

## SPARK PLUG WIRES

Choice of spark plug wires is an important consideration when using an electronic ignition system. You must use carbon core resistor spark plug wires. Solid or Spiral wound wires will damage the ignition module and void the warranty!

## SPARK PLUGS

You must use a resistor spark plug with electronic ignitions. Stock spark plugs are resistor type plugs and will work. Spark plug gap should be limited to as small as possible, while still maintaining performance.

A wide spark plug gap can cause the following problems: Hard cold starting, misfires during rich or lean fuel conditions, and reduction of upper rpm range.

Initial settings for spark plug gaps are:

Single plug Multi-Spark                      0.028-0.032

### Many things effect spark plug gap settings:

**Compression Ratio:** The higher the engine compression, the more voltage required to fire the plug, and the narrower the plug gap should be.

**RPM:** The higher the rpm's the less time the coil has to charge to break over voltage or complete saturation. A narrower spark plug gap will help high rpm stability.

**Multi-Spark:** To maintain a good secondary spark within a wider rpm range it is wise to run a narrower spark plug gap. It is better to precisely place two stable, consistent sparks than to fire one wider spark that may cause misfires in rich or lean conditions, or from any of the above reasons.

### **For your information/Tech Tips**

When using the Quick Time Method the typical start-up (static timing) is set at 5° BTDC, the ignition starts a 5° then after approximately 3 revolutions of the crank the ignition advances to 25°. As set from the factory the ignition will advance to 35° at 2100 RPM's. If the static timing is set a 0°, then after approximately 3 revolutions of the crank, the ignition advances to 20°. As set from the factory the ignition will advance to 30° at 2100 RPM's.

**STARTING:** if you experience kick back on the starter you are too far advanced at startup, retard the module CCW.

If the engine starts hard & idle is low you may be too far retarded at startup and may need to advance the module CW.

If you experience pinging in the midrange, retard the module.

**Jetting-**The SPYKE Ignition burns more fuel more efficiently than other ignitions because of the multiple-spark. Usually you should increase the intermediate and main jet by one to two sizes. Symptoms of being too lean are stuttering, hesitation, and backfiring.

**Pinging-**If you experience pinging in the midrange retard the module or raise the last step of the advance curve to a higher RPM by turning the Advance Adj. set screw CCW (1/4turn=500 RPM), the LED will light indicating your total advance. You must tune this by trial and error.

All information contained in this owner manual is the property of Spyke Inc. and cannot be duplicated in whole or in part by any means or disseminated or distributed without the prior written consent of Spyke Inc. The information in this manual has been carefully compiled and checked for accuracy and is believed to be correct. However, Spyke Inc. accepts no responsibility for inaccuracies which may occur. All specifications in this manual are subject to change without notice.

**SPYKE INC.**  
12155 Pangborn Ave.  
Downey, CA 90241

THE FOLLOWING CUSTOMER ACTIONS AUTOMATICALLY VOIDS THE WARRANTY

1) Use of any other spark plug wires other than resistor type wires. 2) Use of non-resistor spark plugs. 3) Drilling or cutting of any kind into the ignition. 4) Incorrect wiring of the module. 5) Use of module on systems with defective charging systems. 6) Use of defective coils. 7) Directly shorting the coil output wires to +12 VDC. 8) Physical damage to the ignition. 9) Any other items covered in the warranty.

### LIMITED WARRANTY

Spyke Inc. warrants to the original retail purchaser of a Spyke ignition that it will, free of charge, repair or replace at its own option, the product if returned to Spyke Inc. within 6 months after purchase and if found by Spyke Inc. to be defective in material or workmanship. This warranty is not transferable by the purchaser and shall be voided: if alterations not authorized by Spyke Inc. are made in the equipment or if the serial number or date of manufacture has been altered, defaced or removed. Nor does this warranty apply: if the equipment has been subjected to accident, misuse, improper hookup, damaged by flood, fire, or act of God. If the equipment is found to be defective but is due to customer misuse (as described in warranty) Spyke Inc. will notify the customer and if the customer wants the defective equipment returned Spyke Inc. will return the equipment C.O.D. freight.

**Any module returned under the warranty must include note of explanation of failure and be accompanied by a dated bill of sale. Warrantied items must be taken up directly with Spyke Inc. by the individual user. Failure to do so will void Spyke Inc. of any obligation to repair or replace the ignition.**

Spyke Inc. warranty obligations are limited to those set forth herein and no other obligations, expressed or implied, are assumed by Spyke Inc.

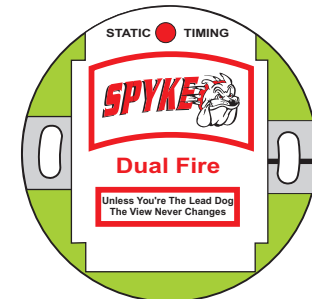
Some states do not allow the exclusions or limitations of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.



**Unless You're The Lead Dog,  
The View Never Changes!**

## **SPDFM**

**DUAL FIRE  
MULTI-SPARK  
ELECTRONIC IGNITION SYSTEM FOR  
HARLEY-DAVIDSON MOTORCYCLES**



- **DOUBLE FIRE OPERATION**
- **EXTREME SPARK STABILITY**
- **MULTI-SPARK OPERATION**  
(Twice on Compression)
- **COIL SHUTOFF SAFETY FEATURE**
- **COIL SATURATION CONTROL**
- **LED STATIC TIMING INDICATOR**
- **CORRECTED TACHOMETER OUTPUT**
- **EASY INSTALLATION**
- **CONE MOUNT**

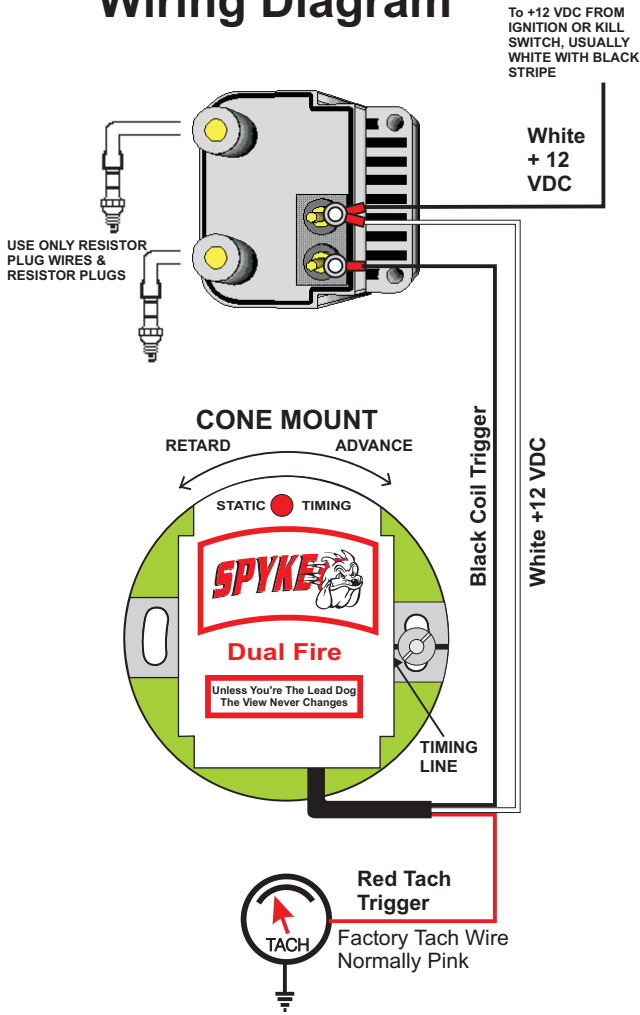
**SPYKE INC.**  
11258 Regentview Ave.  
Downey, CA 90241

Phone (562) 803-1700 Fax (562) 803-0378

**(Do not call the tech number unless you have thoroughly read these instructions and already consulted a certified mechanic for assistance!)**

Further information available at  
[Spykeinc.com](http://Spykeinc.com)

# Wiring Diagram



Rev limiter is preset to 5800 RPM's.

USE ONLY RESISTOR (CARBON CORE) SPARK PLUG WIRES & RESISTOR SPARK PLUGS.

DO NOT USE SPIRAL WOUND SUPPRESSION OR SOLID TYPE SPARK PLUG WIRES!

STOCK SPARK PLUG WIRES ARE CARBON CORE WIRES & WILL WORK.

IF THIS IS NOT DONE IT WILL DAMAGE THE IGNITION MODULE OR COIL.

## INSTALLATION INSTRUCTIONS

**WARNING: DO NOT TOUCH COIL OUTPUT WIRES (BLACK TO +12 VDC. DO NOT USE SOLID OR SPIRAL WOUND SUPPRESSION SPARK PLUG WIRES, USE RESISTOR WIRES ONLY. FAILURE TO OBSERVE THESE PRECAUTIONS WILL DAMAGE MODULE & VOID THE WARRANTY.**

**IMPORTANT: Disconnect battery ground during installation. Do not hook up the coils until the very last thing.**

1. Remove all components from the ignition cone cam cover area, exposing the cam shaft end. Install the rotor cam shaft end, aligning the notch on rotor with cam notch & attach with supplied washer & screw. If you have a stock module leave it mounted in place, but disconnect it from the coil, tachometer and ignition switch wire.

2. Pull ignition wire through wire hole & rock ignition into cone. The STATIC TIMING LED at top & quick time arrow pointing forward at hold down screw. In the case of a sportster everything is rotated 90° clockwise with LED facing forward and hold down screws in the vertical position.

3. Insert the rear lock down screw, point the timing line on ignition as shown in the Quick Time method centered of the front lockdown screw, insert front lock down screw & tighten both.

4. Hook ignition positive (White) wire to the ignition supply, usually at the coil is best with the kill or ignition switch wire.

5. Hook the red (if you have a red and green wire, green wire not used. If no red wire use green) ignition wire to the tach trigger wire of motorcycle (usually pink) if used.

6. Hook the black wire to the coil trigger side of the coil.

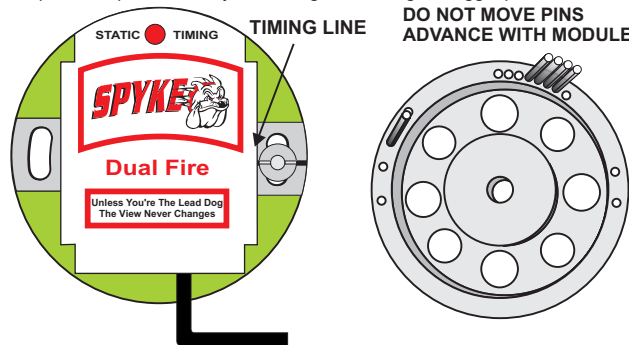
7. Reconnect battery ground.

### QUICK TIME METHOD:

Place timing line as shown in drawing below so that it points to dead center of the front hold down screw. The timing will be set at approximately 5° BTDC static 35° total timing. If pointed approximately 1/16" below (clockwise) of dead center of front hold down screw. Timing will be set at approximately 10° BTDC static 40° total timing. In the case of a sportster everything is rotated 90° clockwise with LED facing forward and hold down screws in the vertical position.

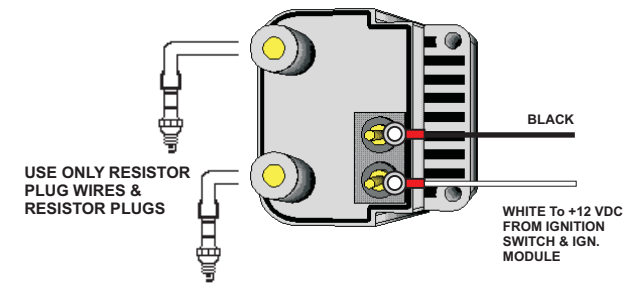
### TOP DEAD CENTER TIMING METHOD:

Turn the engine over to the TDC mark of the compression stroke on the fly wheel. With the power on (+12 VDC), rotate the trigger plate all the way clockwise. Next, rotate the trigger plate (CCW) counterclockwise until the red LED static timing light on the #1 (front cylinder) trigger just begins to light. Lock down the trigger plate hold down screws. Recheck engine TDC mark to make sure no movement has occurred. Peg #1 will be set at approximately 8° BTDC. Additional adjustments may be made to meet your engines specific requirements, by advancing or retarding the trigger plate.

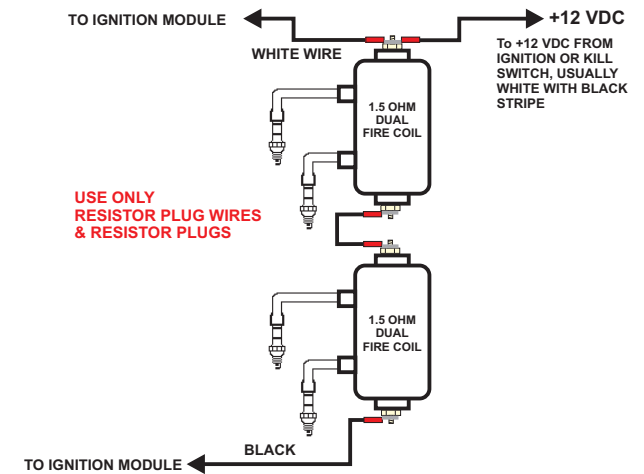


## COIL HOOKUP DRAWINGS

### SPYKE DUAL FIRE COIL



### Dual Fire, 2 Plugs/Cylinder, 1.5 Ohm Coils (Spyke does not have these coils)



## COIL HOOKUP GUIDELINES

1. USE ONLY RESISTOR PLUGS & RESISTOR PLUG WIRES EVEN WHEN GROUNDING OUTPUTS ON TWO OUTPUT COILS FOR SINGLE OUTPUT USE.
2. DO NOT TOUCH THE BLACK COIL OUTPUT WIRE TO +12 VDC.
3. A TOTAL OF 2.8 OHMS IS THE MINIMUM ALLOWABLE COIL RESISTANCE.
4. DO NOT HOOK UP COILS WITH POWER (12 VDC) APPLIED TO THE COILS & IGNITION MODULE.
5. BE SURE THE COIL USED DOES NOT REQUIRE A BALLAST RESISTOR, IF IT DOES, IT MUST BE USED.
6. MAKE SURE NOT TO RUN WIRING NEAR HIGH HEAT AREAS OF THE MOTORCYCLE, SUCH AS THE EXHAUST SYSTEM.