

INSTALLATION INSTRUCTIONS for

Secondary Trigger

Owners Manual

PRODUCT OVERVIEW

The SECONDARY TRIGGER is designed to convert the high-voltage output of the OEM COIL into a trigger signal appropriate to tell Jacobs, Fire Control, and other manufacturers' ignition products the proper time to fire a spark. Therefore, the triggered ignition fires a spark at exactly the same time the OEM COIL generates its high-voltage output. There is NO TIMING CHANGE when using a SECONDARY TRIGGER.

There are several cases where the SECONDARY TRIGGER is required or desirable. It leads to the absolute simplest installation on OEM systems. In other cases, the OEM COIL is required to remain in operation by the vehicle's on-board computer, and the addition of aftermarket electronics would cause performance, driveability, or tachometer problems. This is especially true in late-model OBD II (On-Board Diagnostic) systems as well as many late model import vehicles. These situations require installation of a SECONDARY TRIGGER.

PRODUCT BACKGROUND

The SECONDARY TRIGGER works by supplying a trigger signal to the aftermarket ignition (on the green output wire) whenever it senses a high voltage signal from the OEM coil. This trigger signal is a 12 volt square wave signal identical to the type supplied by points or OEM electronic ignitions. This signal can only trigger aftermarket ignitions through a points or module type input, and CANNOT be used to trigger magnetic pickup inputs.

Along with the trigger signal, the SECONDARY TRIGGER also supplies a +12 volt KEY signal to turn on aftermarket ignitions. This signal is supplied after the SECONDARY TRIGGER senses 1 or 2 high voltage pulses from the OEM coil and ends within two seconds of the OEM ignition ceasing to fire. In this way the unit supplies a KEY signal to turn on aftermarket ignitions when the vehicle is started and turn them off when the engine is stopped. This key signal is capable of supplying up to 2 Amps of current for an aftermarket ignition, though most only require a fraction of an amp.

NOTE: THE +12 VOLT KEY WIRE IS ONLY TO BE HOOKED TO THE KEY INPUT OF AN AFTERMARKET IGNITION SYSTEM. DO NOT CONFUSE THIS WITH THE POSITIVE BATTERY LEAD ON THE IGNITION.

MOUNTING THE TRIGGER

The SECONDARY TRIGGER is fully encapsulated to help dissipate the heat generated by the high voltage signal and to protect the circuitry from water and other environmental hazards. When mounting the SECONDARY TRIGGER please choose an area away from sources or extreme heat and preferably mount to a flat metal surface. Please note that this unit can generate as much heat as a 10W lightbulb. Use the supplied hardware to mount the unit as shown in Figure 1 Below.

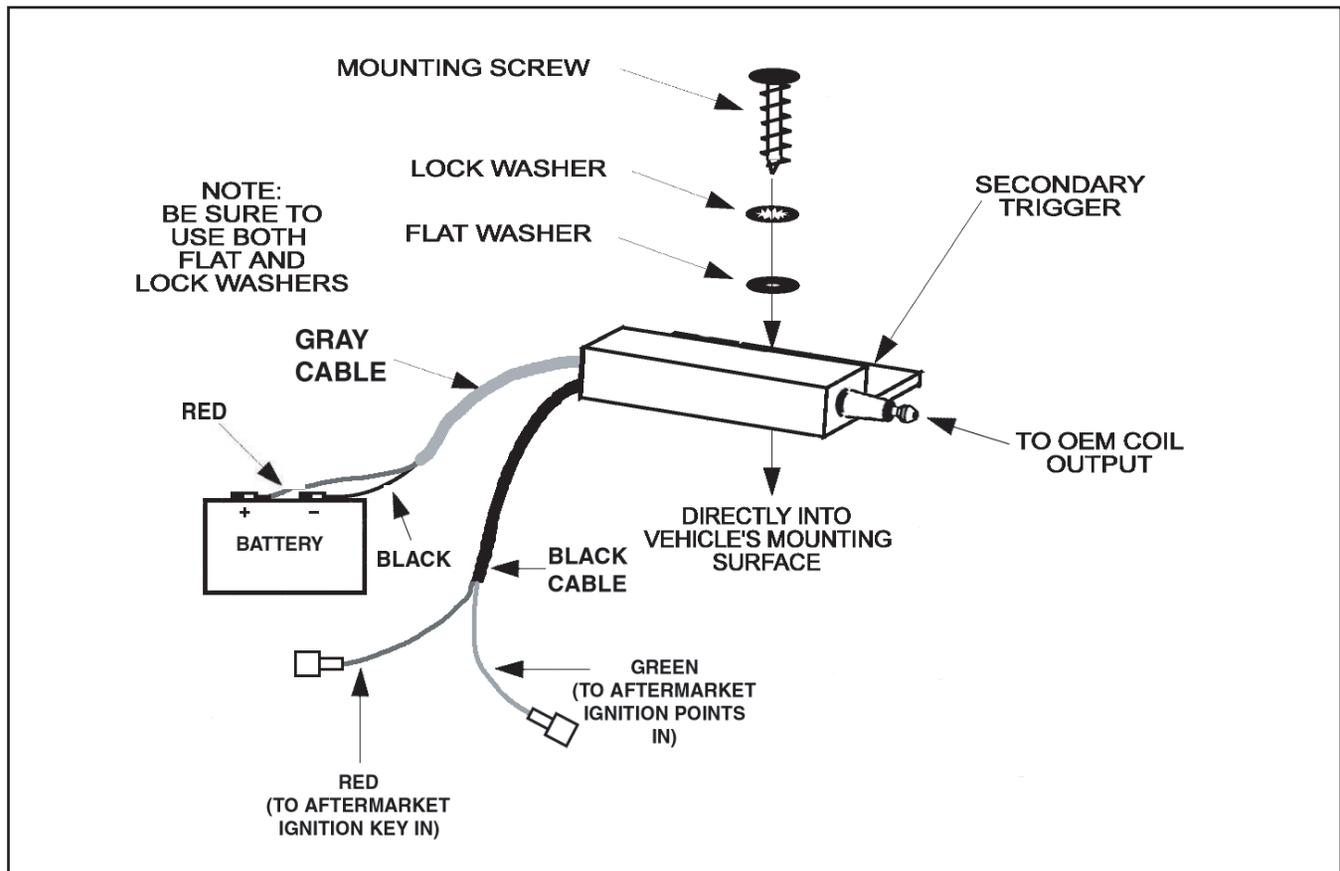


Figure 1. Mounting the Secondary Trigger

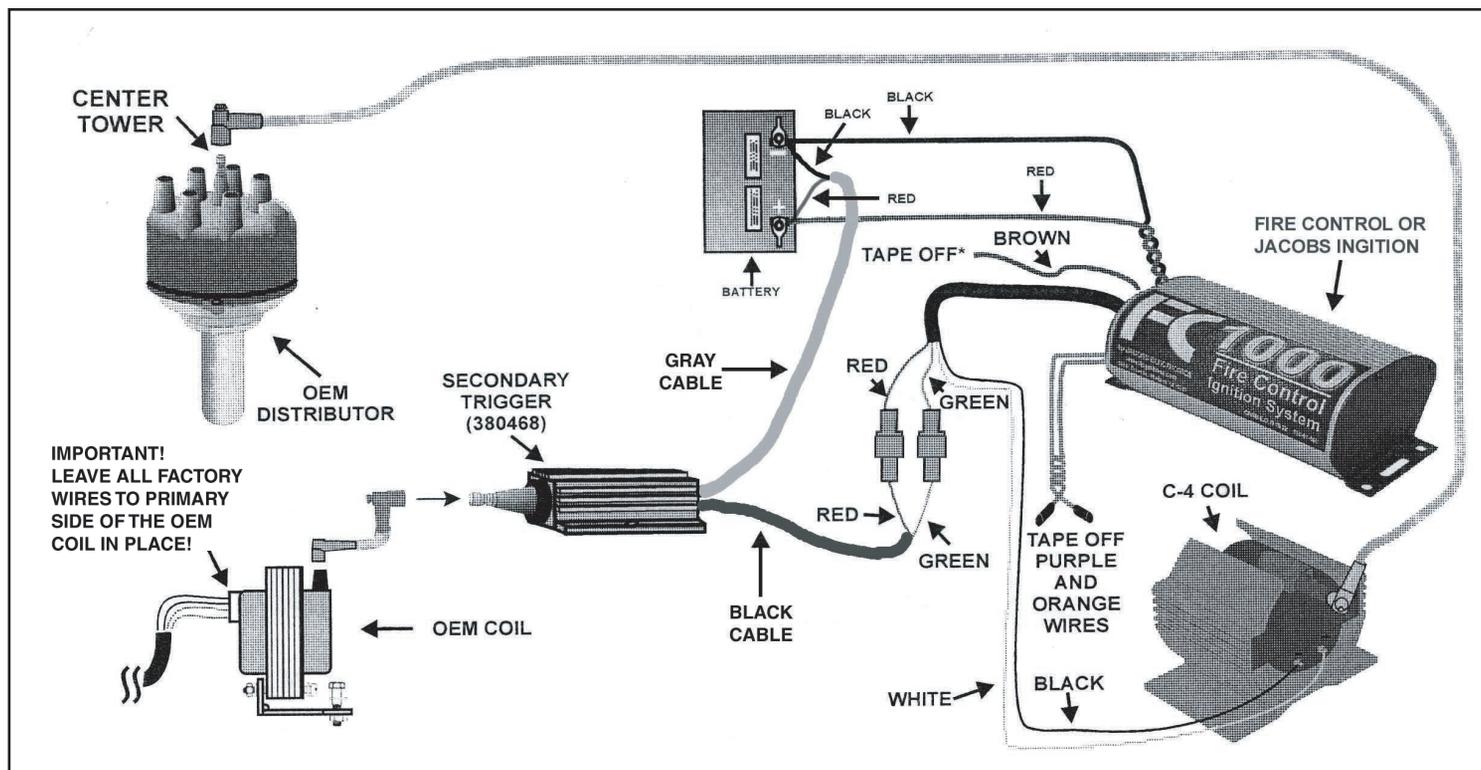


Figure 2. Connecting the Secondary Trigger to an Aftermarket Ignition System

ELECTRICAL CONNECTIONS

The red and black wires in the gray cable with ring terminals are the power wires responsible for supplying direct battery voltage to the SECONDARY TRIGGER and must remain connected to the battery at all times, (Red to Battery + Black to Battery -).

The red and green wires ending in insulated male slide terminals are the output wires which connect to an aftermarket ignition system. The red wire supplies a key output signal to an aftermarket ignition system. This wire is an output only and is used to switch on an aftermarket ignition system through the KEY input. It can supply up to 2 Amps of current and should never be used to supply power to an aftermarket systems' positive battery connection. The slide terminal allows easy connection to a Jacobs or Fire Control ignitions' key in (red) wire. The green wire supplies a points or electronic ignition module type signal to an aftermarket ignition systems' trigger (points or module in) wire. Do not use this wire to drive a magnetic pickup type input. The slide terminal allows easy connection to a Jacobs or Fire Control ignitions' points in (green) wire.

The final connection required is the connection between the high voltage tower of the SECONDARY TRIGGER and the OEM coil. Unplug the factory coil wire from the distributor and plug into the high voltage terminal of the SECONDARY TRIGGER. If the end of the coil wire does not have the correct end to plug into the SECONDARY TRIGGER, cut off the factory end and crimp the supplied boot and terminal to the factory wire (see Figure 3.) If the OEM coil wire is too short, or modification of it is undesirable, Jacobs offers a trigger wire kit (Jacobs' PN 400543) with an assortment of ends that will allow greater length and ease of installation.

Summary of Electrical Connections

Gray Cabled Red & Black with 3/8" Rings	RED: Connect to Battery + BLACK: Connect to Battery -
Black Cabled Red & Green with slide terminals	RED: KEY OUTPUT. Connect to SWITCHED OR KEY INPUT of aftermarket ignition System GREEN: TRIGGER OUTPUT. Connect to POINTS OR MODULE IN of aftermarket ignition System
High Voltage Tower	Connect to OUTPUT of OEM coil using existing high voltage coil wire or Jacobs PN 400543.

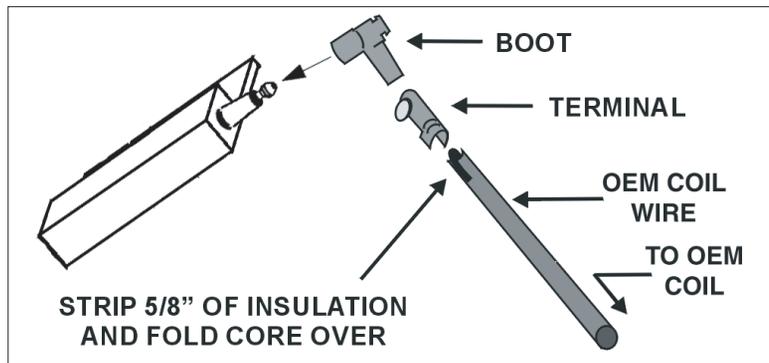


Figure 3. Installation of coil wire using included boot and terminal

TROUBLESHOOTING

CHECK OEM SYSTEM FIRST

Remove the SECONDARY TRIGGER and aftermarket ignition system by disconnecting the high voltage coil wire from the SECONDARY TRIGGER and the high voltage wire from the center of the distributor cap. Next, connect the original coil wire between the OEM coil and the center terminal of the distributor. If the engine will not run in this original configuration, the problem is in the OEM system and is not caused by the SECONDARY TRIGGER or aftermarket ignition system.

CHECK FOR PROPER KEY OUTPUT SIGNAL

Reconnect the SECONDARY TRIGGER and aftermarket ignition system as shown on page 3, Figure 2. Using a voltmeter or test light, place one probe (black or ground) to a ground source and the other probe (red or positive) to the red KEY OUTPUT wire (red in black cable) coming from the SECONDARY TRIGGER. (Note, the insulated slide terminal on the KEY OUTPUT from the SECONDARY TRIGGER will need to be disconnected from the aftermarket ignition system for this test. Because of this the engine will not start.) Crank the engine and verify that at least +12 volts are present on the KEY OUTPUT wire during cranking. If not, check all power connections as well as the high voltage connection to the OEM coil.

CHECK FOR TRIGGER OUTPUT SIGNAL

Using a voltmeter or test light, place one probe (red or positive) to battery positive and the other probe (black or negative) to the TRIGGER OUTPUT wire (green in black cable) coming from the secondary trigger. (Note, the insulated slide terminal on the TRIGGER OUTPUT from the SECONDARY TRIGGER will need to be disconnected from the aftermarket ignition system for this test. Because of this the engine will not start.) Crank the engine and verify that there is an "on-off" signal on this wire. This should cause the test light to flicker, or the voltmeter display or needle to flicker rapidly. If there is no such signal, check all power connections as well as the high voltage connection to the OEM coil.

IF YOU NEED HELP

WITH WARRANTY INFORMATION, TECHNICAL INFORMATION OR INSTALLATION ASSISTANCE:

CALL 216.688.8300 x 5

M-F 8:00 AM - 5:00 PM EST



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