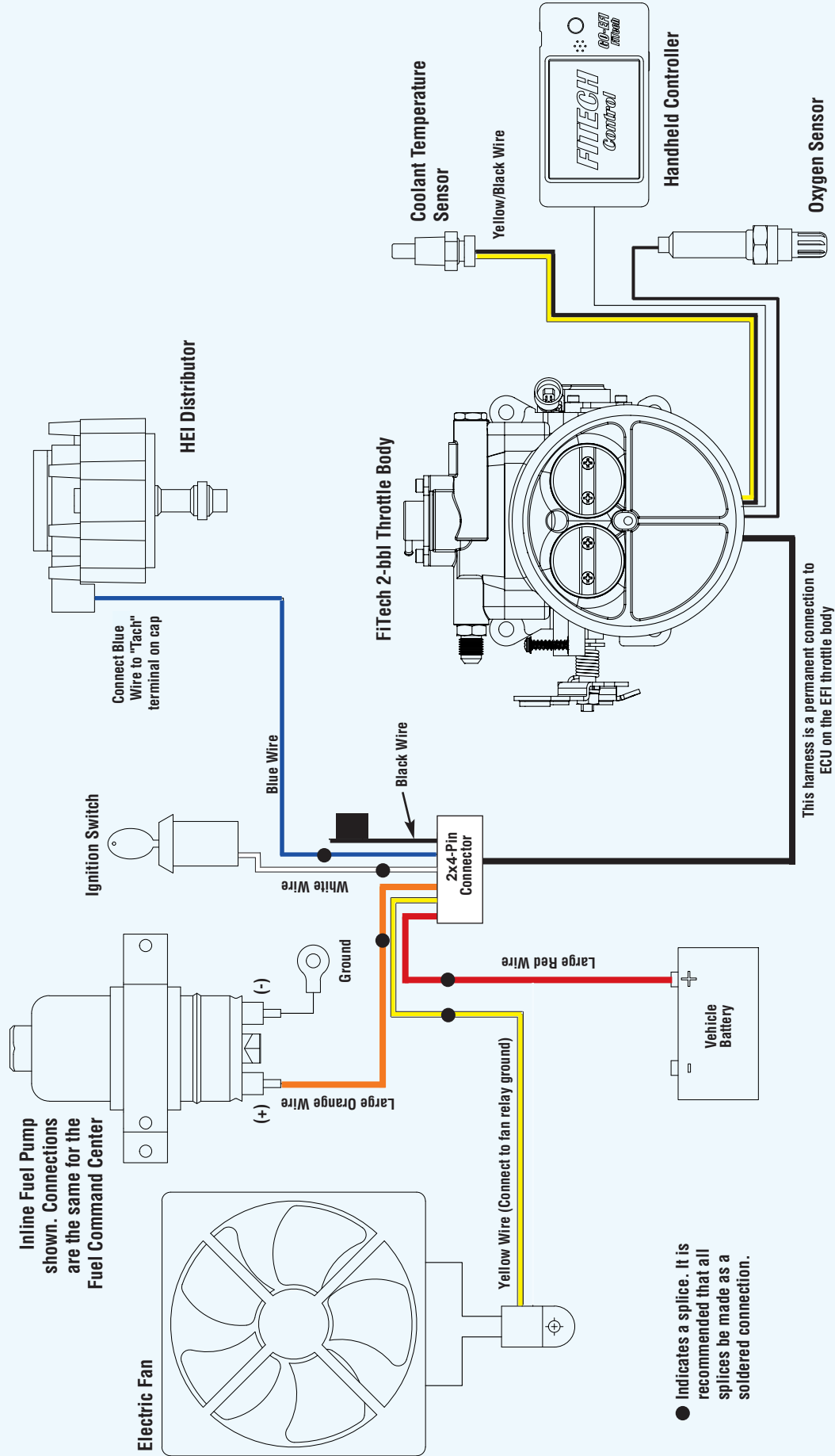
**Selecting the correct wiring schematic:** Review Figures 10 through 11 and select the schematic that suits your particular application. Figure 10 shows how to connect a ready-to-run distributor. Figure 11 is for an HEI distributor. Figure 11 is also for a system with an external CDI box.

## Wiring Connections for FiTech Go EFI System with Ready-to-Run Distributor



**Figure 9**

# Wiring Connections for FiTech Go EFI System with HEI Distributor



● Indicates a splice. It is recommended that all splices be made as a soldered connection.

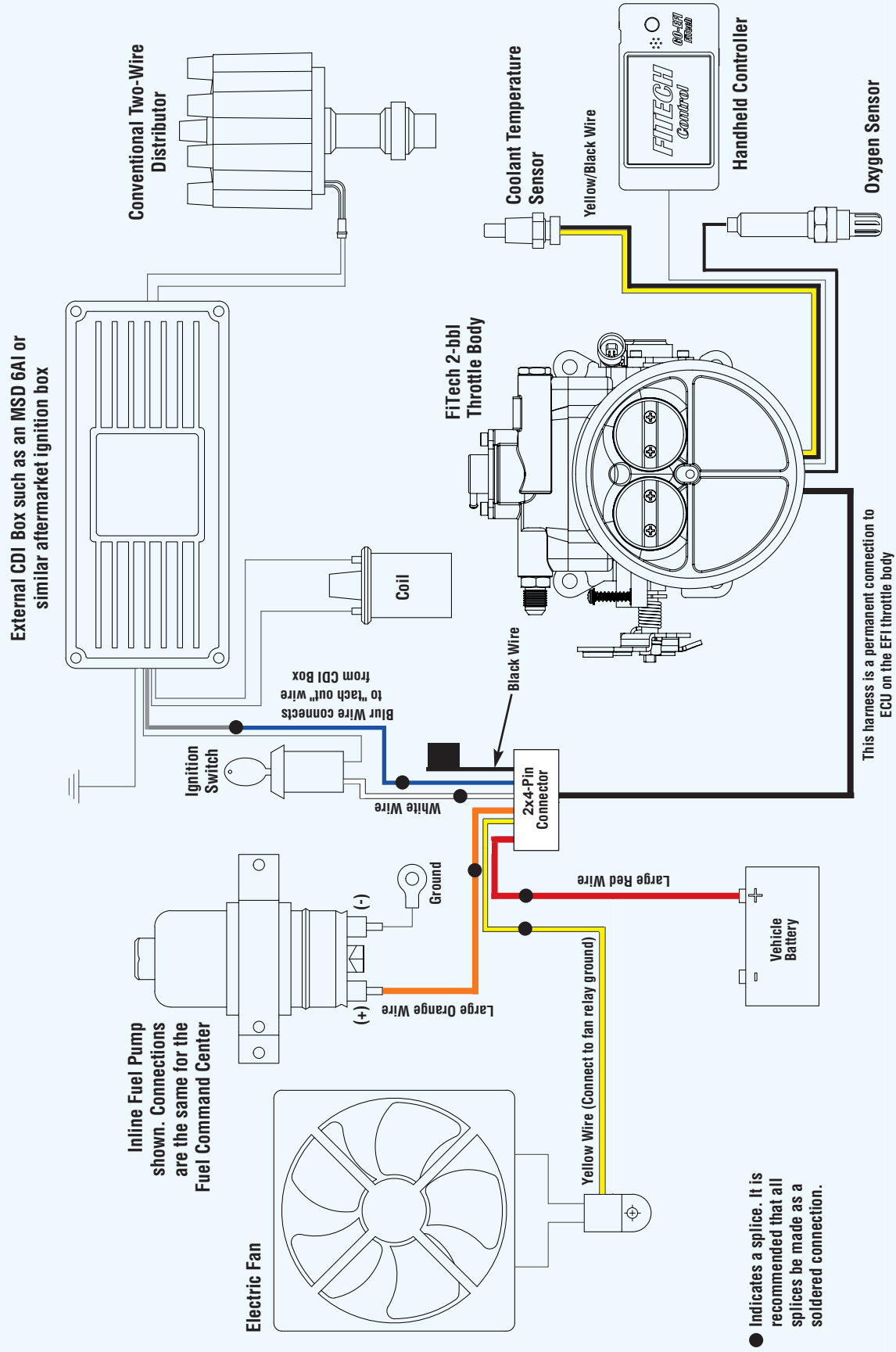
This harness is a permanent connection to ECU on the EFI throttle body

**Figure 10**

Use this wiring schematic if you are utilizing an HEI distributor without an external CDI box, such as a MSD 6AL or similar aftermarket ignition box.



# Wiring Connections for FiTech Go EFI System with External CDI Box



**Figure 11**

Use this wiring schematic if you are utilizing a conventional two-wire distributor with an external CDI box, such as a MSD 6AL or similar aftermarket ignition box.