



INSTALLATION INSTRUCTIONS

Go-Spark Advanced CD
Ignition PN 91001

Thank you for choosing FiTech for your high performance ignition needs.

The FiTech Go-Spark Advanced CD Ignition is a Capacitive Discharge Ignition (CDI) type which produces high voltage sparks from cranking to extreme rpm. The high voltage sparks are the result of advanced digitally controlled technology coupled with an efficient transformer and capacitor. Another benefit of the FiTech Go-Spark Advanced CDI is that it produces a series of sparks at lower rpm. This means that several sparks occur over a span of 20° of crankshaft rotation from cranking to 3,000 rpm. The FiTech Go-Spark Advanced CDI is a capacitive discharge ignition design. Most stock ignition systems are inductive ignitions. In an inductive ignition, the coil must store and step up the voltage to maximum strength in between each firing. At higher rpm, since there is less time to charge the coil to full capacity, the voltage falls short of reaching maximum energy which can result in a loss of power and possible spark output miss firing.

The FiTech Go-Spark Advanced CDI features a capacitor which is quickly charged with ~500 volts and stores it until the ignition is triggered. With a CDI design unit, the voltage sent to the coil is always at full power even at high rpm. Although a inductive ignition coil can be used, for best optimized performance, a proper CD designed ignition coil should be used. The FiTech CD coil #90001 is recommended.

Most stock ignition systems are inductive ignitions. In an inductive ignition, the coil must store and step up the voltage to maximum strength in between each firing. At higher rpm, since there is less time to charge the coil to full capacity, the voltage falls short of reaching maximum energy which can result in a loss of power and possible spark output miss firing.

The Go-Spark Advanced CDI system will operate on any negative ground, 12 volt electrical system with a distributor or EFI timing trigger output. The Go-Spark Advanced CDI can be used with 16 volt batteries and can withstand a momentary 24 volts in some cases of typical jump starting. The Ignition will deliver full voltage with a supply of 9 - 18 volts and will operate with a supply voltage as low as seven volts. If your application does not use an alternator, allow at least 15 amp/hour for every half hour of operation. The Go-Spark Advanced CDI uses approximately 0.9 Amps for every 1,000 rpm. If the engine is cranked with the same battery or other accessories such as an electric fuel or water pump are used, the amp/hour rating of the battery should be higher.



WARNING: Cancer and Reproductive Harm www.P65Warnings.ca.gov

FEATURES

Digital Microcontroller: The FiTech Go-Spark Advanced CDI uses a high speed microcontroller to control the ignition's output while constantly analyzing the various inputs such as Supply Voltage, Launch, Burnout, and Nitrous Retard wires; trigger signals, and rpm. The high speed controller can make extremely quick updates to the ignition output, timing, and rpm limits while maintaining accurate timing signal to within $\pm 1.0^\circ$ timing and ± 2 rpm resolution. The circuits and controller of this system have been designed for optimal protection against Electro Magnetic Interference (EMI).

Reverse Polarity Protection: The Go-Spark Advanced CDI has a built in reverse polarity protection circuit. This will protect the ignition in the event of wrong connections. It will also shut off for protection from a surge in power. The ignition will still operate once the surge or polarity is corrected.

Internal Temperature Protection: The Go-Spark Advanced CDI has built in internal temperature circuitry/sensors allowing it to monitor for over temperature conditions. When internal temperature reaches levels that can cause damage to internal components, the ignition reduces its output power as a protective measure to prevent permanent damage.

Three Rev Limiters: The Go-Spark Advanced CDI features a built-in rev-limiter control with three different user adjustable/selectable rpm limits, one for a Launch setting that can be used when staging the car, one for a Burnout setting that can be used for overrev protection during warming/cleaning up the tires in the water box, and finally a Maximum limit for top end overrev protection. The rev-limiter control circuitry provides accurate rev-limiting by dropping the spark to individual cylinders randomly without repeating drops on the same cylinder within the same cycle. The rev-limiter control produces a load free rev-limit that is typically within 1% of the selected rpm. See programming instructions on page 8 for programming these settings.

Timing Retards (Nitrous and Starting): The Go-Spark Advanced CDI contains timing retard activations for both Nitrous and Starting. Both are independently adjustable for a range of 0° - 20° degrees. Starting retard is most beneficial when utilizing a distributor with locked out timing as it may put a strain on the starter and flywheel. Nitrous retard is a must for any typical nitrous use.

Digital Segment Display: The 5 digit LED readout that monitors the status of the ignition as well as doubles as a programming menu for adjusting certain settings within the Go-Spark Advanced CDI. This readout is powered on when heavy red/black cables are attached to battery AND ignition switched +12v is applied to the small red ignition wire

Energy Mode Selection: The Go-Spark Advanced CDI allows two user selectable modes of energy output. A Low setting of ~ 275 Millijoules used for typical street use and a High setting of ~ 585 Millijoules for track/race mode. With the higher energy output potentially a higher engine output and better performance is achieved. Care must be given to ensure low setting is used for street use as extended periods of time utilizing the higher power level will increase the units internal temperature and may cause the over-temperature protection of the unit to reduce the power output.

GENERAL INSTALLATION INFORMATION

Wiring: All of the wires of the Go-Spark Advanced CDI may be shortened as long as quality connectors are used or soldered in place. To lengthen the wires, use one size bigger gauge wire (12 gauge for the power leads and 16 gauge for the other wires) with the proper connections. All connections must be soldered and sealed.

Routing Wires: The Go-Spark Advanced CDI wires should be routed away from direct heat sources such as exhaust manifolds/headers, any sharp edges, or near moving components such as steering. The input trigger wires (White Points, Mag +/-) should be routed separate from the output trigger wires (Brown, Black) and spark plug wires to prevent interference and/or false triggering. It is best if the input trigger wires are routed along a ground plane such as the block or firewall which creates an electrical shield. The magnetic pickup wires should always be routed separately and should be twisted together to help reduce extraneous interference.

Grounds: A poor ground connection can cause many frustrating problems. When a wire is specified to go to ground, it should be connected to the battery negative terminal, engine block or chassis. There should always be a ground strap between the engine and the chassis. Always securely connect the ground wire to a clean, paint free metal surface.

Spark Plugs: Choosing the correct spark plug design and heat range is important when trying to get the best performance possible. Since there are so many engine combinations and manufacturers, FiTech does not recommend which plug or gap is exactly right for your application. It is recommended to follow the engine builder or manufacturer's specification for spark plugs. With that, you can then experiment with the plug gap to obtain the best performance. Typically the gap of the plugs can be opened in 0.005" increments, then tested until the best performance is obtained. If running a EFI system, it is recommended to run resistor spark plugs. Resistor spark plugs are generally used on vehicles with onboard electronics to reduce the amount of EMI/RFI generated.

Spark Plug Wires: Spark plug wires are very important to the operation of your ignition system. A good quality, helically wound wire and proper routing are required to get the best performance from your ignition, such as the spark plug wires offered by FiTech which offers many applications from premade, universal, to cut-to-fit under part numbers 90010-90023. Helically wound wires provide a good path for the spark to follow while keeping Electro Magnetic Interference (EMI) to a minimum. Excessive EMI, such as the amount that solid core wires produce, will interfere with the operation of the Go-Spark Advanced CDI. **Solid core spark plug wires cannot be used with an Go-Spark Advanced CDI .**

Routing: Correct routing of the plug wires is also important to performance. Wires should be routed away from sharp edges and engine heat sources. If there are two wires that are next to each other in the engine's firing order, the wires should be routed away from each other to avoid inducing a spark into the other wire. For example, in a Chevy V8, the firing order is 1-8-4-3-6-5-7-2. The #5 and #7 cylinders are next to each other in the engine and in the firing order. If the voltage from the #5 wire is induced into #7 detonation could occur and cause engine damage.

Distributor Cap and Rotor: It is recommended to install a new distributor cap and rotor when installing the Go-Spark Advanced CDI. The cap should be clean inside and out especially the terminals and rotor tip. On vehicles with smaller caps, it is possible for the air inside the cap to become electrically charged causing crossfire which can result in misfire. This can be prevented by drilling a couple vent holes in the cap. The holes should be placed between the terminals, at rotor height and face away from the intake. If your environment demands it, place a small piece of screen over the hole to act as a filter.

Mounting: The Go-Spark Advanced CDI can be mounted in the engine compartment as long as it is away from direct engine heat sources and where water may reach. It is not recommended to mount the unit in an enclosed area such as the glove box. When you find a suitable location to mount the unit, Before mounting, confirm that the harness reaches all of the wiring connections. Once a location is determined, mark the mounting hole locations and drill the holes with a 3/16" bit. Sheet metal mounting screws are supplied for a secure mount.

Welding: If you are welding on your vehicle, to avoid the chance of damage, always disconnect both Heavy Power cables of the Go-Spark Advanced CDI. It is recommended to also disconnect the tach ground wire too.

Tachometers: The Go-Spark Advanced CDI features a Blue Tach Output wire that provides a trigger signal for tachometers, a shift light or other add-on rpm activated devices. The Tach Output wire produces a 12 volt square wave signal with a 20% duty cycle. Some vehicles with factory tachometers may require a Tach Adapter to operate with the Go-Spark Advanced CDI.

Tach Adapters: If your tachometer fails to operate with the Go-Spark Advanced CD Ignition installed you may need a Tach Adapter. Before getting an adapter, try connecting your tachometer trigger wire to the Blue tach wire of the Go-Spark Advanced CD Ignition. This output produces a 12 volt, square wave. If the tach still does not operate, you will need a Tach Adapter. These are readily available from vendors within the market.

Foreign Vehicles (No-Run scenarios) Some foreign vehicles with fuel injection systems may require a Tach Adapter to run with an Go-Spark Advanced CD Ignition. This is because many of these systems use the same trigger source to operate the Go-Spark Advanced CD Ignition, the tachometer and the fuel injection. This results in a voltage signal that is too low to accurately trigger the fuel injection.

Coils: The Go-Spark Advanced CDI can be used with most stock coils and aftermarket coils designed to replace the stock coils. The FiTech CD coil #90001 is recommended.

Ballast Resistor: If your vehicle has a ballast resistor in-line with the coil wiring, it is required to bypass it.

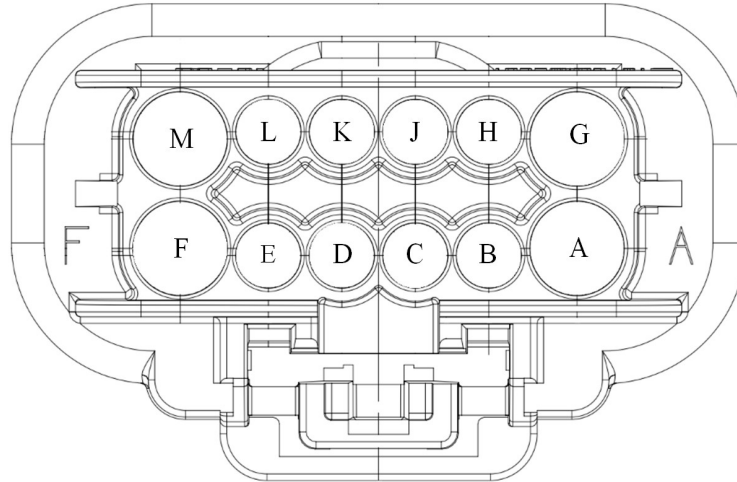
NOTE: Do not use digital or dial back timing lights when checking ignition timing as they may not read accurately

GENERAL INSTALLATION INFORMATION (Cont.)

- When making any electrical connections, always disconnect the negative battery cable.
- The Go-Spark Advanced CDI is protected against reverse polarity and voltage spikes.
- After installing the Go-Spark Advanced CDI, the ignition timing must be checked and reset if necessary. In some applications, due to the efficient digital circuitry, small timing changes occur from pre/post install.
- It is recommended to use a coil designed for CDI style ignitions such as the FiTech #90001
- Be sure to use a high quality set of spiral wound spark plug wires. Do **NOT** use solid core plug wires. FiTech offers many applications from premade, universal, to cut-to-fit under part numbers 90010-90023.
- When checking ignition timing, many digital or dial-back timing lights will not work with the multi-sparks of the Go-Spark Advanced CDI
- The Go-Spark Advanced CDI provides a tach output wire (Blue) that delivers a 12-volt square wave signal for tachometers or EFI systems. Most tachs accept this signal however some older tachs an adapter may be required.
- The Go-Spark Advanced CDI is designed for a 12-volt, negative ground electrical system and can also be used with
- 16-volt systems. It will produce full-output sparks with a supply of 10-20 volts.
- If an alternator is not being used, be sure to use a fully charged battery that can handle a current draw of 0.9 amps per 1,000 rpm. Be sure to consider all other electrical devices as well.
- It is recommended to stick with a good quality spark plug. As for the plug gap, please use the builder or manufacturer's recommendation.
- If running a EFI system, it is recommended to run resistor spark plugs. Resistor spark plugs are generally used on vehicles with onboard electronics to reduce the amount of EMI/RFI generated
- If welding on the vehicle, it is recommended to disconnect the main harness of the ignition to prevent damage to Go-Spark Advanced CDI.
- Contact FiTech Support for info or questions regarding your installation –
techmail@fitechefi.com.

WIRING HARNESS

As viewed where wires enter the connector



Wire	Connector Cavity	Function	Connection
Heavy Red	G	Main Positive	Connect directly to battery positive post or main junction stud. Do not connect to alternator or starter.
Heavy Black	A	Main Negative	Connect directly to battery negative post or the engine block.
Red	E	Power On/Off	Connect to a key/ignition switched 12 volt source. This must have 12 volt during both cranking and key-on positions This is the on/off wire for the ignition
Heavy Brown	F	Coil Positive	Connect directly to ignition coil positive terminal. This is the only wire that should be on this coil terminal. No other vehicle wires should be connected here.
Heavy Black	M	Coil Negative	Connect directly to ignition coil negative terminal. This is the only wire that should be on this coil terminal. No other vehicle wires should be connected here.
Trigger Input Wires		Use the white wire <u>OR</u> 2-pin magnetic pickup connector. When one is used, be sure other input source is <u>not</u> connected to anything on vehicle.	
White	L	Trigger Signal	Connect to the original coil negative wire of breaker points or amplifier Output. If using with a EFI system that will be controlling timing, this wire connects to the coil/points trigger output of that system.
Violet	C	Mag Pickup +	Located in two pin connector for use with Magnetic Pickup distributors, positive
Green	K	Mag Pickup -	Located in two pin connector for use with Magnetic Pickup distributors, negative
Advanced Wires (Inputs)			
Lt. Green	J	Launch Rev Limiter	Activates the Launch Rev Limiter RPM setting. When 12 volts are applied to this wire it will activate the Launch Rev Limiter. Launch Rev Limiter setting will be active until release of this wire. Connect to Trans brake solenoid power wire if used.
Gray	H	Burnout Rev Limiter	Activates the Burnout Rev Limiter RPM setting. When 12 volts are applied to this wire it will activate the Launch Rev Limiter. Launch Rev Limiter setting will be active until release of this wire. Connect to Line Lock solenoid power wire if used.
Orange	B	Nitrous Step Retard	Nitrous Retard is enabled when 12 volts are applied to this wire.
Tach Output Wire			
Blue	D	Tach Output	Connects to a tachometer, rpm activated device or EFI system trigger input. This wire will provide a 12 volt square wave tach signal

DIGITAL MENU OVERVIEW

Digital Segment LED Readout: There is a 5 digit LED readout that monitors the status of the ignition as well as doubles as a programming menu for adjusting certain settings within the Go-Spark Advanced CDI. This readout is powered on when heavy red/black cables are attached to battery AND ignition switched +12v is applied to the small red ignition wire.

Live Realtime Readings: In normal operation, the Go-Spark Advanced CDI will show current live stream readings of Engine RPM and Battery Voltage. Using the menu buttons carefully, the end user can cycle through the menu during normal operation to find both the rpm and voltage values but also other selectable settings. Although they can be viewed, it is recommended not to change settings during engine operation. Doing so while the engine is running can damage engine and/or cause personal harm.

Rev-Limiter, Max Limit: This is the over rev rpm limit used by the Go-Spark Advanced CDI during any operation where the Launch 2-Step limit or Burnout 3-Step limit wires are not activated. The rev-limiter control will begin dropping the spark to cylinders any time the rpm reaches the amount you select, except when the Launch 2-Step Limit or Burnout 3-Step Limit is activated. The limit can be adjusted from 1,000 to 10,000 rpm using the programming buttons.

Rev-Limiter, Launch 2-Step Limit: This rpm limit is activated when 12 volts are applied to the Lt. Green wire. When activated, this limit overrides the Max Limit. This limit is adjustable from 1,000 to 10,000. An example of wiring the Launch 2-Step Limiter so it is activated with the Trans-Brake is shown on page 14. If not equipped with a Trans-Brake, it is recommended to not to use the Launch 2-Step Limit. With careful consideration, it could be connected to a brake switch with careful consideration for use in all scenarios (braking at high rpm will cause the rev limit to activate and cause harm and/or damage).

Rev-Limiter, Burnout 3-Step Limit: This rpm limit is activated when 12 volts are applied to the Gray wire. When activated, this limit overrides the Max Limit. This limit is adjustable from 1,000 to 10,000. An example of wiring the Burnout 3-Step Limiter so it is activated with a Line Lock is shown on page 14.

Nitrous Retard: The nitrous retard is activated when 12 volts are applied to the Orange wire. The step retard is adjustable in a range of 0°-20° degrees. The maximum retard allowed by the system is a total of 20°. An example of wiring the Nitrous Retard so it is activated with a nitrous system is shown on page 14.

Start Retard: User can specify a start “cranking” retard in degrees. The settable range is 0°-20° degrees. While every engine responds differently, a typical starting point recommendation for a start retard amount is to remove 10° during the cranking period. This value will be in effect at any engine rpm below 550 rpm. After 550 rpm, if the nitrous retard is not enable, the ignition box will be at “base” ignition timing output (not applying any timing correction).

Cylinder Count: The Go-Spark Advanced CDI is programmed at the factory for use on 8-cylinder engines but is programmable for operation on common 4, 6, and 8 cylinder engines. Although defaulted for 8 cylinder operation, if installing the Go-Spark Advanced CDI on a different style engine, the number of cylinders will need to be changed using on the digital screen menu. This is easily achieved through the cylinder select setting within the digital readout. For use on an even-fire 6-cylinder or 4-cylinders use digital selection menu.

Energy Mode Selection: The Go-Spark Advanced CDI is programmable two modes of energy output. A Low (L) setting of ~275 Millijoules used for typical street use and a High (H) setting of ~585 Millijoules for track/race mode. With the higher energy output potentially a higher engine output and better performance is achieved. Care must be given to ensure low setting is used for street use as extended periods of time utilizing the higher power level will increase the units internal temperature and may cause the over-temperature protection of the unit to reduce the power output.

DIGITAL MENU PROGRAMMING



NOTE: Only make changes to menu settings when engine is NOT running. Doing so while engine is running can damage engine and/or cause personal harm. After a change is made, turn ignition key off for at least 5 seconds to set change in unit.

Page Up/Page Down buttons cycles through setting menu label function sequence

Page Up - ○

Page Down - ○

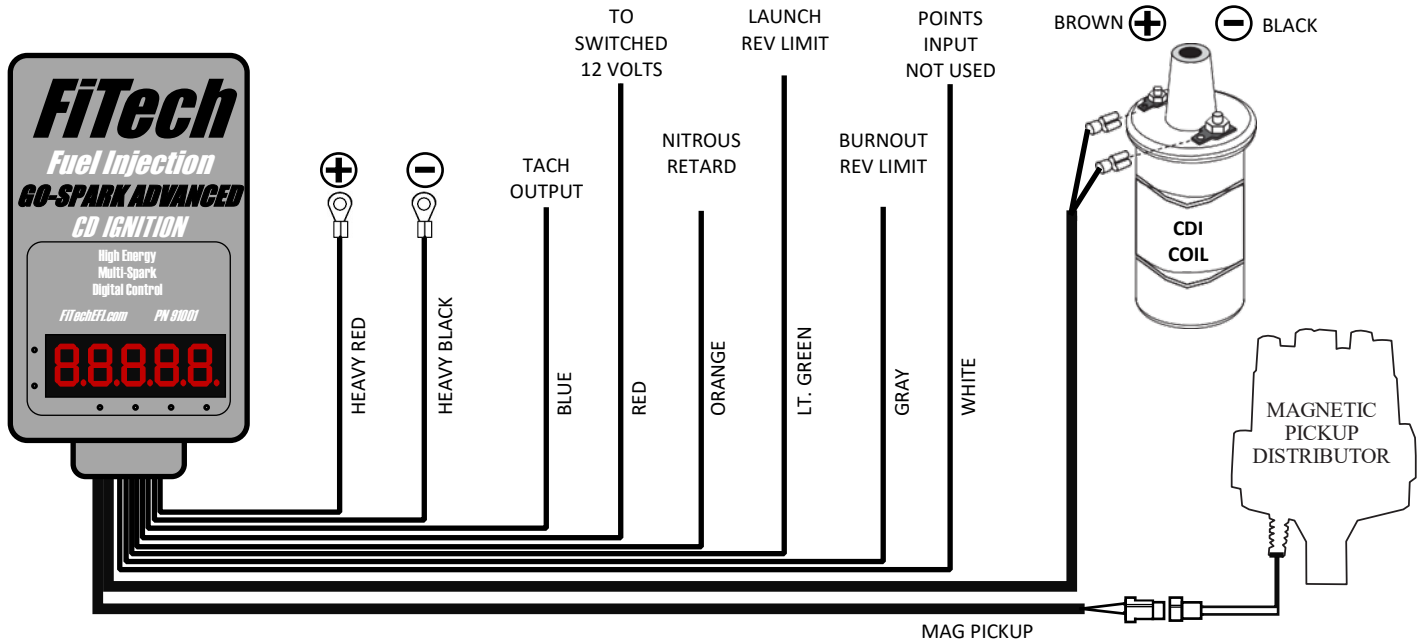


+1000 Button	+100 Button	+10 Button	+1 Button
Raises/Cycles Thousands digit	Raises/Cycles Hundreds digit	Raises/Cycles Tens digit	Raises/Cycles Ones digit

NOTE: Each section will restart at beginning of sequence when end of sequence is reached. (example if 9000 is currently shown on the screen, a press of the +1000 button will cycle to 0000, then to 1000, 2000, 3000, etc. at each single press of the button. Likewise, pressing any of the other buttons will cycle their corresponding digital in the same fashion.

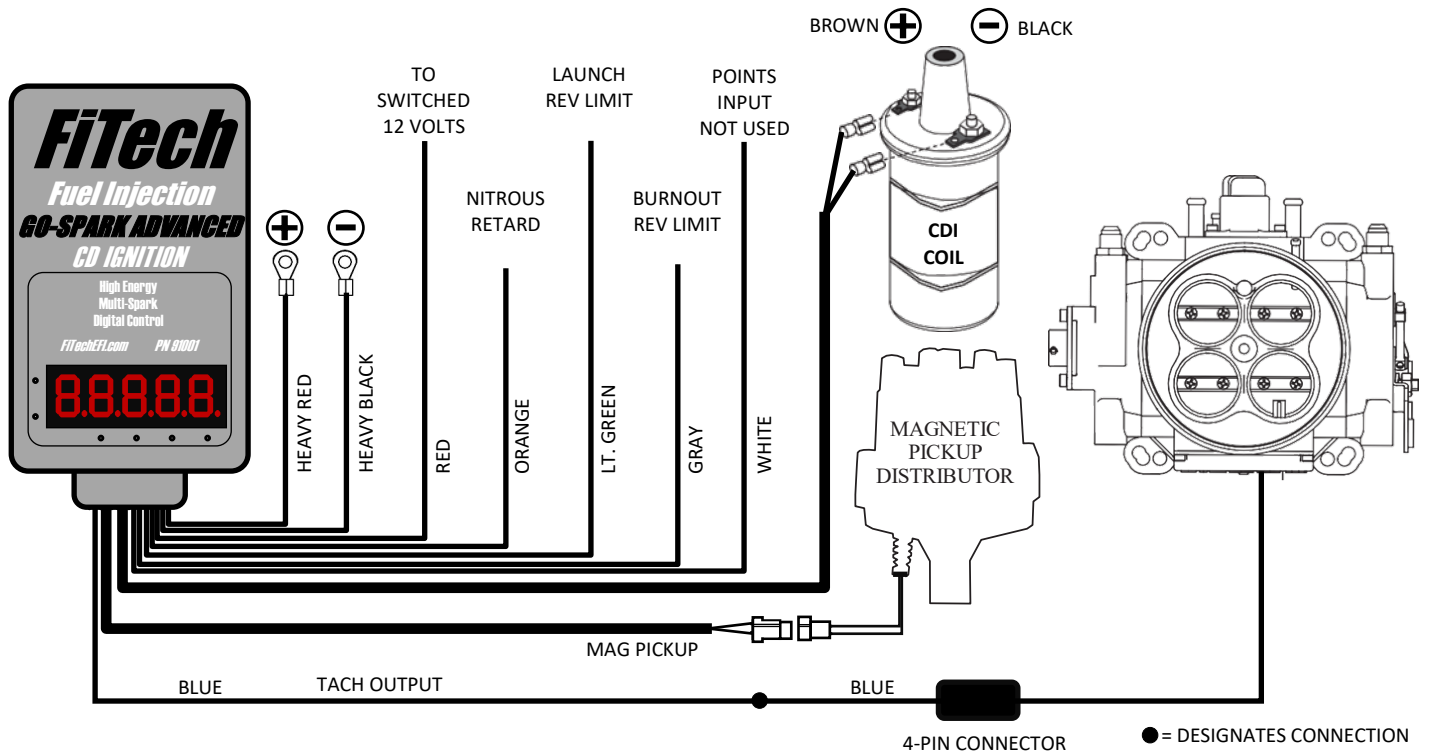
Label (Shown on far left digit)	Function	Description	Setting type
E	Engine RPM	Live Reading, shows current Engine RPM	Live Reading, no setting change
R	Max Rev Limiter Setting	Current Max Rev Limiter setting (0-9999), active any time engine is running	Value can be adjusted using buttons #1 thru #4
L	Launch Rev Limiter Setting	Current Launch Rev Limiter setting (0-9999), active when +12v applied to Lt. Green wire	Value can be adjusted using buttons #1 thru #4
b (B)	Burnout Rev Limiter Setting	Current Burnout Rev Limiter setting (0-9999), active when +12v applied to Gray wire	Value can be adjusted using buttons #1 thru #4
U (V)	Battery Voltage	Live Reading, shows current Battery Voltage (00.00-99.99)	Live Reading, no setting change
F	Nitrous Retard Degrees	Current Nitrous Retard Degrees setting (0°-20° degrees), active when +12v applied to Orange wire	Value can be adjusted using buttons #3 and #4
S	Start "Cranking" Retard Degrees	Current Start Retard Degrees setting (0°-20° degrees), active when RPM is below 550 rpm.	Value can be adjusted using buttons #3 and #4
C	Cylinder Count	Shows current cylinder count selection (4, 6, 8), shown on far right digit	Value can be adjusted using button #4
P	Energy Mode	Shows current energy mode selection L=Low H=High, shown on far right digit. High setting should not be used for typical street driving due to greater internal heat created. Failure to ensure low setting is in use for street driving can damage Go Spark CDI. High setting should only be used during track events.	Value can be adjusted using button #4

Installing to a Magnetic Pickup (2-wire) Distributor



See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
 Use the white wire OR 2-pin magnetic pickup connector.
 When one is used, be sure other input source is not connected to anything on vehicle.

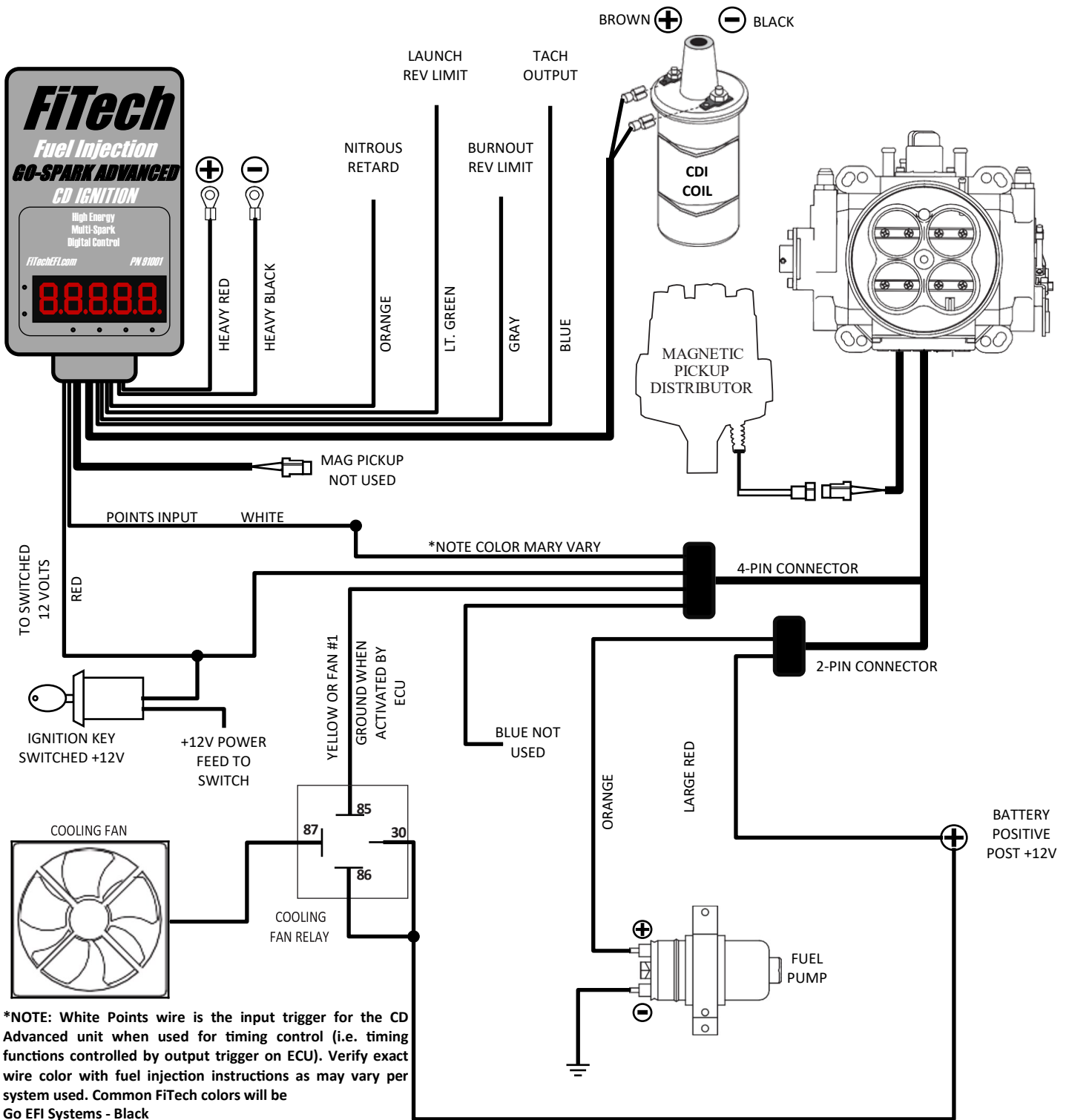
Installation to a Magnetic Pickup (2-wire) Distributor and FiTech Throttle Body EFI System Non-Timing Control by ECU



See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
 Use the white wire OR 2-pin magnetic pickup connector.
 When one is used, be sure other input source is not connected to anything on vehicle.

Installation for Timing Control through FiTech Systems

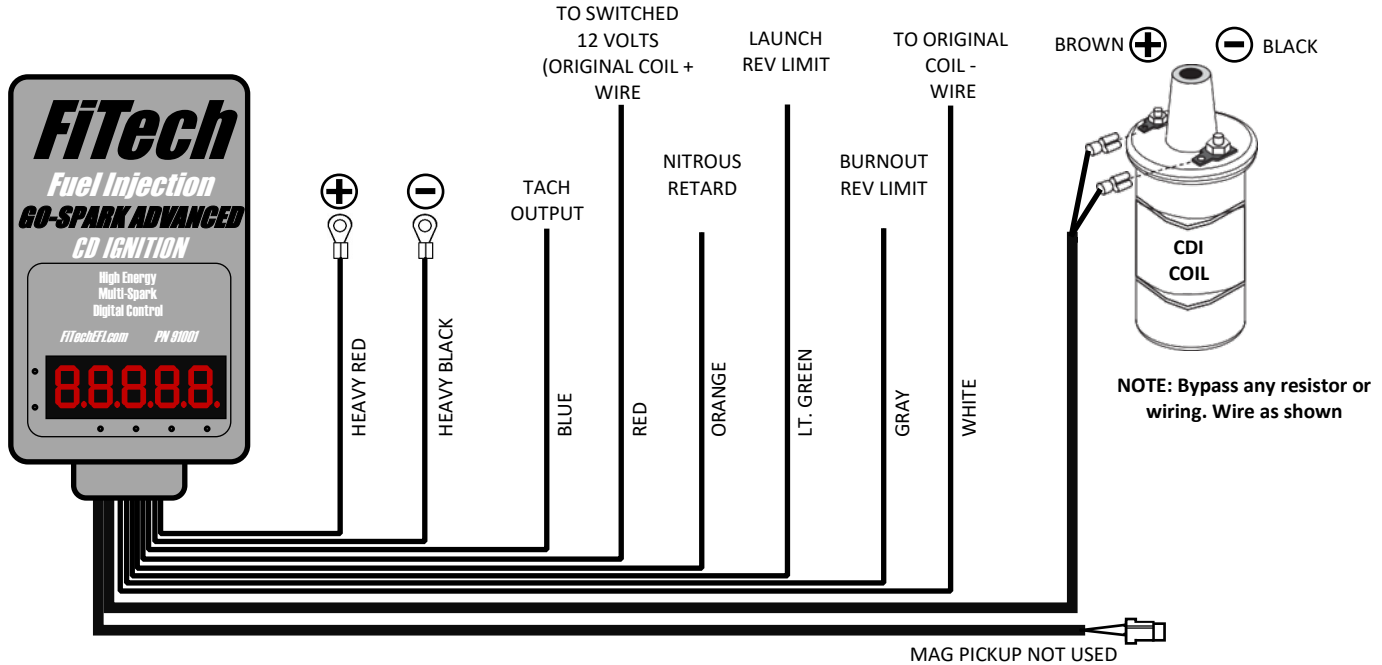
See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
 Use the white wire OR 2-pin magnetic pickup connector.
 When one is used, be sure other input source is not connected to anything on vehicle.



*NOTE: White Points wire is the input trigger for the CD Advanced unit when used for timing control (i.e. timing functions controlled by output trigger on ECU). Verify exact wire color with fuel injection instructions as may vary per system used. Common FiTech colors will be
 Go EFI Systems - Black
 Go Port Systems - Black
 Tri-Power Systems - Yellow
 Ultra Ram Systems - Yellow
 Classic Systems - Yellow

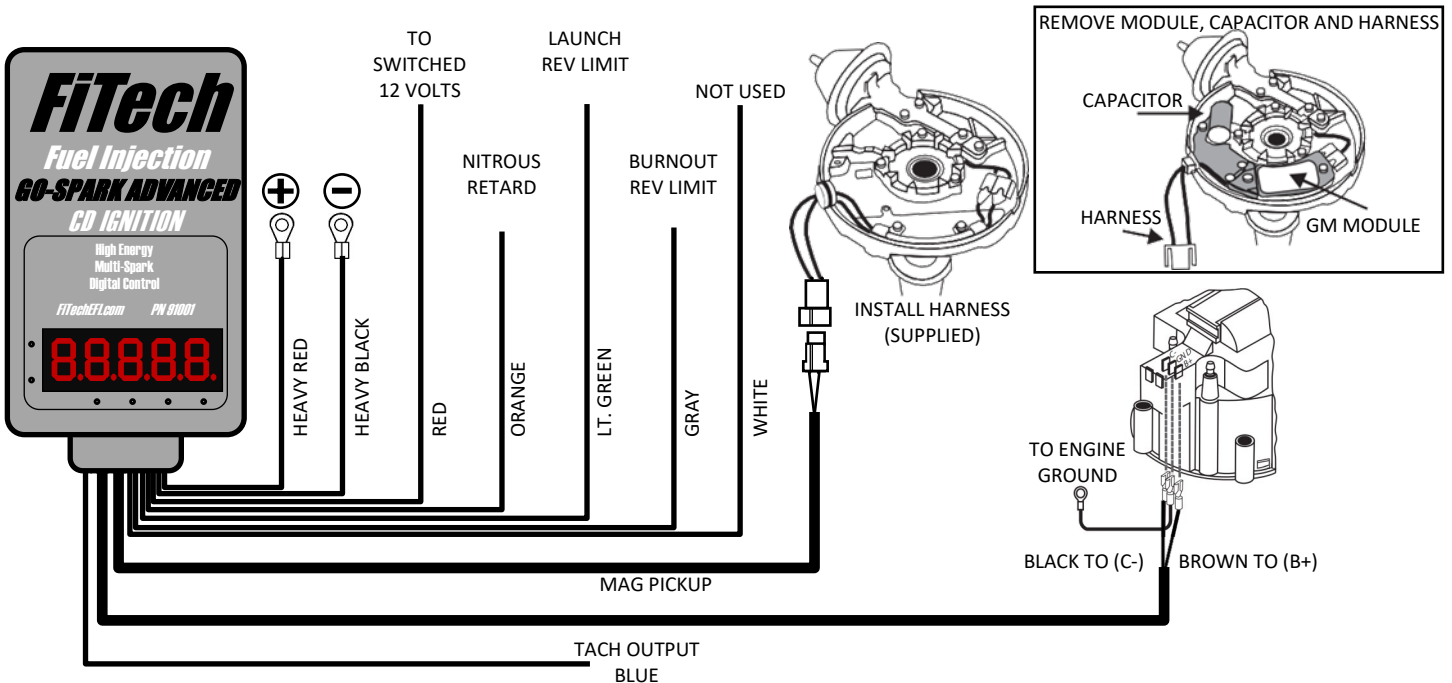
● = DESIGNATES CONNECTION

Installation to Point/Amplifier System



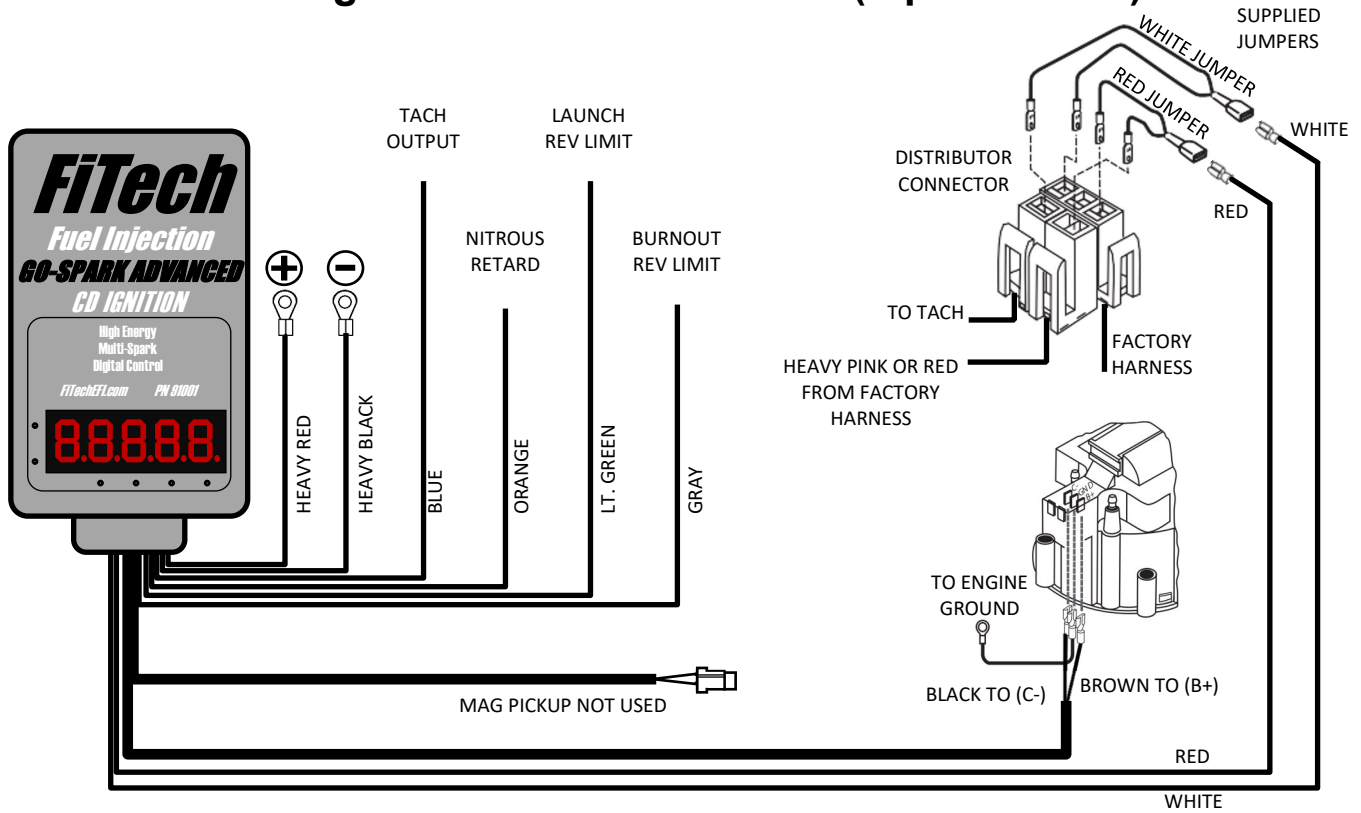
See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
Use the white wire OR 2-pin magnetic pickup connector.
When one is used, be sure other input source is not connected to anything on vehicle.

Installing to a GM HEI Distributor (4-pin Module)



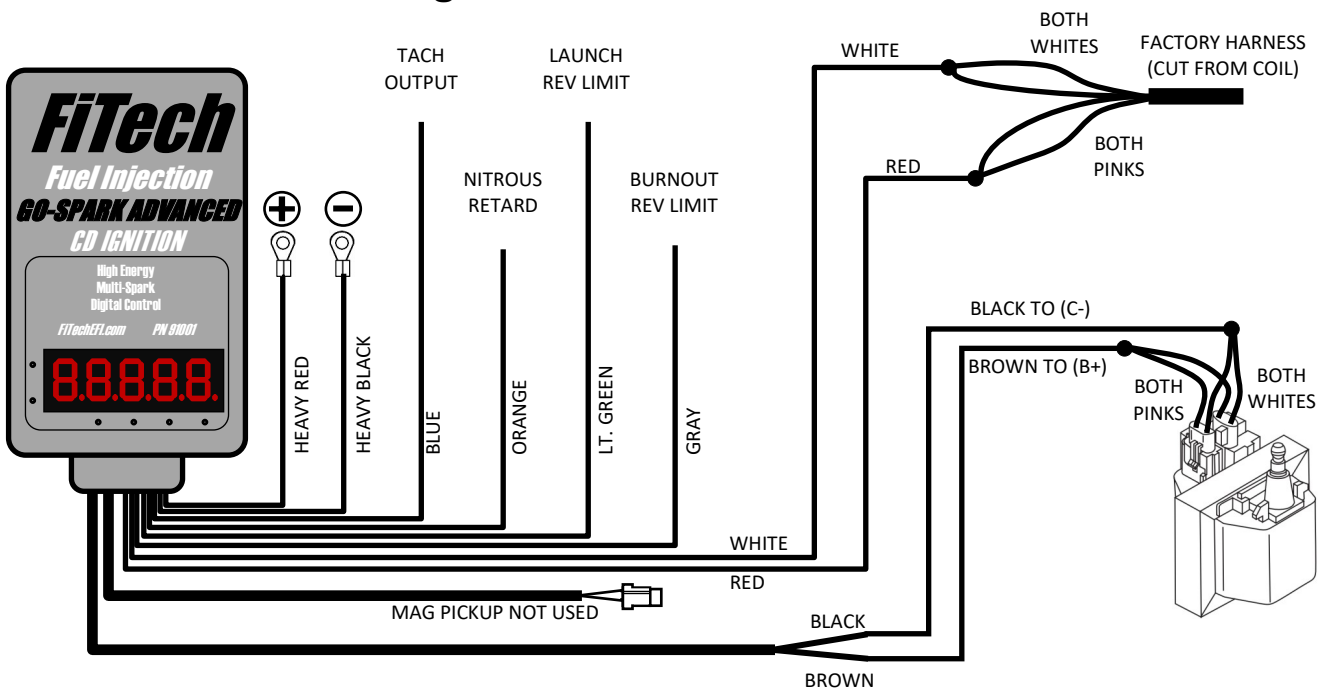
See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
Use the white wire OR 2-pin magnetic pickup connector.
When one is used, be sure other input source is not connected to anything on vehicle.

Installing to a GM HEI Distributor (7-pin Module)



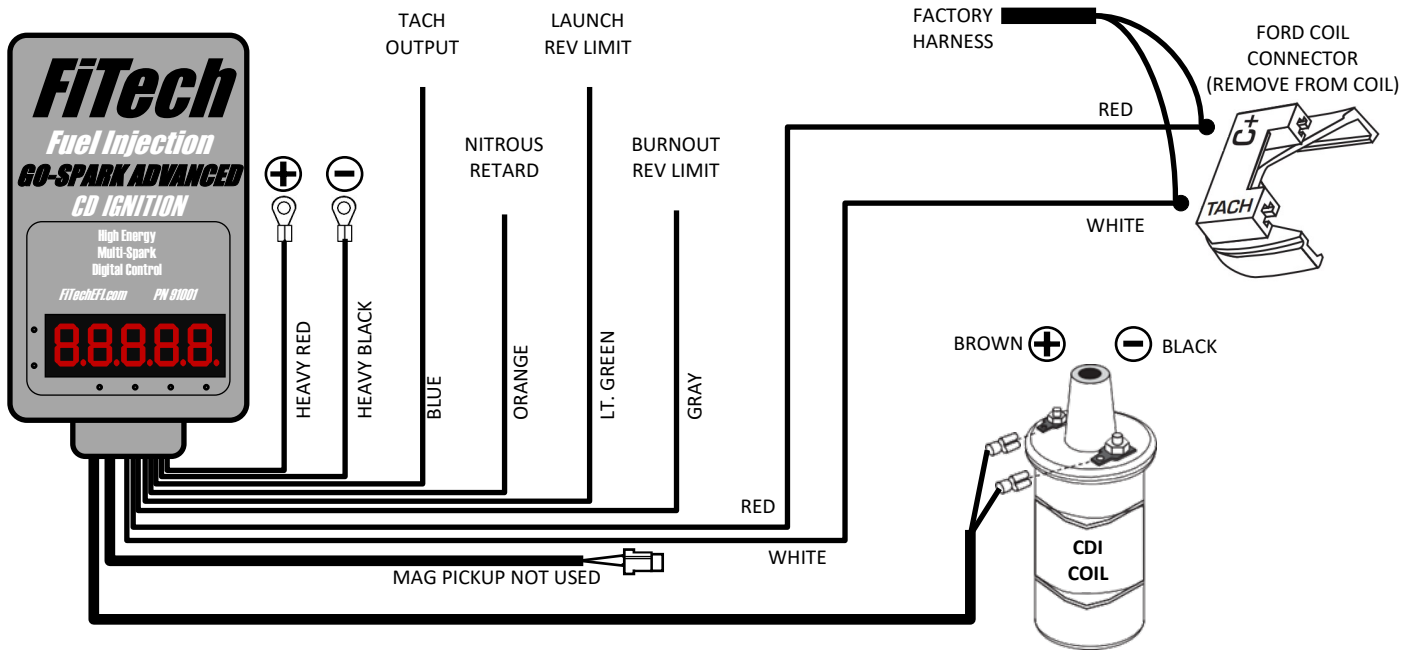
See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
 Use the white wire OR 2-pin magnetic pickup connector.
 When one is used, be sure other input source is not connected to anything on vehicle.

Installing to a GM Dual Connector Coil



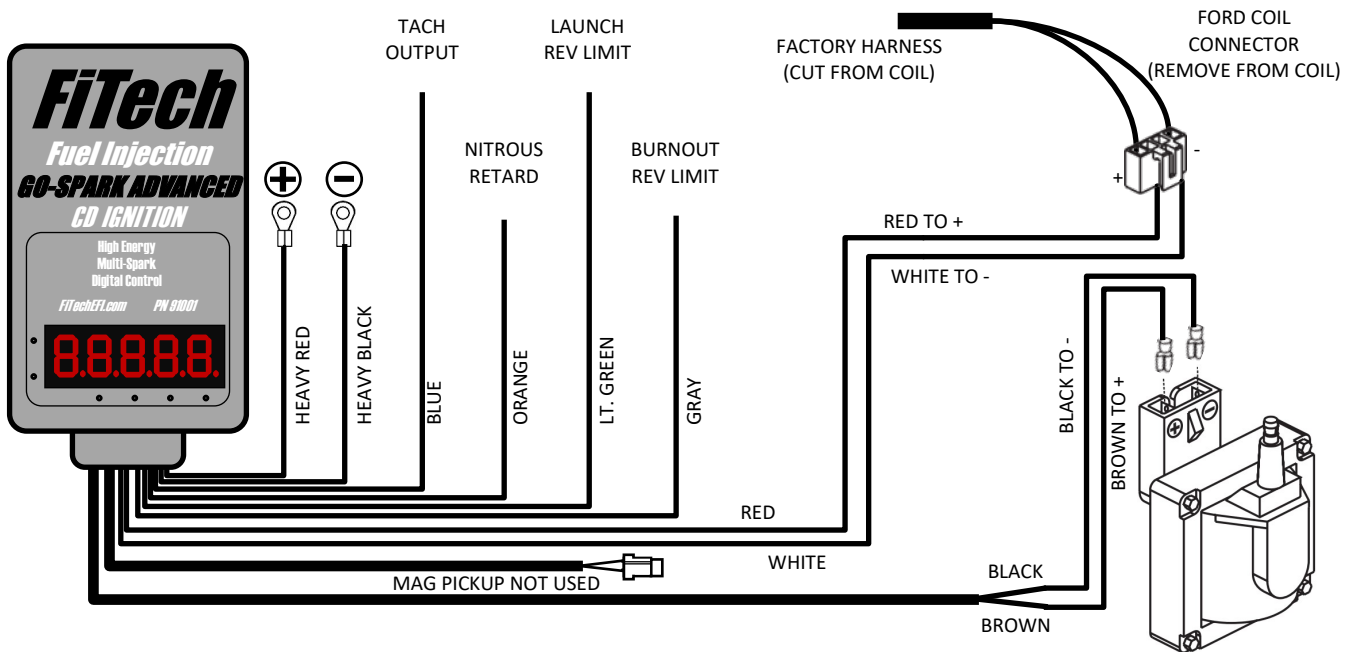
See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
 Use the white wire OR 2-pin magnetic pickup connector.
 When one is used, be sure other input source is not connected to anything on vehicle.

Installation to Ford Duraspark



See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
 Use the white wire OR 2-pin magnetic pickup connector.
 When one is used, be sure other input source is not connected to anything on vehicle.

Installation to Ford TFI



See Page 14 for Launch Rec Limit, Burnout Rev Limit, Nitrous Retard wiring details.
 Use the white wire OR 2-pin magnetic pickup connector.
 When one is used, be sure other input source is not connected to anything on vehicle.

INSTALLATION OF INPUT WIRES

Launch Rev-Limiter, Burnout Rev-Limiter, Nitrous Retard Circuits

Below is a overly simplified general guideline to illustrate basic functions. Exact wiring may vary per application. Go-Spark Advanced CDI box requires +12 volts on each of the corresponding wires to activate each of the corresponding circuits (rev-limiter and/or nitrous retard).

INPUT WIRES +12 VOLT TO ACTIVATE		
LAUNCH	REV-LIMITER	LT. GREEN
BURNOUT	REV-LIMITER	GRAY
NITROUS	TIMING RETARD	ORANGE

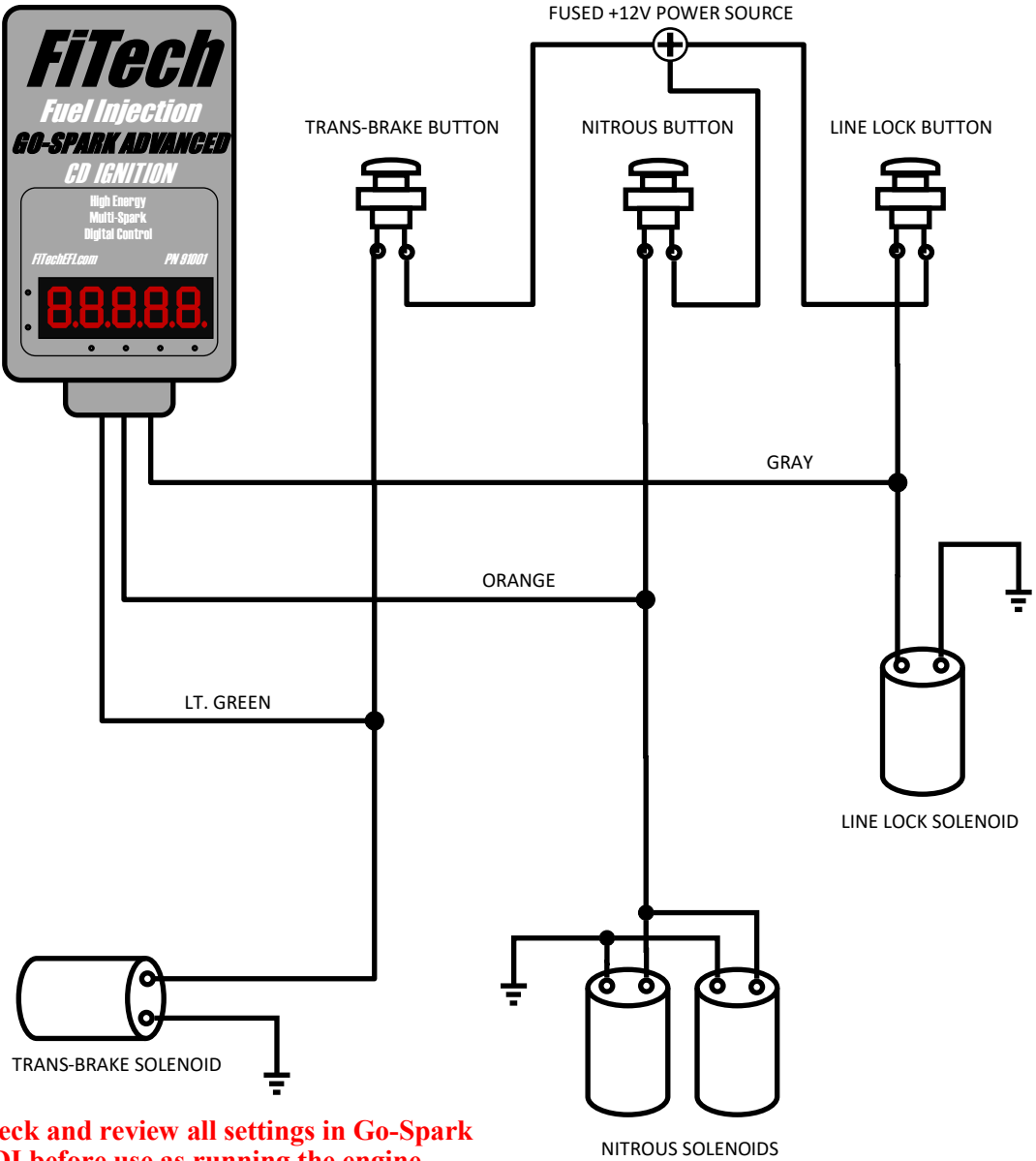
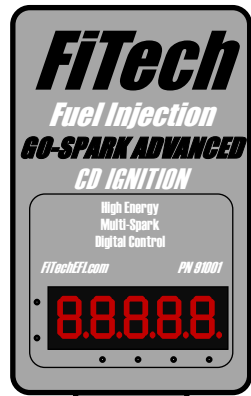
CIRCUIT ACTIVATION BUTTONS:
PUSHING BUTTON CLOSSES CIRCUIT
FOR ACTIVATION

The inputs are activated by applying 12 volts to the corresponding colored wire on the ignition box harness .

Shown is a simple example of wiring each circuit.

Wire each input per desired result.

Keep in mind wire connections in circuit should be after any timers/controllers used for each to ensure desired result is as expected on each circuit.



● = DESIGNATES CONNECTION



Be sure to check and review all settings in Go-Spark Advanced CDI before use as running the engine with improper settings can damage the engine and/or cause personal harm.

TROUBLESHOOTING



NOTE: Care must be taken with working with vehicle electronics. Doing so while engine is running can damage engine and/or cause personal harm. Ensure all safety measures are in place before performing any work on the vehicle.

Every Go-Spark Advanced CDI unit undergoes numerous quality control checks including a burn-in and run test. If you experience a problem with your system, our research/records has shown that the majority of problems are typical due to improper installation and/or poor connections. The Troubleshooting section has several checks and tests you can perform to ensure proper installation and operation of the system.

Intermittent Issues: If experiencing intermittent issues or engine misfires the culprit can generally be tracked to a faulty spark plug wire, burned boot, worn distributor cap, wiring connection or ground. Before testing the ignition box, please review the following:

1. Is the battery fully charged and the alternator is properly charging? The Go-Spark Advanced CDI requires a supply of over 10 volts or the output may suffer
2. Is the engine running lean? Inspect the spark plugs and fuel system
3. Inspect the wiring connecting to the coil. The only two wires should be the brown and orange wires of the Go-Spark Advanced CDI connected to the negative and positive terminals respectively. Also ensure that the coil wire to the distributor is connected properly and in good shape. Remember, this wire does eight times the work as the other cylinders!
4. Inspect the plug wires, terminals and boots. Always use a quality set of suppression spark plug wires – never use solid core wires

Tachometer Issues If you're factory or aftermarket tachometer does not work properly after installing the Go-Spark Advanced CDI, please contact customer support at: techmail@fitechefi.com or call 951-340-2624. It is likely an easy solution and due to the 12-volt square wave output signal on the blue tach wire of the ignition. This is a common signal today, but some older factory tachometers may have trouble.

Misses and Intermittent Problems: Experience at the races has shown that if your engine is experiencing a miss or hesitation at higher rpm, it is usually not directly ignition. Most probable causes include faulty wiring, a coil or plug wire failure, arcing from the cap or boot plug to ground or spark ionization inside the cap. Several items to inspect are:

Always inspect the plug wires at the cap and at the plug for a tight connection and visually inspect for cuts, abrasions or burns.

Inspect the Primary Coil Wire connections. Because the Go-Spark Advanced CDI is a Capacitive Discharge ignition and it receives a direct 12 volt source from the battery, there will not be any voltage at the Coil Positive (+) terminal even with the key turned On. During cranking or while the engine is running, very high voltage will be present and no test equipment should be connected.



WARNING: Do not touch the coil terminals during cranking or while the engine is running.

Make sure that the battery is fully charged and the connections are clean and tight. If you are not running an alternator this is an imperative check. If the battery voltage falls below 9 volts during a race, the Go-Spark Advanced CDI output voltage will drop and the current draw will increase. Is the engine running lean? Inspect the spark plugs and complete fuel system.

Inspect all wiring connections for corrosion or damage. Remember to always use proper connections followed by soldering and seal the connections completely.

Engine Run-On

If your engine continues to run after installing the Go-Spark Advanced CDI, it is likely due to a low voltage feedback signal from the original charge lamp indicator when still equipped with the factory plugin style alternator. There are several easy fixes depending on the application.

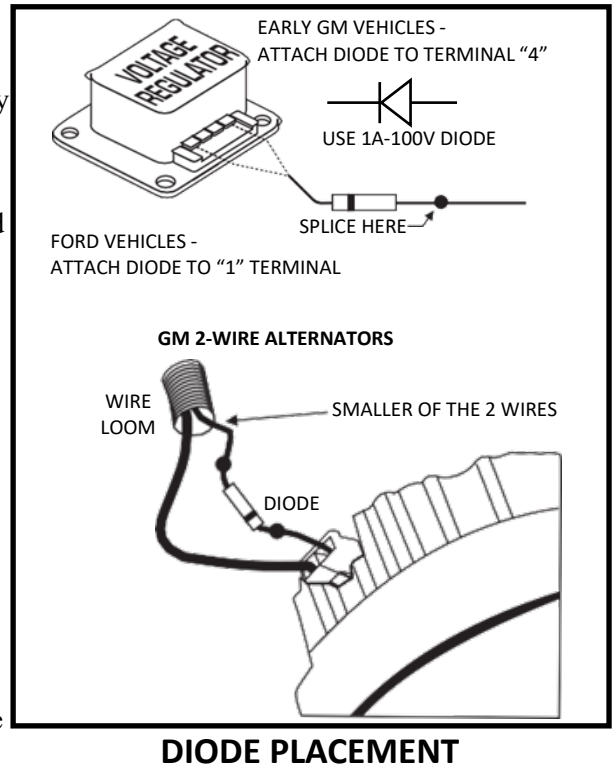
A diode, which allows voltage to travel only one direction, is supplied in the parts bag. The diode must be installed on the wire going to the charge indicator and needs to be in the right direction.

Early Ford: Install the diode in-line on the wire connecting to terminal 1 of the external voltage regulator

Early GM: Install the diode in-line on the wire connecting to terminal 4 of the external voltage regulator.

1973-1983 GM Alternators: These alternators use an internal regulator. Install the diode on the smaller of the two wires connected to the alternators. In most cases this wire is Brown.

Most other applications: On other applications where engine Run-On is experienced, a Resistor can be put in-line to the Go-Spark Advanced CD Ignition small Red wire. This resistor will keep voltage from leaking through to the Go-Spark Advanced CD Ignition



For other applications, please contact our support team at tech@fitechefi.com or call 951-340-2624.

Test for Spark

The Go Spark CDI can easily be tested to confirm that it is producing a spark. Follow the procedure below to 'false trigger' the ignition to verify it is firing.

1. With the ignition in the off position, remove the coil wire from the distributor cap.
2. Place the coil wire terminal about ½" from ground (away from any fuel sources).
3. If triggering with the **white wire** of the Go-Spark Advanced CDI, disconnect that wire from the distributor or FiTech EFI system. If triggering with the **2-pin mag pickup harness**, disconnect it from the distributor
4. Turn the ignition to the on position – **do not crank the engine**
5. For a **white wire trigger**, tap the white wire to ground several times. A spark should jump from the coil wire to ground. This means the ignition is working.
6. If using a **2-pin mag pickup harness**, jump the two wires of connector together using a paperclip or jumper wire. Each time the connection is broken, a spark should jump to ground. This means the ignition is working.

If there was no spark:

- Install another coil and repeat the test
- Confirm there are 12 volts on the small red wire of the Go-Spark Advanced CDI when the ignition is on. Also make sure there is 12 volts on the red wire during cranking
- Inspect the rest of the wiring and grounds to ensure proper connections
- If there is still no spark, the ignition is likely in need of repair. Contact our tech support team to review the warranty or repair of your ignition.

NOTE: Solid Core spark plug wires cannot be used with an Go-Spark Advanced CDI.

NOTE: Do not use digital or dial back timing lights when checking ignition timing as they may not read accurately

NOTE: If running a EFI system, it is recommended to run resistor spark plugs. Resistor spark plugs are generally used on vehicles with onboard electronics to reduce the amount of EMI/RFI generated.

3-Year Limited Warranty on FiTech EFI Systems

FiTech extends the following limited warranty to the original purchaser of a FiTech EFI system purchased after November 1, 2022. FiTech warrants its products against defects in materials and workmanship, under normal use and service for 3 years from the date of original purchase. This applies only to the original purchaser and the parts must remain installed on the original vehicle for which they were purchased. This warranty is void if the product was improperly installed, was installed on a vehicle for which it was not designed, if it was modified in any manner, or was removed from the original vehicle and reinstalled on another vehicle. Coolant temperature sensors and oxygen sensors are not covered under this warranty.

This warranty shall not apply to any product installed improperly, or contrary to FiTech's instructions, altered, misused, repaired or damaged from an accident, collision, or willful or negligent act. To make a claim under the terms of this Warranty, the original purchaser must contact FiTech tech support. If FiTech tech support deems the product in need of warranty service, proof of original purchase will be required. Purchaser must **call FiTech Technical Support (951-340-2624) option 2 or email: Techmail@fitechefi.com**, to obtain a Returned Material Authorization (RMA). Proof of purchase must clearly show the place of purchase, purchase price, product purchased, and date of purchase. Purchaser needs to register their product here: <https://fitechefi.com/warranty-registration> or using the mail-in registration form found in the product box.

FiTech's 3-Year Limited Warranty does not cover factory refurbished parts, this warranty is only valid for new purchases from an authorized dealer.

FiTech's liability is expressly limited to replacing or repairing the defective part or parts (refunds are not covered under FiTech's 3-year Limited Warranty). FiTech will have no liability for the cost of installation or removal of the defective product or for the cost of labor or any additional parts required to complete the installation of the replacement product. FiTech is not responsible for any shipping charges accrued during the warranty process/claim.

In no event will FiTech be liable for any indirect, special, incidental, or consequential losses or damages (including but not limited to interruption of business or loss of business or profit) resulting from the use or inability to use the product, any breach of warranty, or any defect in the product, even if FiTech shall have been advised of the possibility of such potential damages or losses. Some states do not allow the exclusion or limitations

of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights. You may also have other rights which vary from state to state.

If the product is in the FiTech facility for repair, the amount of time the product is in repair will be added to the existing warranty period.

In the event that your EFI System that is under warranty is in for repair and FiTech has authorized a replacement, and if that EFI System has been discontinued, FiTech will replace it with a similar product for the same application. The replacement EFI System will maintain the existing warranty period of the original EFI System.

What is not covered under FiTech's 3-Year Limited Warranty:

- Offboard Sensors (oxygen sensors, and temperature sensors, are subjected to a 1-year limited warranty).
- Fuel pumps (Fuel pumps are subjected to a 1-year limited warranty. The customer must send photos of filters used in application. If the filter is completely clogged or contaminated, the fuel pump will not be covered under any FiTech warranty).
- Fire Damage.
- Cracked footings or flanges on the base of EFI units due to over-tightening or improper installation.
- Removal or replacement costs.
- Shipping costs.
- Damage to related components.
- Costs incurred due to downtime of a vehicle.
- Vehicle transport or storage costs.
- Any product used in marine applications unless specifically stated for marine usage.
- Any product purchased from an unauthorized third party (for example: Amazon, eBay, Craigslist, etc.)



WARNING: This product can expose you to chemicals including Chromium, Lead, Lead Compounds, Nickel (Metallic), Nickel Compounds, Diisonyl and Di(2-ethylhexyl) Phthalates (DEHP)(DINP) which are known to the State of California to cause cancer or birth defects or other reproductive harm. For more information, visit www.P65warnings.ca.gov.

INSTALLATION INSTRUCTIONS Go-Spark Advanced CD Ignition PN 91001 Rev B 0923 EL