

# **INSTALLATION INSTRUCTIONS**

## **6EFI UNIVERSAL EFI IGNITION BOX PN 6415**

**ONLINE PRODUCT REGISTRATION:** Register your MSD product online. Registering your product will help if there is ever a warranty issued with your product and helps the MSD R&D team create new products that you ask for! Go to [www.msperformance.com/registration](http://www.msperformance.com/registration)

### **Parts Included:**

1 – Ignition	1 – 18” Ground Wire	4 – Mounting Screws
1 – Harness, PN8860	1 – 100V/1A Diode	

**WARNING:** During installation, disconnect the battery cables. When disconnecting the battery always remove the Negative cable first and install it last.

**Note:** Solid Core spark plug wires cannot be used with the Universal EFI Ignition.

**Note:** The Universal EFI Ignition cannot be used with distributorless ignition systems (DIS).

### **GENERAL INFORMATION**

#### **BATTERY**

The Universal EFI Ignition box will operate on any negative ground, 12 volt electrical system with a distributor. It can be used with 16 volt batteries and can withstand a momentary 24 volts in case of jump starts. The Ignition will deliver full output with a supply of 9 - 18 volts and will operate with a supply voltage as low as 7 volts.

#### **COILS**

The Universal EFI Ignition can be used with most stock coils and aftermarket coils designed to replace the stock coils. If you have any questions concerning coils, contact our Customer Service Department at (915) 855-7123.

#### **TACHOMETERS**

The Universal EFI Ignition features a Tach Output wire that provides a trigger signal for tachometers, a shift light or other add-on rpm activated devices. The Tach Output produces a 12 volt square wave signal with a 24% duty cycle. Some vehicles with factory tachometers may require a Tach Adapter to operate with the ignition. For more information on Tachometers and MSD Tach Adapters, see the Tachometer Section on page 16. If your GM vehicle has an inline filter it may cause the tach to drop to zero on acceleration. If this occurs, bypass the filter.

## SPARK PLUGS AND WIRES

Spark plug wires are very important to the operation of your ignition system. A good quality, helically wound, suppression-type wire and proper routing are required to get the best performance from your ignition, such as the super conductor MSD spark plug wires.

**Note:** Solid Core spark plug wires cannot be used with the Universal EFI Ignition.

**Spark Plugs:** Choosing the correct spark plug design and heat range is important when trying to get the best performance possible. 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. The gap of the plugs can be opened in 0.005" increments, then tested until the best performance is obtained.

## MISCELLANEOUS INFORMATION

**Sealing:** Do not attempt to seal the ignition. All of the circuits of the Universal EFI ignition receive a thick conformal coating of Humi-Seal. Rubber plugs are supplied to protect the rpm dials.

**Welding:** If you are welding on your vehicle, to avoid the chance of damage, always disconnect both Heavy Power cables of the ignition (You should also disconnect the tach ground wire).

## MOUNTING

The Universal EFI Ignition can be mounted in most positions, except directly upside down (if upside down, moisture or water cannot escape). It can be mounted in the engine compartment as long as it is away from direct engine heat sources. 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, make sure the wires of the ignition reach their connections.

Hold the Ignition in place and mark the location of the mounting holes. Use an 1/8" drill bit to drill the holes. Use the supplied self tapping screws to mount the box.

## CYLINDER SELECT

The Rev Limiter that is built into the ignition is programmed for operation on a 8-cylinder engine. If you are installing one of these units on a 4 or 6-cylinder even-fire engine, the cylinder count must be selected. This is easily achieved through the cylinder select wire loops on the side of the ignition. To program the unit cut the loops as shown in Figure 1.

## LED

There is a diagnostic LED next to the rpm dials. The LED will blink with each trigger signal. It will appear On when the engine is running. If the input voltage drops below 9 volts it will flash at idle speed. For more codes, see page 17.

## WIRING

**Wire Length:** All of the wires of the ignition may be shortened as long as quality connectors are used or soldered in place. To lengthen the wires, use one size bigger gauge wire (10 gauge for the power leads and 16 gauge for the other wires) with the proper connections.

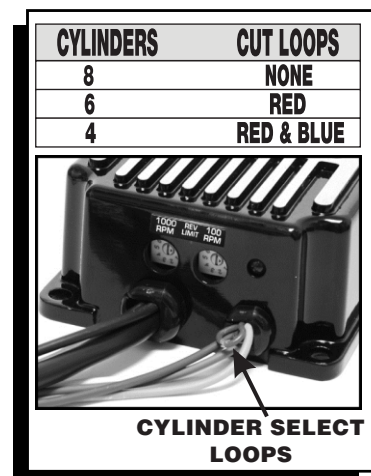


Figure 1 Selecting the number of cylinders.

**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.

**WIRE FUNCTIONS**

<b>POWER LEADS</b>	These are the two heavy gauge wires (14 gauge) and are responsible for getting direct battery voltage to the Ignition.
<b>HEAVY RED</b>	This wire connects directly to the battery positive (+) terminal or to a positive battery junction or the positive side of the starter solenoid. <b>Note:</b> Never connect to the alternator.
<b>HEAVY BLACK</b>	This wire connects to a good ground, either at the battery negative (-) terminal or to the engine.
<b>RED</b>	Connects to a switched 12 volt source. Such as the ignition key or switch.
<b>ORANGE</b>	Connects to the positive (+) terminal of the coil. <b>This is the only wire that makes electrical contact with the coil positive terminal.</b>
<b>BLACK</b>	Connects to the negative (-) terminal of the coil. <b>This is the only wire that makes electrical contact with the coil negative terminal.</b>
<b>GRAY</b>	Tach output wire. Connect to the tachometer or other rpm device.
<b>TRIGGER WIRES</b>	There are two circuits that can be used to trigger the Universal EFI Ignition; a Points circuit (White wire) and a Magnetic Pickup circuit (Violet and Green wires). The two circuits will <b>never</b> be used together.
<b>WHITE</b>	This wire is used to connect to the points or electronic ignition amplifier output .
<b>VIOLET AND GREEN</b> (Magnetic Pickup Connector)	These wires are routed together in one harness to form the Magnetic Pickup connector. The connector plugs directly into an MSD Distributor. It will also connect to factory magnetic pickups or other aftermarket pickups. The Violet wire is positive (+) and the Green is negative (-). <b>When these wires are used, the White wire is not.</b>

The chart in Figure 2 shows the polarity of other common magnetic pickups.

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

**ROUTING WIRES**

The spark plug wires should be routed away from direct heat sources such as exhaust manifolds and headers and any sharp edges. The trigger wires should be routed separate from the other wires and spark plug wires. It is best if they 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.

Common Mag Pickup Wires		
	Colors	
	Mag+	Mag-
MSD Distributor	Org/Blk	Vio/Blk
MSD Crank Trigger	Violet	Green
Ford	Orange	Violet
Accel <sup>46/48000</sup> Series	Org/Blk	Vio/Blk
Accel <sup>51/61000</sup> Series	Red	Black
Chrysler	Org/Wht	Black
Mallory	Org/Blk	Vio/Blk

Figure 2 Common Mag Pickup Wires.

**WARNING:** The Universal EFI Ignition is a capacitive discharge ignition. High voltage is present at the coil primary terminals. Do not touch the coil or connect test equipment to the terminals.

## REV LIMITER

The Universal EFI Ignition features an adjustable rev limiter. This feature will protect your engine from over rev damage in the event of driveline failure or a missed gear. The rev limit is adjustable from 2,000 - 9,900 rpm in 100 rpm increments (Figure 3).

## PRESTART CHECK LIST

- The only wires connected to the coil terminals are the Universal EFI Ignition Orange to coil positive and Black to coil negative.
- The small Red wire of the CDI is connected to a switched 12 volt source.
- If running a 4 or 6-cylinder engine the cylinder select must be modified.
- The power leads are connected directly to the battery positive and negative terminals.
- The battery is connected and fully charged if not using an alternator.
- The engine is equipped with at least one ground strap to the chassis.

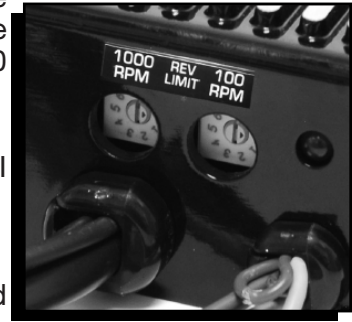


Figure 3 Adjusting the Rev Limiter.

## TIMING CONTROL

Some EFI systems have the ability to control the engine's ignition timing, however, an adjustable rotor is required to use this feature. For initial startup, it is recommended to bypass the timing control features. This will allow you to start the engine and tune the EFI to your engine.

MSD recommends that those who wish to use the timing control feature first get the engine to run without timing control. Splitting the timing control into a secondary process will add very little time to the total install, but could significantly help with trouble shooting, should it be needed.

The following are a list of items that are required to use the timing features of the some EFI systems:

- An MSD Ignition control such as a 6EFI Universal EFI, 6A or 6AL Ignition
- The distributor must be locked-out
- An adjustable rotor is required to achieve accurate rotor phasing. For standard GM size MSD distributors, use rotor PN 84211. For larger, Ford style MSD distributors it is recommended to fit the distributor with a smaller cap (PN 8433) and the PN 84211 rotor. If the larger cap must be used, try rotor PN 8421.
- It is recommended but not required to use an MSD Pro Billet Distributor with a 2-pin mag pickup connector.
- The balancer must be degreed, or use MSD Timing Tape, PN 8985
- A timing light will be required.

## PREPARATION FOR TIMING CONTROL

Before removing the distributor, bring the number one cylinder to approximately 15° BTDC on the compression stroke.

1. Remove the distributor cap and note the position of the rotor. You will be removing the distributor to lock it out, this will be your reference position for the number one cylinder.
2. Remove the distributor clamp and pull the distributor out of the engine.
3. If you are using an MSD Distributor (recommended), follow the steps below to lock-out the mechanical timing.
  - a. Remove the advance components including the springs, weights and the advance stop bushing from the advance assembly.
  - b. Remove the roll-pin from the drive gear and remove the gear from the housing shaft (except on Fords).
  - c. Slide the shaft two inches out of the housing.
  - d. Rotate the shaft 180° and insert the advance stop bushing pin into the small hole on the advance plate (Figure 4).

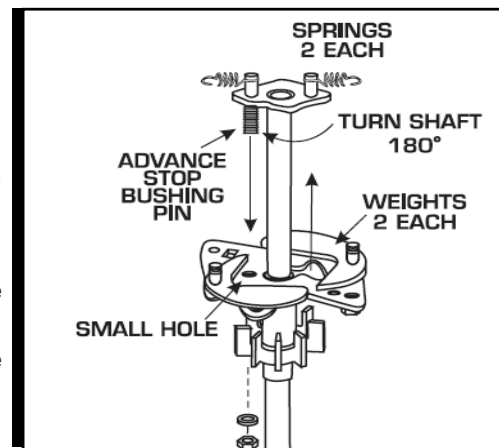


Figure 4 Locking Out the Advance.

- e. Install the locknut and washer to the advance stop bushing pin. This locks the advance in place.
- f. Put the shaft back in the housing
- g. Install the drive gear and roll-pin.

4. Some applications will require the vacuum advance be removed. Please see Appendix A for a complete list of distributors. If your vacuum advance needs removed and locked out, use the following steps.

- a. Remove the two Allen head screws that hold the advance canister.
- b. Remove the snap ring that holds the magnetic pickup assembly in place.
- c. Gently lift up on the mag pickup plate and slide the vacuum canister out.
- d. Install the Lockout Plate in place of the canister. Install the two retaining screws.
- e. Install the supplied screw and washer through the Lockout and tighten.
- f. It is important to make sure the pickup plate is parallel with the housing of the distributor (Figure 5). If it is cocked or slanted, the paddles of the reluctor may contact the pickup.
- g. Check the clearance by rotating the distributor shaft. If necessary, use the supplied shims under the Lockout hold-down to correctly position the pickup plate.

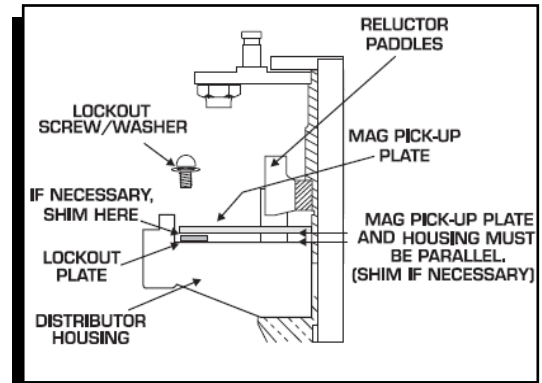


Figure 5 Checking Installations of the Lockout Plate

**Note:** If no shims were required, use one beneath the washer of the Lock-Out Hold Down Screw.

**INSTALL THE ADJUSTABLE ROTOR**

- 1. Install the new adjustable rotor (MSD PN 84211 or PN 8421).
- 2. Set the phasing of the adjustable rotor based on the information below.

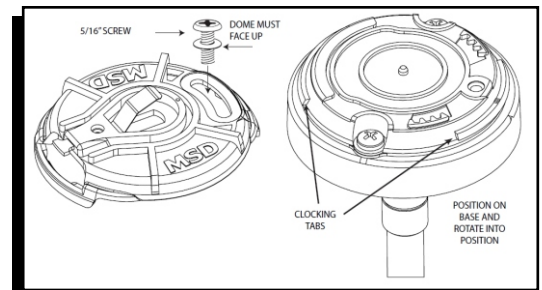


Figure 6 Checking Installations of the Lockout Plate

**ROTOR PHASING**

To phase your rotor properly to control ignition timing, set it retarded (opposite normal distributor shaft rotation) at 15° on the rotor indicator. Remove and lockout the vacuum advance, if applicable, on all distributors except Fords\*.

\* Distributor PN 8573 will need the vacuum canister removed and locked out.

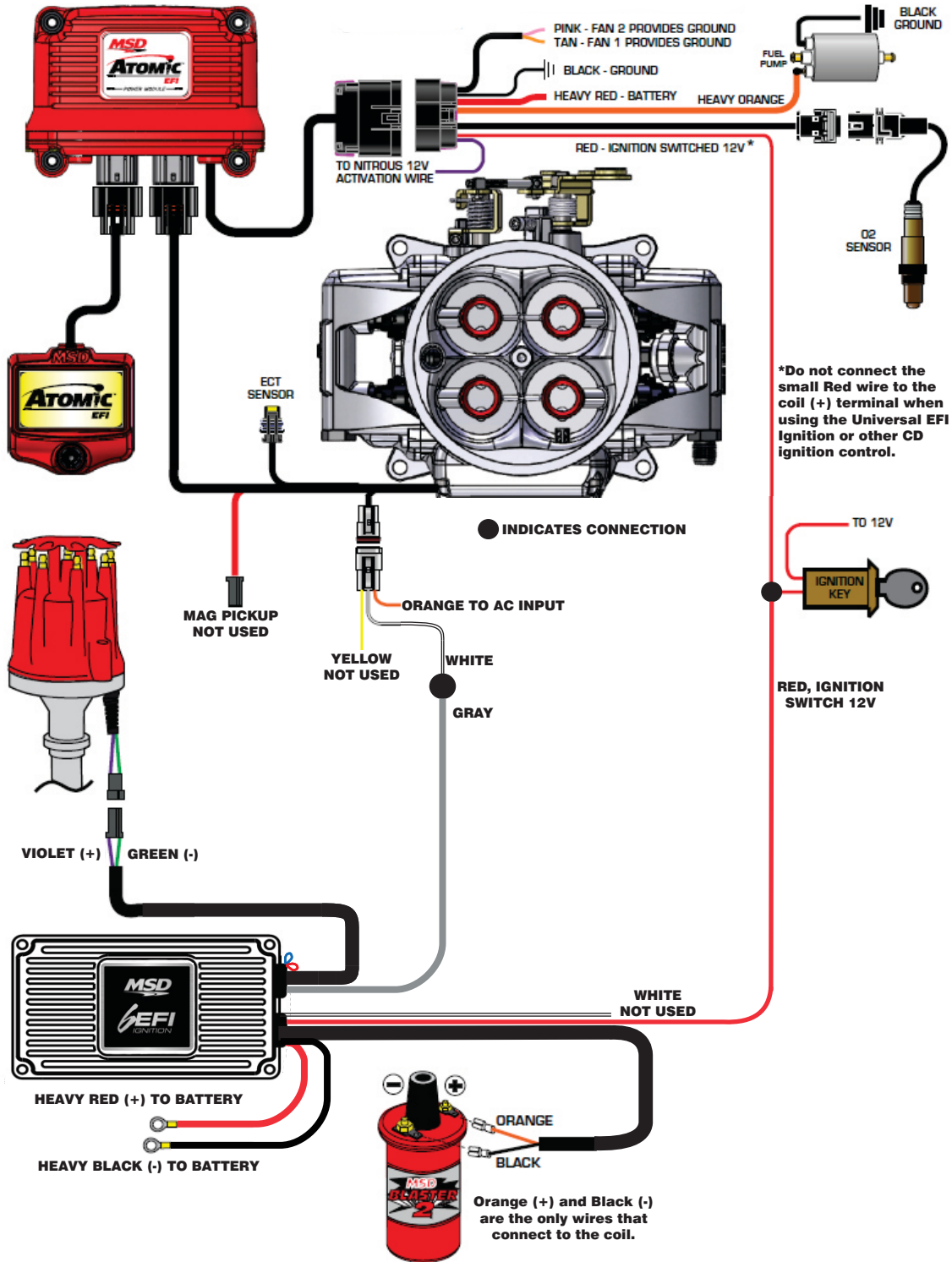
Distributors PN 8386 and 8387 keep the vacuum canister in place. Please see Appendix A for a complete list of our distributors, the required adjustable rotor, and other applicable notes.

**INSTALL THE DISTRIBUTOR**

- 1. Position the engine at 15° Before Top Dead Center (BTDC).
- 2. Install the distributor making sure the rotor comes to rest pointing at the number one terminal of the distributor cap.
- 3. Tighten the distributor clamp – but leave it so the distributor can be moved.
- 4. Connect the distributor’s magnetic pickup to the matching connector on the throttle body.
- 5. Install the cap and spark plug wires.
- 6. Follow the wiring diagrams (pages 6 -15) based on your application.

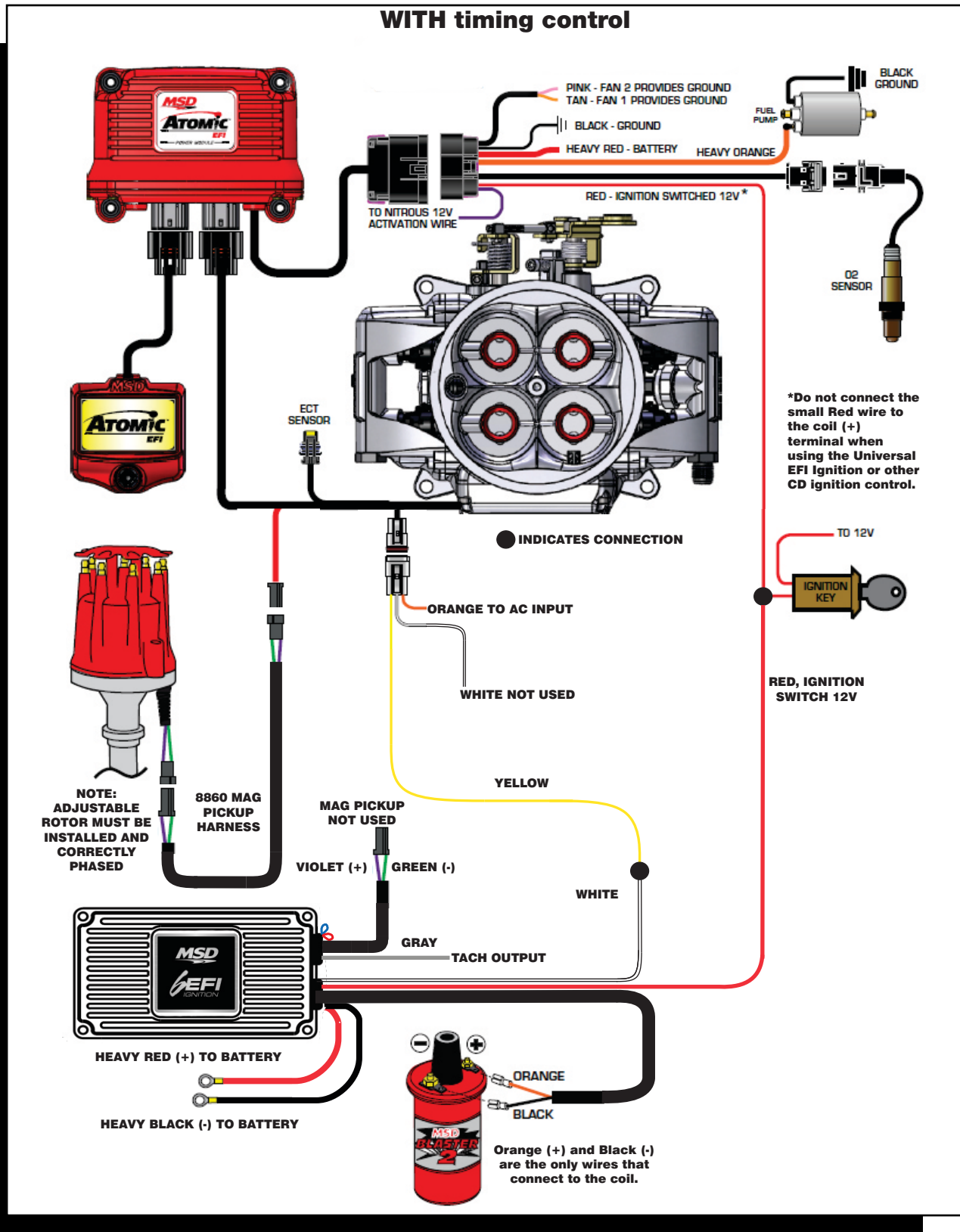
# 6EFI UNIVERSAL IGNITION Installing to MSD Atomic EFI TBI

## NO timing Control



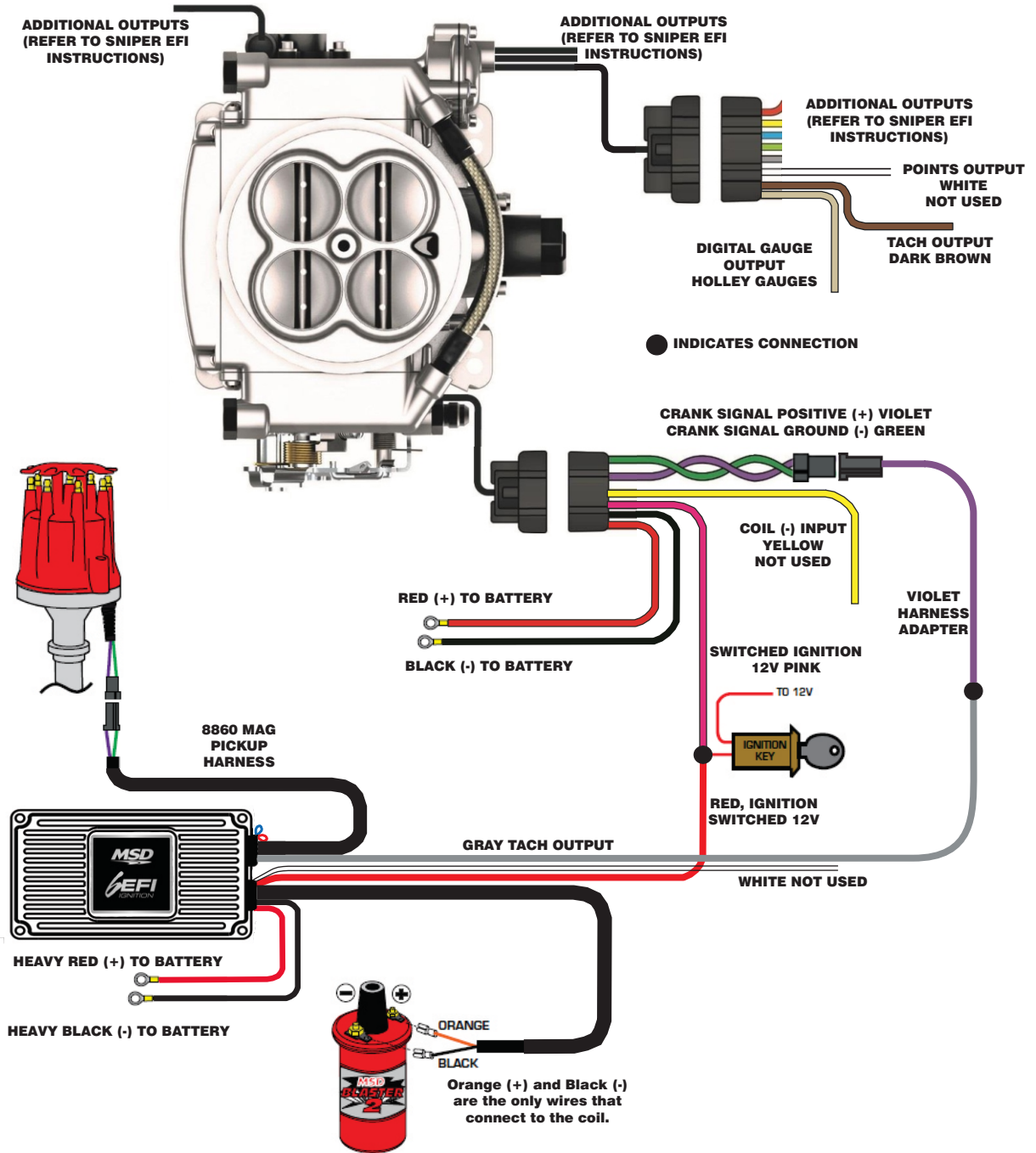
**6EFI UNIVERSAL IGNITION Installing to MSD Atomic EFI TBI**

**WITH timing control**



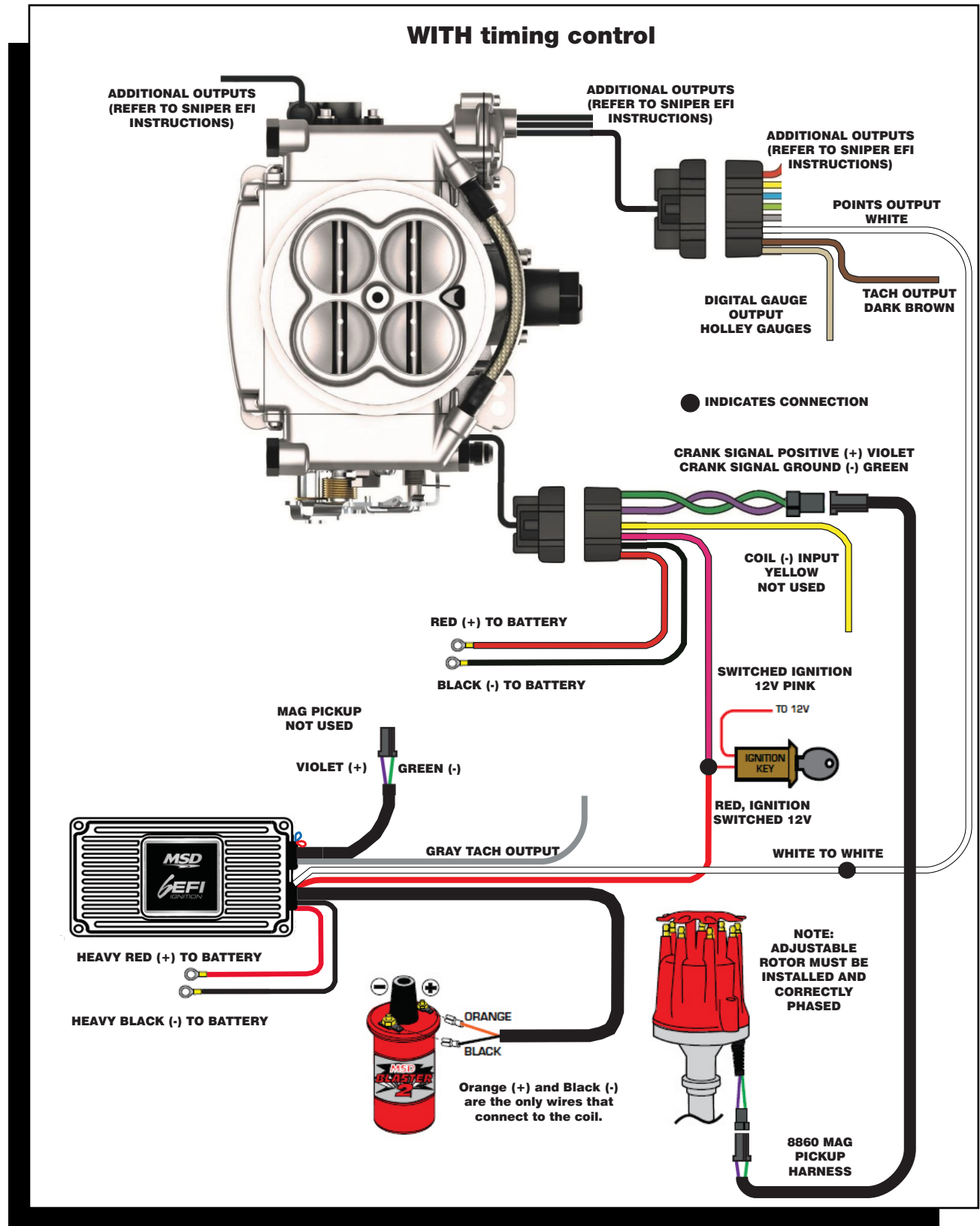
# 6EFI UNIVERSAL IGNITION Installing to HOLLEY SNIPER EFI

## NO timing control



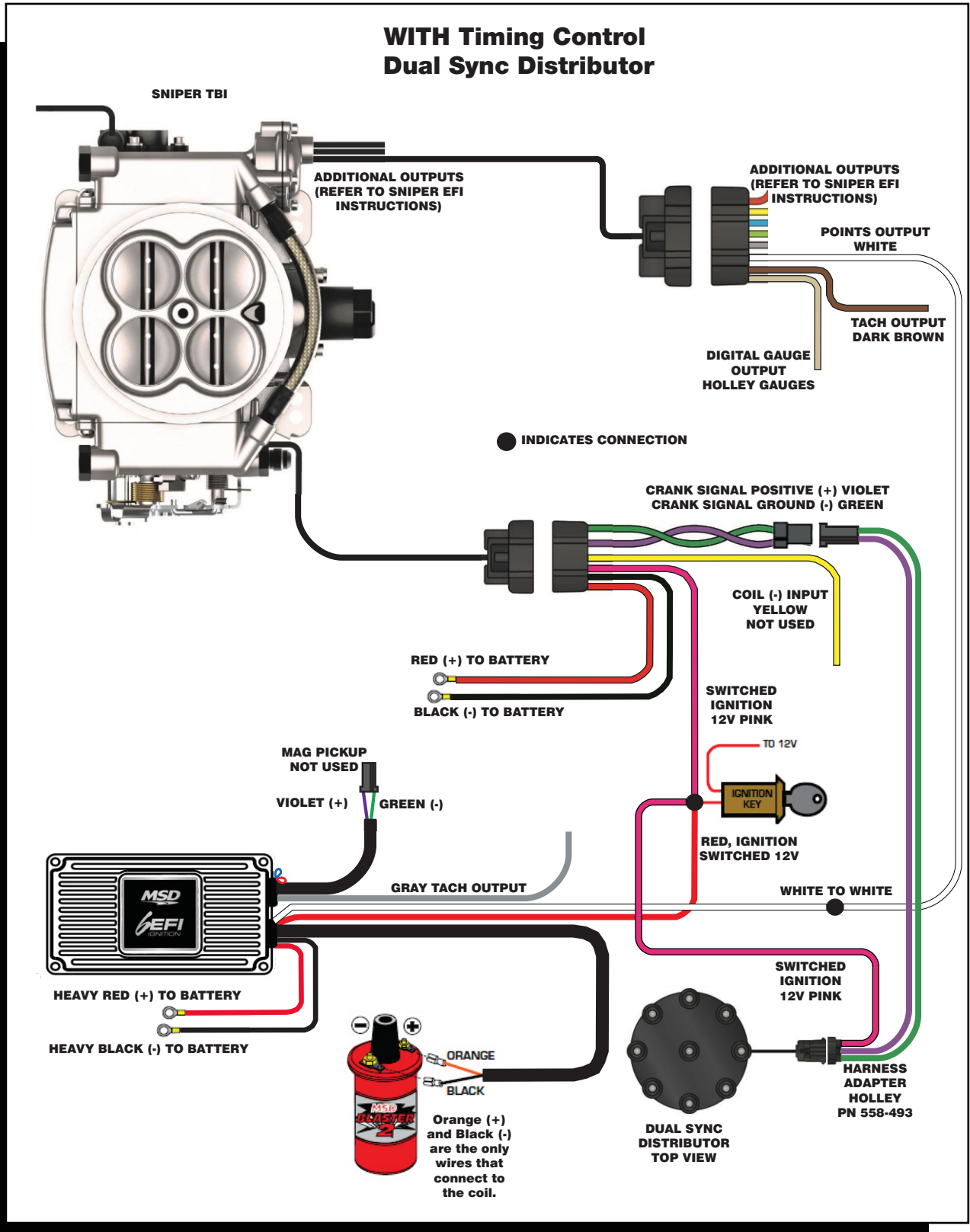


**6EFI UNIVERSAL IGNITION Installing to HOLLEY SNIPER EFI**

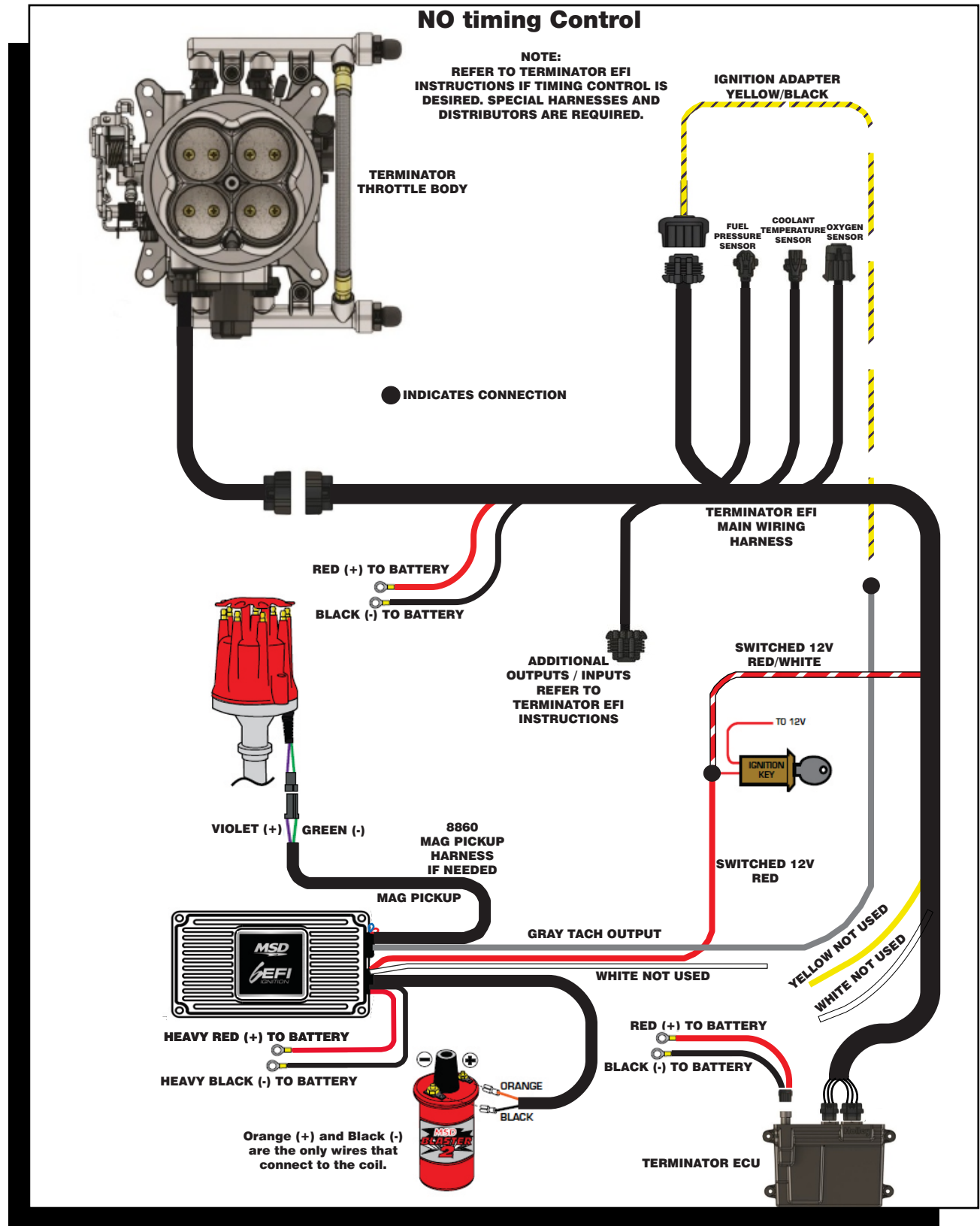


# 6EFI UNIVERSAL IGNITION Installing to HOLLEY SNIPER EFI

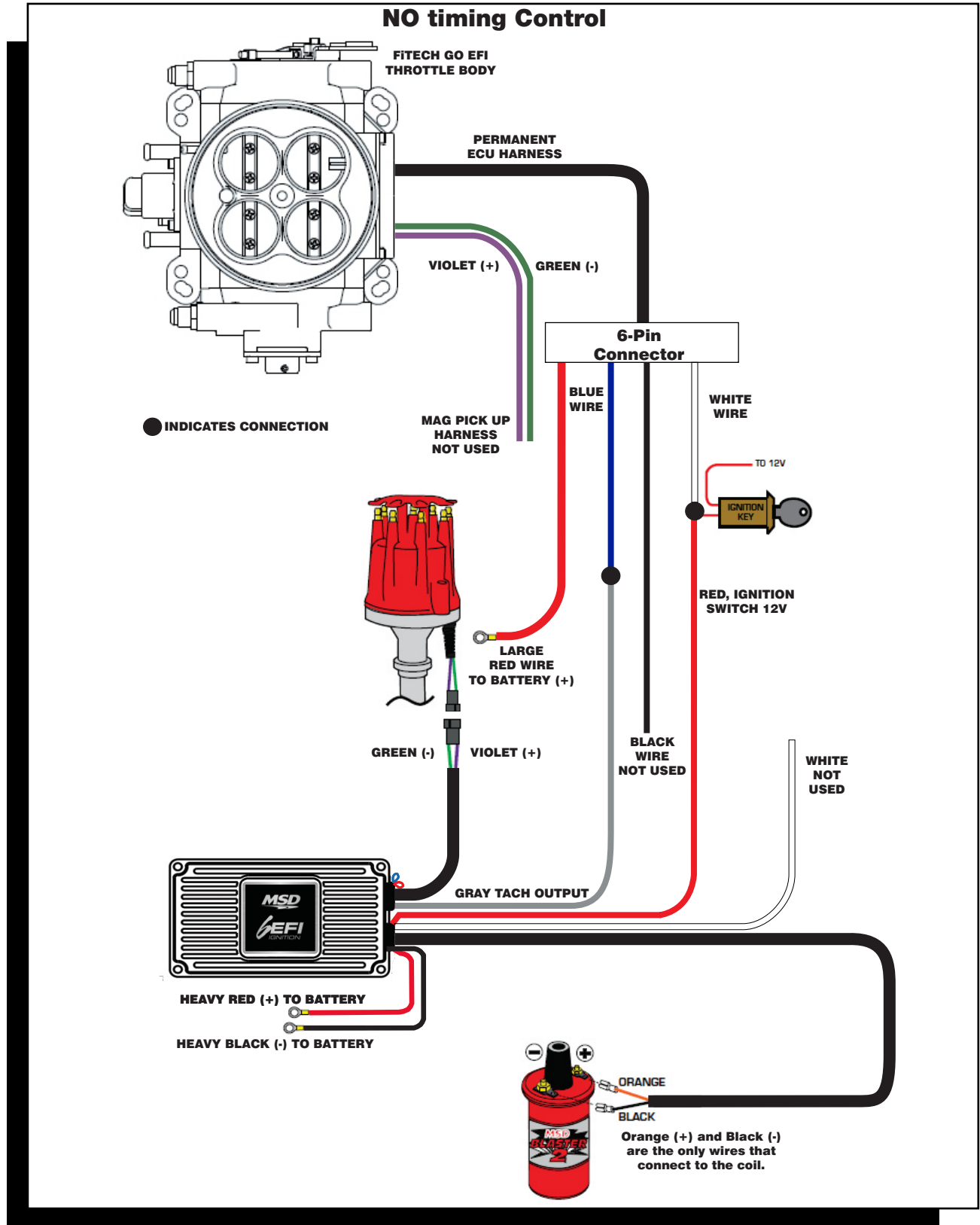
## WITH Timing Control Dual Sync Distributor



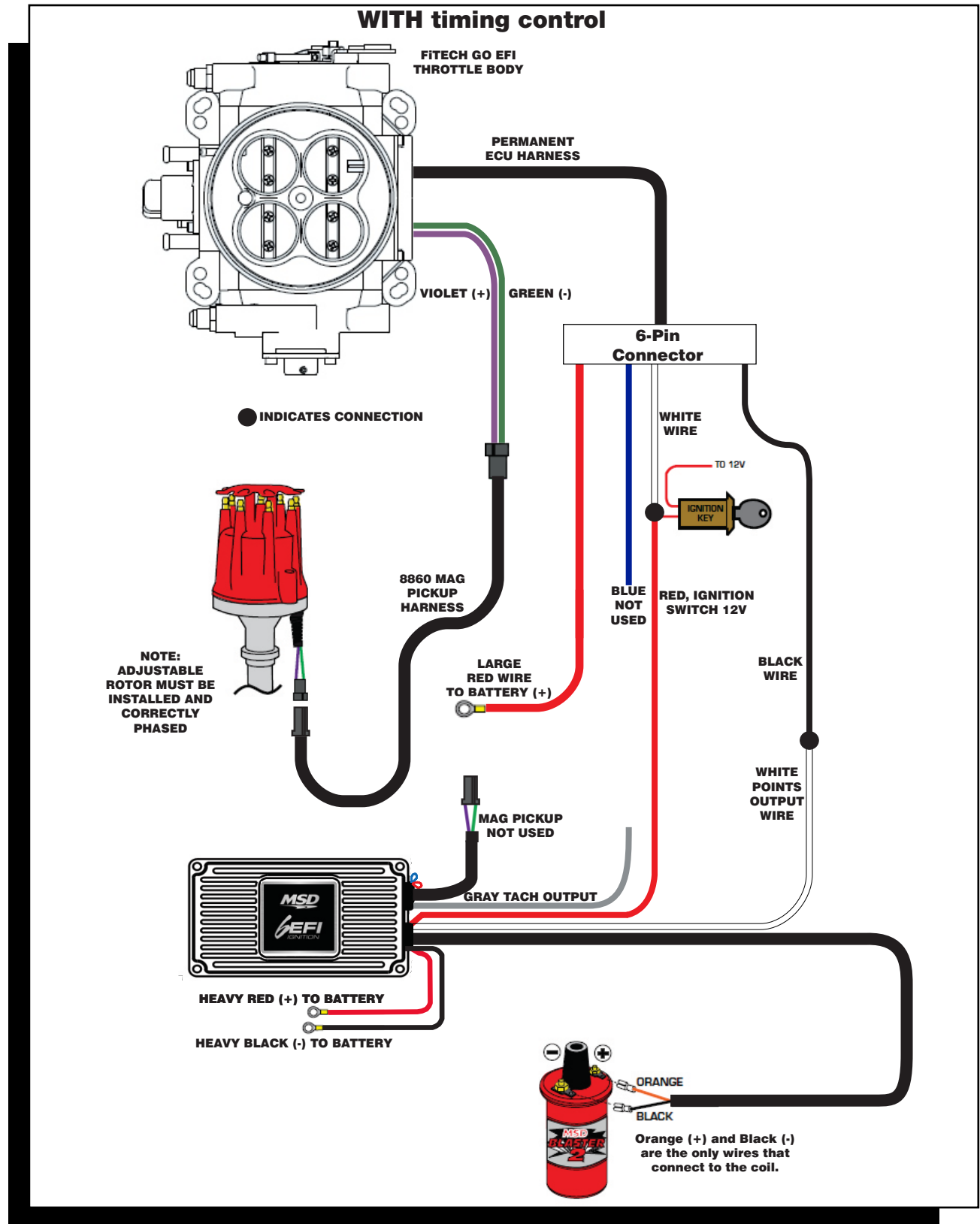
**6EFI UNIVERSAL IGNITION Installing to HOLLEY TERMINATOR EFI**



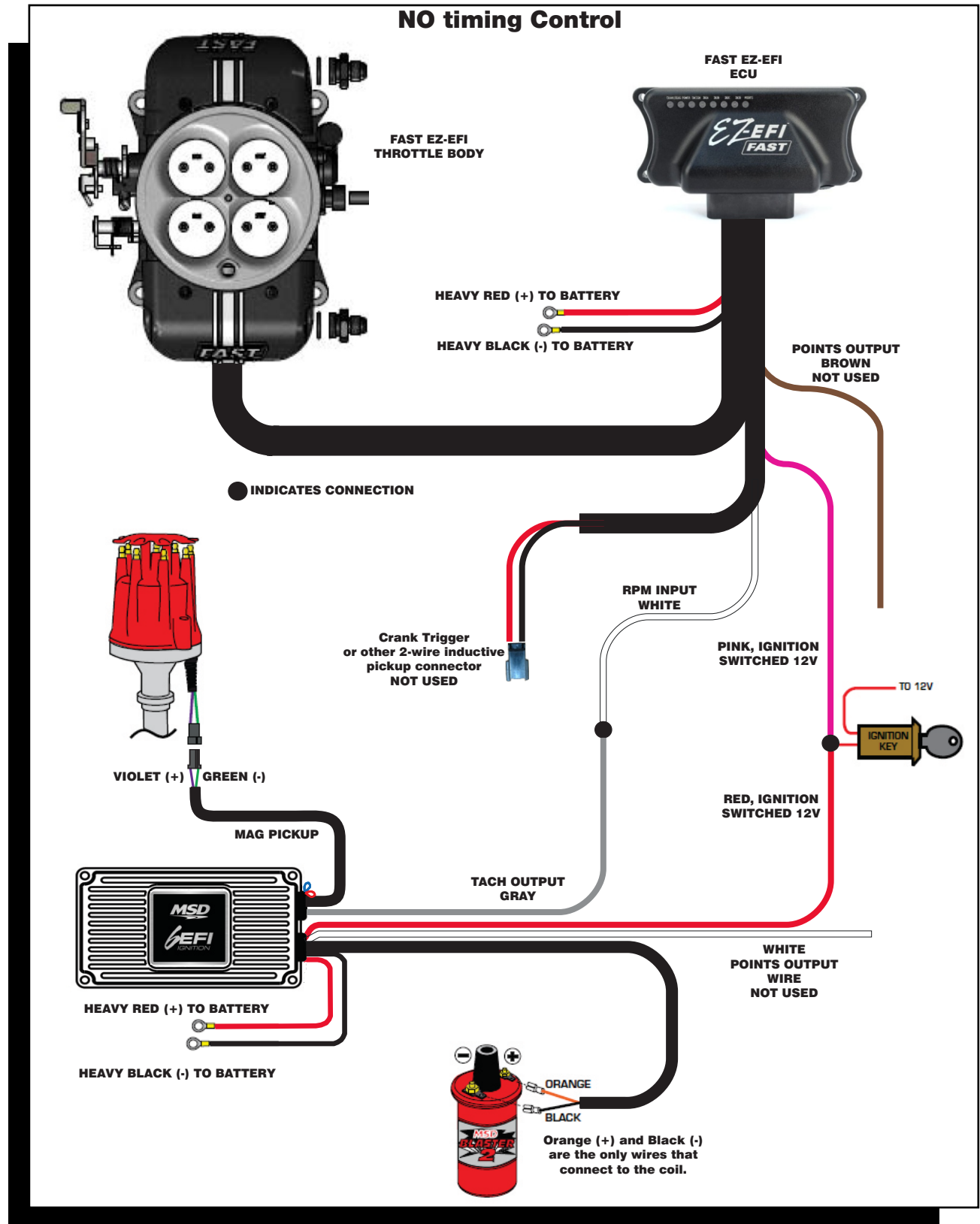
### 6EFI UNIVERSAL IGNITION Installing to FiTECH GO EFI



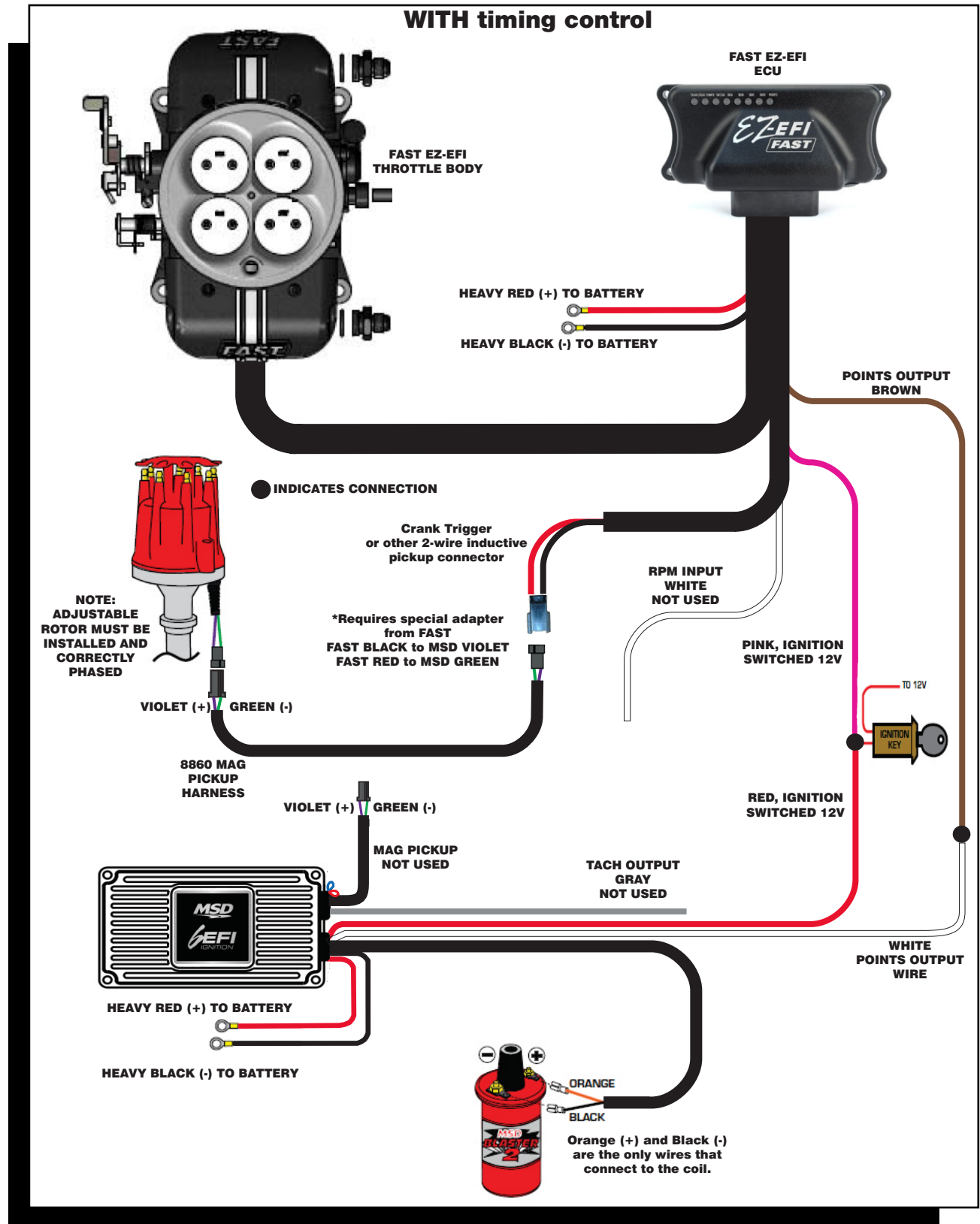
**6EFI UNIVERSAL IGNITION Installing to FiTECH GO EFI**



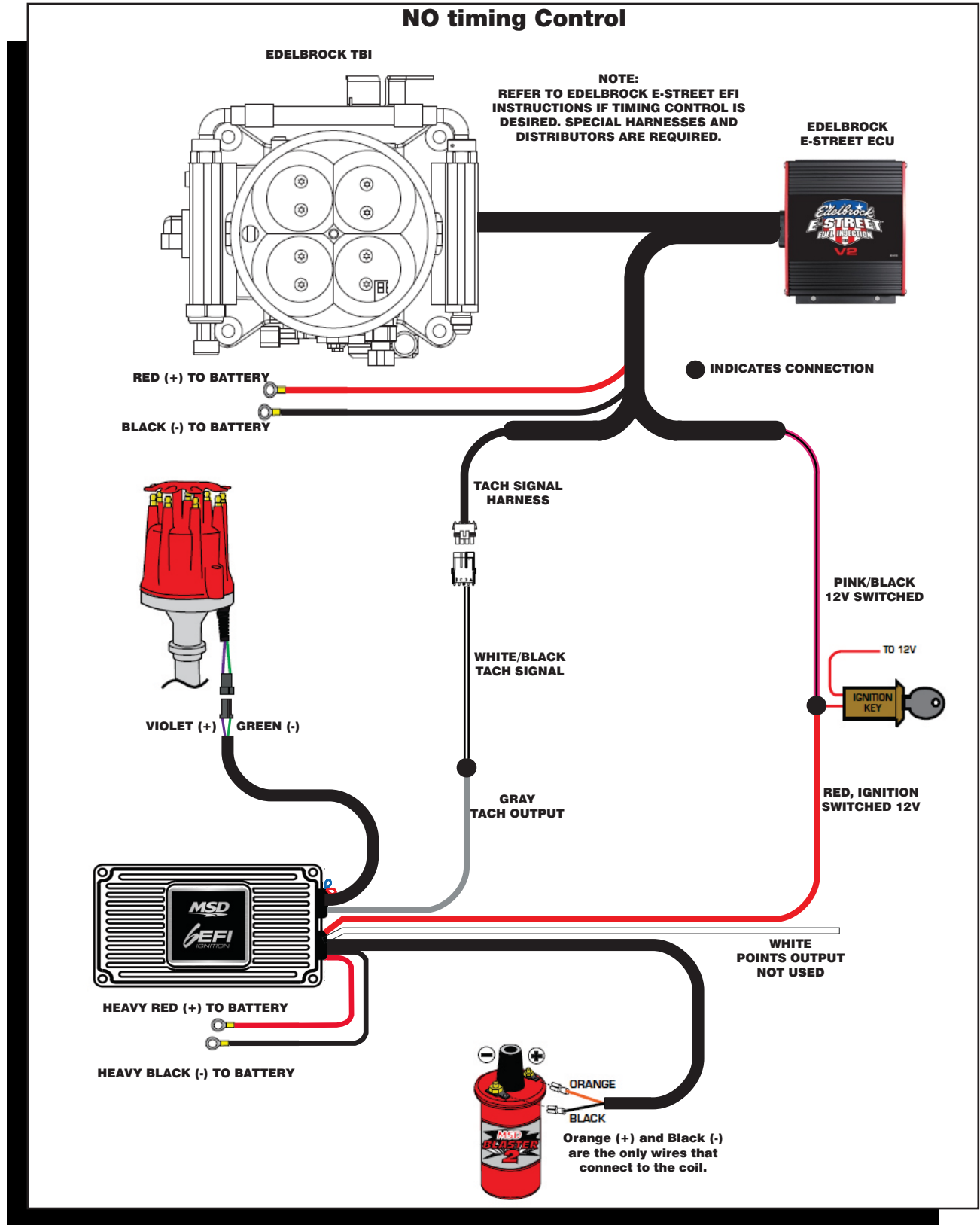
**6EFI UNIVERSAL IGNITION Installing to Fast EZ-EFI**



**6EFI UNIVERSAL IGNITION Installing to Fast EZ-EFI**

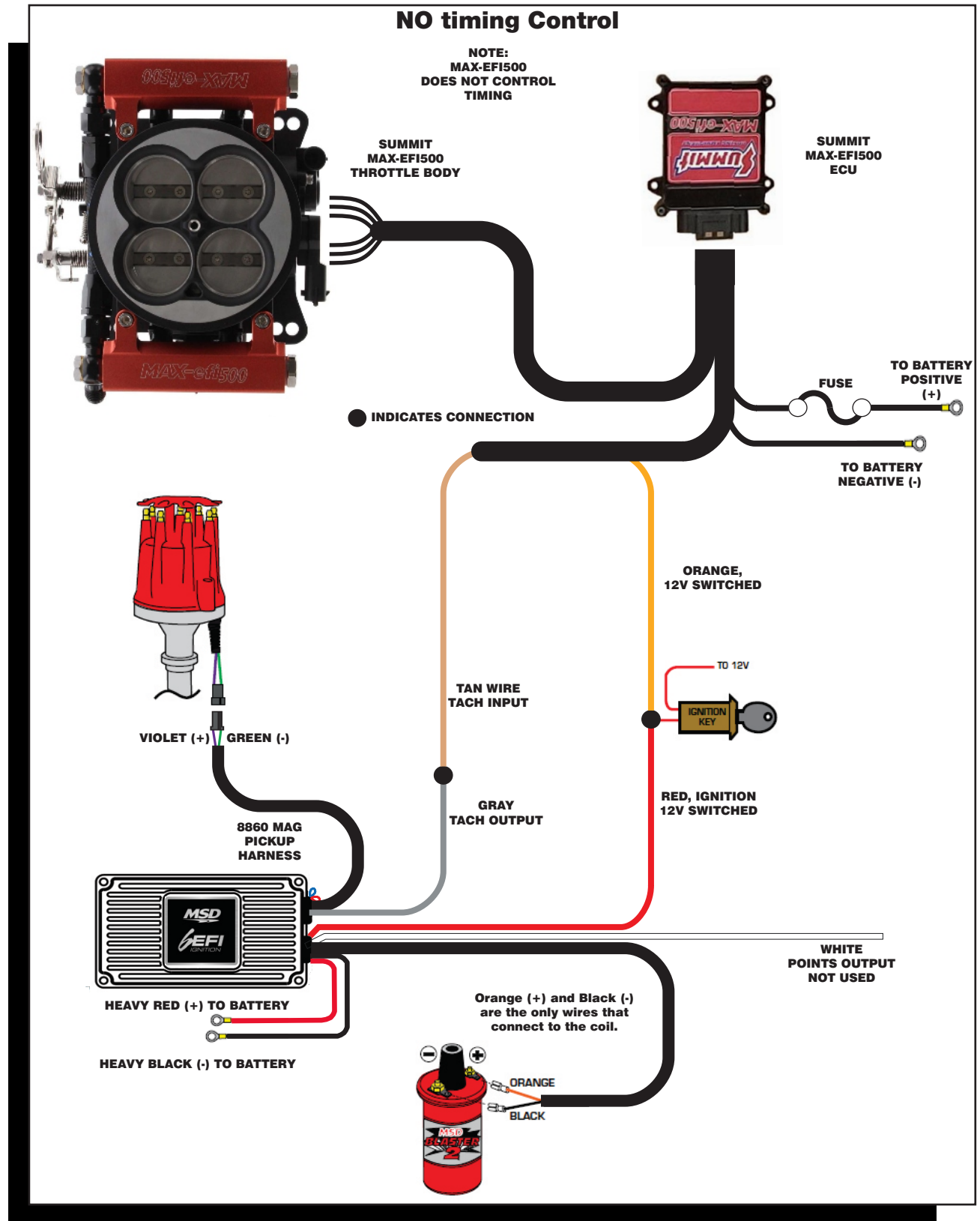


# 6EFI UNIVERSAL IGNITION Installing to EDELBROCK E-STREET EFI





# 6EFI UNIVERSAL IGNITION Installing to Summit Racing MAX-EFI500



## TROUBLESHOOTING

Every Universal EFI Ignition undergoes numerous quality control checks including a four hour burn-in test. If you experience a problem with your ignition, our research has shown that the majority of problems are due to improper installation or poor connections.

The Troubleshooting section has several checks and tests you can perform to ensure proper installation and operation of the Universal EFI Ignition. If you have any questions, call our Customer Support Department at (915) 855-7123, 8 - 5 mountain time.

## TACH/FUEL ADAPTERS

If your tachometer does not operate correctly or if you experience a no-run situation with your foreign vehicle you probably need a Tach Adapter from MSD Ignition. The chart below lists common tachometers and if an Adapter is necessary.

Tachometer Compatibility List		
AFTERMARKET TACHOMETER	WHITE WIRE TRIGGER	MAGNETIC TRIGGER CONNECTOR
AUTOGAGE	8910	8920
AUTOMETER	NONE	NONE
FORD MOTORSPORTS	NONE	NONE
MALLORY	NONE	NONE
MOROSO	NONE	NONE
STEWART (voltage triggered)	8910	8920
S.W. & BI TORX	NONE	NONE
SUN	8910	8920
VDO	8910	8920
AMC (JEEP)	8910	8920
CHRYSLER	8910	8920
FORD (voltage triggered)	8910	8920
GENERAL MOTORS	Bypass In-Line Filter	Bypass In-line filter
IMPORTS	8910	8920
TOYOTA	8910EIS	

Note: On the list above, the trigger wire on tachometers that are marked NONE may be connected to the Tach Output wire on the Universal EFI Ignition.

## INOPERATIVE TACHOMETERS

If your tachometer fails to operate with the CDI installed you may need a Tach Adapter from MSD Ignition. Before getting an Adapter, try connecting your tachometer trigger wire to the Gray Wire. This output produces a 12 volt, square wave. If the tach still does not operate, you will need a Tach Adapter. There are two Tach Adapters:

**PN 8920:** If you are using the Magnetic Pickup connector (Green and Violet wires) to trigger the CDI, you will need the PN 8920.

**PN 8910:** If your tachometer was triggered from the coil negative terminal (voltage trigger) and you are using the White wire to trigger the cdi you will need the PN 8910.

## ENGINE RUN-ON

If your engine continues to run even when the ignition is turned Off you are experiencing engine Run-On. This usually only occurs on older vehicles with an external voltage regulator. Because the CDI receives power directly from the battery, it does not require much current to keep the unit energized. If you are experiencing Run-On, it is due to a small amount of voltage going through the charging lamp indicator and feeding the small Red wire even if the key is turned off.

**Early Ford and GM:** To solve the Run-On problem, a Diode is supplied in the parts bag. By installing this Diode in-line of the wire that goes to the Charging indicator, the voltage is kept from entering the CDI. Figure 7 shows the proper installation for early Ford and GM vehicles.

**Note:** Diodes are used to allow voltage to flow only one way. Make sure the Diode is installed facing the proper direction (as shown in Figure 7).

**Ford:** Install the Diode in-line to the wire going to the #1 terminal.

**GM:** Install the Diode in-line to the wire going to terminal #4.

**GM 1973 - 1983 with Delcotron Alternators**

GM Delcotron Alternators use an internal voltage regulator. Install the Diode in-line on the smallest wire exiting the alternator (Figure 7). It is usually a Brown wire.

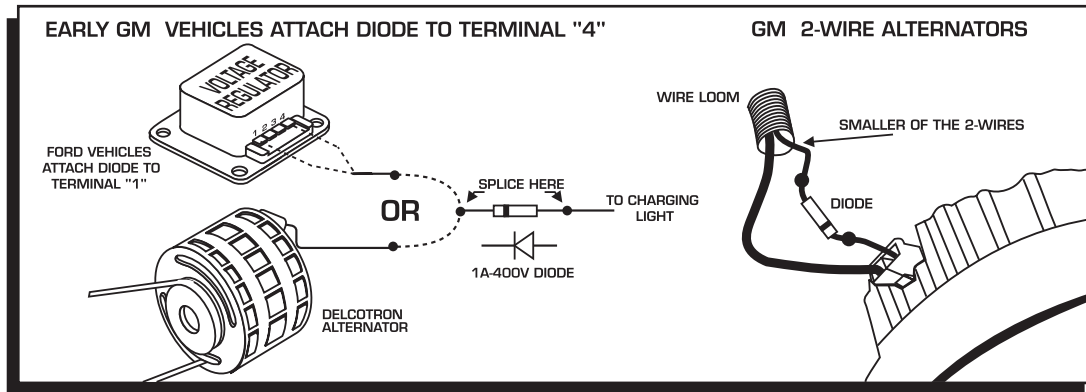


Figure 7 Installing the Diode to fix Run-on

**LED**

The LED on the side of the Universal EFI ignition monitors several operating conditions of the ignition. If the LED indicates that there is a problem with the ignition system, follow the steps through the Troubleshooting section. The LED will appear to be on steady at above idle speeds when everything is functioning properly.

- When 12 volts are applied to the small Red wire, the LED will turn on to indicate power.
- When cranking or running, the LED will blink for each trigger signal.
- If the input voltage drops below 9 volts it will flash at idle speed.
- Code 2 will flash for low battery voltage.
- Code 3 will flash for converter off (ignition problem)

**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 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 Universal EFI ignition 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 10 volts during a race, the CDI output voltage will drop.
- 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.

If everything checks positive, use the following procedure to test the ignition for spark. MSD also offers Ignition Testers (PN 8998 or 89981). This tool allows you to check your complete ignition system while it is in the car as well as the operation of rpm limits, activated switches and shift lights.

## CHECKING FOR SPARK

### If triggering the ignition with the White wire:

- 1 Make sure the ignition switch is in the "Off" position.
2. Remove the coil wire from the distributor cap and set the terminal approximately 1/2" from ground.
3. Disconnect the White wire from the distributor's points or ignition amplifier.
4. Turn the ignition to the On position. Do not crank the engine.
5. Tap the White wire to ground several times. Each time you pull the wire from ground, a spark should jump from the coil wire to ground (the LED should also blink). If spark is present, the ignition is working properly. If there is no spark skip to step 6.

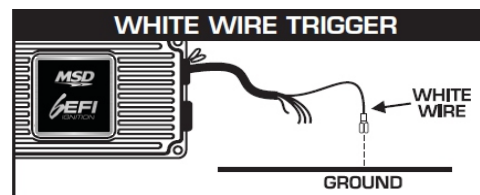


Figure 8 Checking for Spark with the White Wire.

### If triggering with the Magnetic Pickup:

1. Make sure the ignition switch is in the "Off" position.
2. Remove the coil wire from the distributor cap and set the terminal approximately 1/2" from ground.
3. Disconnect the magnetic pickup wires from the distributor.
4. Turn the ignition to the On position. Do not crank the engine.
5. With a small jumper wire, short the magnetic pickup Green and Violet wires together several times. Each time you break this short, a spark should jump from the coil wire to ground (the LED should also blink). If spark is present, the ignition is working properly. If there is no spark skip to step 6.

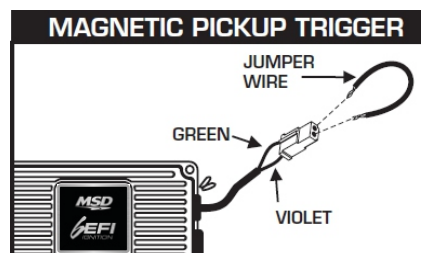


Figure 9 Checking for Spark with Magnetic Pickup.

### 6. If there is no spark:

- A. Inspect all of the wiring.
- B. Substitute another coil and repeat the test. If there is now spark, the coil is at fault.
- C. If there is still no spark, check to make sure there is 12 volts on the small Red wire from the Universal EFI Ignition when the key is in the On position. If 12 volts is not present, find another switched 12 volt source and repeat the test.
- D. If, after following the test procedures and inspecting all of the wiring, there is still no spark, the Universal EFI Ignition is in need of repair. See the Warranty and Service section for information.

## APPENDIX A - ROTOR PHASING DETAILS

DIST	APPLICATION	DISCRIPTION	ROTOR NEEDED	ROTOR RETARD NEEDED	NOTES
83506	FORD	R-t-R Marine Ford 351-460	84211	15°	
8517	BUICK	Buick V8 Billet, 400-455	84211	15°	
8548	BUICK	Buick V8 215-350 Pro Billet	84211	15°	
8547	CHEVY	Super Tall Block, Mag Pick.	8421	15°	
8355	CHEVY	OBS-Dist,Chevy, D/ PU, Locked*Sub w/8356	84211	15°	
8356	CHEVY	Chevy V8, Dual Pickup	84211	15°	
85501	CHEVY	Chevy V8,Pro-Bill,locked,cap,rotor	84211	15°	
85503	CHEVY	Chevy V8, w/Capadapt/ locked Shaf	84211	15°	
85551	CHEVY	Chevy V8,Pro-Billet,w/Cap, Rotor	84211	15°	
85553	CHEVY	Chevy V8, Mod Shafiroff	84211	15°	
85561	CHEVY	Chevy V8 w/Slip Collar,Cap, Rotor	84211	15°	

APPENDIX A - ROTOR PHASING DETAILS

DIST	APPLICATION	DISCRIPTION	ROTOR NEEDED	ROTOR RETARD NEEDED	NOTES
83606	CHEVY	R-t-R Marine Chevy V8	84211	15°	
8534	CHRY	Chrysler, 318, 360	84211	15°	
8582	FORD	Ford V8, 302	8421	15°	
8598	FORD	Ford 289/302 Hyd Roller-Steel Gear	8421	15°	
8580	FORD	Ford V8, 351C, 460	8421	15°	
85805	FORD	Ford 351W, w/ Edel. Vic. Jr	8421	15°	
8584	FORD	Ford V8, 351W	8421	15°	
85840	FORD	Ford 351W,w Roller Stl Gear	8421	15°	
8569	FORD	Ford 351C/M, 460, L.P., CT	84211	15°	
8498	GM	OBS-GM Ecotec 4 cylinder	8421	15°	
8589	HOLDEN	Holden V8 308 ci engines	84211	15°	
8566	OLDS	Oldsmobile V8, 350, 455	84211	15°	
8490	PONT	OBS-151 4Cyl	8421	15°	
8563	PONT	Pontiac V8, 350, 455	84211	15°	
2345	CHEVY	Ign. Trigger Sync Signal Lock/Out	84211	15°	
23451	CHEVY	Ign Trig. w/Hall LED Sync Pickup	84211	15°	
23451EDEL	CHEVY	Ign Trg w/LED Sync Pckup & LD Cap	84211	15°	
2357	CHEVY	Cam Sync w/Rotor Phasing, Chevy V8	84211	15°	
8570	CHEVY	Chevy V8,Small Cap/Base	84211	15°	
8545	CHRY	Chrysler 383,400 Pro-Billet	84211	15°	
8546	CHRY	Chrysler 426,440	84211	15°	
2358	FORD	Sync Rotor Phas, 289/302 Steel Ger	84211	15°	
2358EDEL	FORD	Cam Sync Ford 289/302, Steel Gear	84211	15°	
2358ROUSH	FORD	Sync Rotor Phasing, 289/302, Roush	84211	15°	
2359	FORD	Sync Rotor Phas, 289/302, Cast Ger	84211	15°	
2360	FORD	Sync Rotor Phas, 289/302 Bronze Gr	84211	15°	
8579	FORD	Ford 302, Pro Billet, Small Cap	84211	15°	
2362	FORD	Sync Rotor Phas, 351W, Steel Gear	84211	15°	
2362EDEL	FORD	Cam Sync Ford 351W, Steel Gear	84211	15°	
2362ROUSH	FORD	Sync Rotor Phasing, 351W, Roush	84211	15°	
2363	FORD	Sync Rotor Phasing, Ford FE, Roush	84211	15°	
2363ROUSH	FORD	Sync Rotor Phasing, Ford FE, Roush	84211	15°	
8577	FORD	Ford 351C-460, ProBillet, Small Cap	84211	15°	
8578	FORD	Ford 351W, Pro Billet, Small Cap	84211	15°	
2356EDEL	PONT	Pontiac Cam Sync w/Hall Effect P/U	84211	15°	
8394	CHEVY	GM Digital E-Curve	84211	15°	
8504	CHRY	Chry 318, 340, 360, E-Curve	84211	15°	
8503	FORD	Ford 289/302, E-Curve	84211	15°	
8477	FORD	Ford 351C-460, Vac. Advance	84211	15°	Keep Vacuum Canister in place.
8478	FORD	Ford 351W, Vacuum Advance	84211	15°	Keep Vacuum Canister in place.
8478ROUSH	FORD	Roush Ford 351W, Vacuum Advance	84211	15°	Keep Vacuum Canister in place.
8479	FORD	Ford 289/302, VacuumAdvance	84211	15°	Keep Vacuum Canister in place.
8386	CHRY	Chry. 383-400, R-t-R	84211	15°	Keep Vacuum Canister in place.
8387	CHRY	Chry. 440,426 R-t-R	84211	15°	Keep Vacuum Canister in place.
8350	FORD	Ford 351C-460, R-t-R	84211	15°	Keep Vacuum Canister in place.
83501	FORD	Ford 351C-460, R-t-R,Stl Gr	84211	15°	Keep Vacuum Canister in place.
8352	FORD	Ford 289/302, R-t-R	84211	15°	Keep Vacuum Canister in place.
83521	FORD	Ford 289/302, R-t-R, Stl Gr	84211	15°	Keep Vacuum Canister in place.

TECH NOTES

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# INSTALLATION INSTRUCTIONS

## TECH NOTES

### Service

In case of malfunction, this MSD component will be repaired free of charge according to the terms of the warranty. When returning MSD components for warranty service, **Proof of Purchase** must be supplied for verification. After the warranty period has expired, repair service is based on a minimum and maximum fee.

**All returns must have a Return Material Authorization (RMA) number** issued to them before being returned. To obtain an RMA number please contact MSD Customer Service at 1 (888) MSD-7859 or visit our website at [www.msdpower.com/rma](http://www.msdpower.com/rma) to automatically obtain a number and shipping information.

When returning the unit for repair, leave all wires at the length in which you have them installed. Be sure to include a detailed account of any problems experienced, and what components and accessories are installed on the vehicle. The repaired unit will be returned as soon as possible using Ground shipping methods (ground shipping is covered by warranty). For more information, call MSD at (915) 855-7123. MSD technicians are available from 7:00 a.m. to 5:00 p.m. Monday - Friday (mountain time).

### Limited Warranty

MSD warrants this product to be free from defects in material and workmanship under its intended normal use\*, when properly installed and purchased from an authorized MSD dealer, for a period of one year from the date of the original purchase. This warranty is void for any products purchased through auction websites. If found to be defective as mentioned above, it will be repaired or replaced at the option of MSD. Any item that is covered under this warranty will be returned free of charge using Ground shipping methods.

This shall constitute the sole remedy of the purchaser and the sole liability of MSD. To the extent permitted by law, the foregoing is exclusive and in lieu of all other warranties or representation whether expressed or implied, including any implied warranty of merchantability or fitness. In no event shall MSD or its suppliers be liable for special or consequential damages.

\*Intended normal use means that this item is being used as was originally intended and for the original application as sold by MSD. Any modifications to this item or if it is used on an application other than what MSD markets the product, the warranty will be void. It is the sole responsibility of the customer to determine that this item will work for the application they are intending. MSD will accept no liability for custom applications.